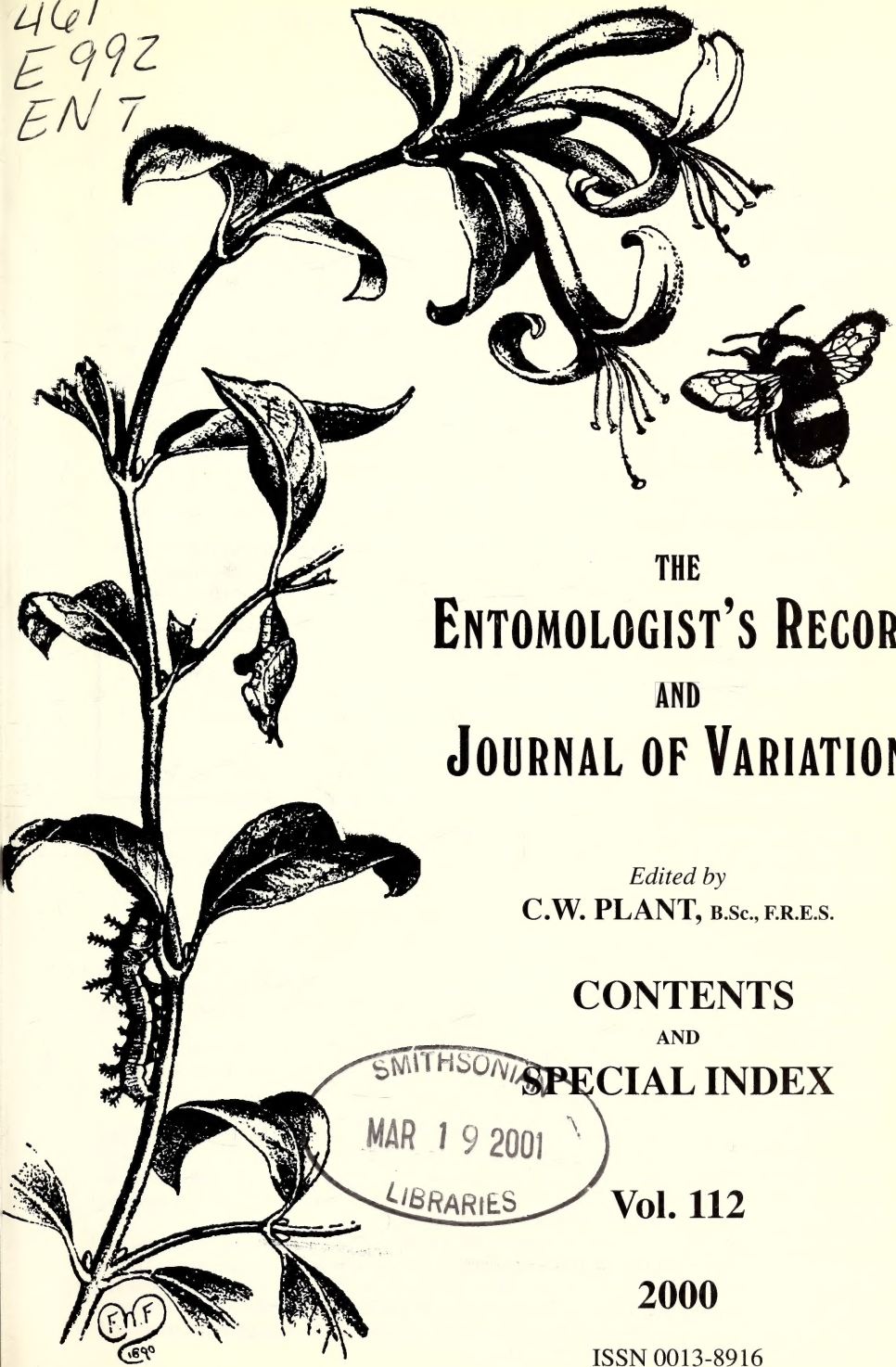

THE ENTOMOLOGIST'S RECORD AND JOURNAL OF VARIATION

Edited by
C.W. PLANT, B.Sc., F.R.E.S.

CONTENTS AND SPECIAL INDEX

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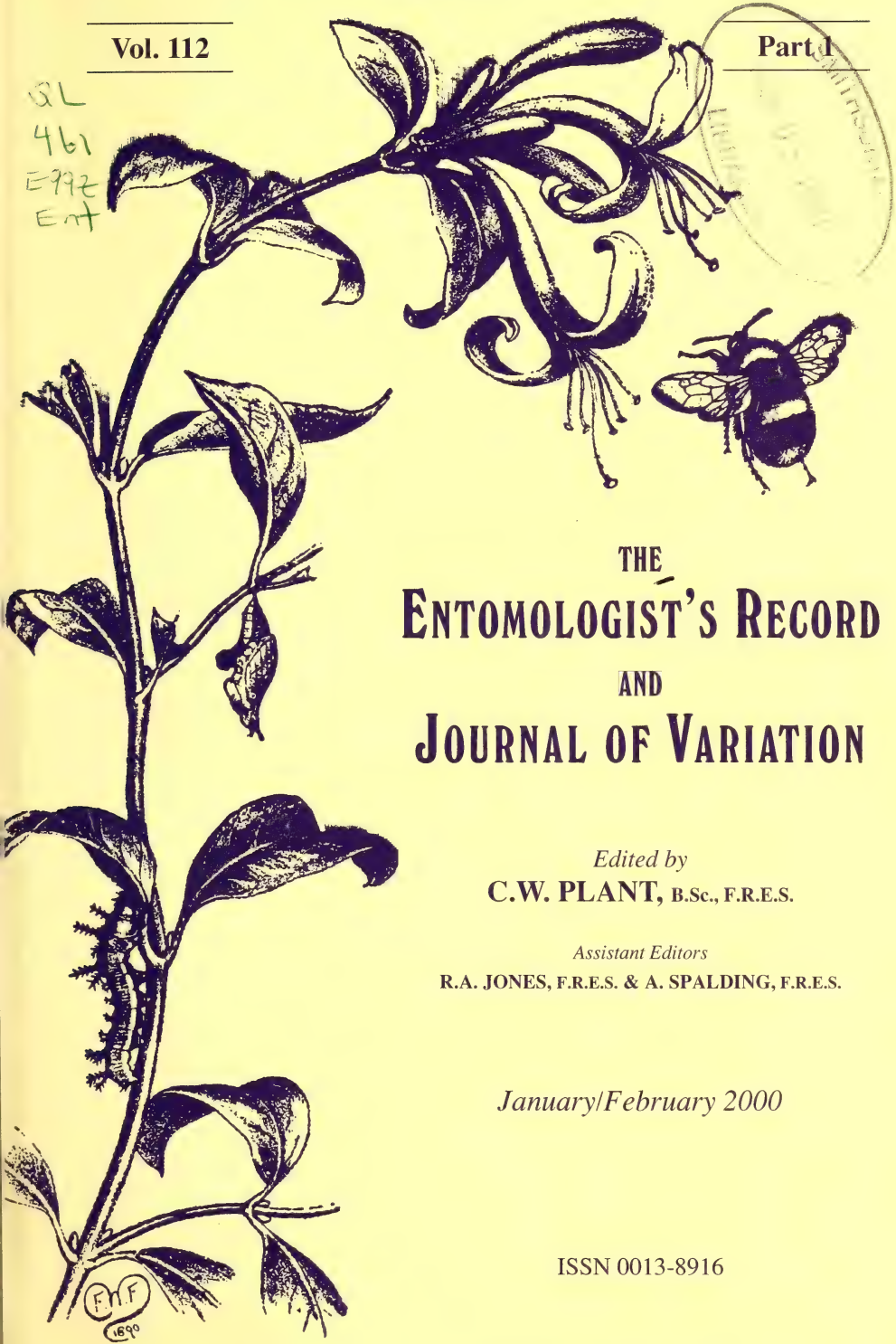

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Edited by
C.W. PLANT, B.Sc., F.R.E.S.

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THE CONSERVATION OF *GORTYNA BORELII LUNATA* FREYER (LEP.: NOCTUIDAE)

CHRIS GIBSON

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Summary

FISHER'S ESTUARINE MOTH *Gortyna borelii lunata* Freyer is a rare native moth, found only around the Walton Backwaters in north-east Essex. It is dependent upon hog's-fennel *Peucedanum officinale* as its sole British larval food plant. Ongoing research into the life history and ecology of the moth is described. Amid some controversy, *G. borelii* was added to Schedule 5 of the Wildlife & Countryside Act 1981 during 1998. An incident occurred in 1999 which resulted in the first action in relation to its new legal protection.

Introduction

Fisher's Estuarine Moth *G. borelii lunata* was first confirmed as a British breeding species as recently as 1971 (Fisher, 1992), when its larval workings in the roots of hog's-fennel *Peucedanum officinale* were located by the Walton Backwaters in north-east Essex. Prior to that date, only three confirmed specimens were known, all from an adjacent locality (1968-70), although there is anecdotal evidence that it may have occurred in the same area during the very early years of the twentieth century (Harwood, 1903).

Following this discovery, the British populations of its larval food plant (in Essex, Kent and, more recently, Suffolk) have been examined for the presence of *G. borelii*: so far as is known, it has only ever been found (other than as undocumented, unauthorised introductions) in the *Peucedanum* population on sea walls and coastal grassland between Walton-on-the-Naze and Dovercourt. *Peucedanum* is itself a *Red Data Book* species, which also plays host to another rare moth *Agonopterix putridella* (Oecophoridae).

A certain amount is known about the biology and ecology of *G. borelii*. It overwinters as an egg. In May, at the small larval stage, typically 70% or more of the food plants show signs of larval workings, often indicating the presence of several larvae per plant. By July, typically 30% or fewer of the plants show signs of the presence of larger larvae and, as it is a large root-borer, it is believed that each affected plant supports just one larva. The adult moth emerges in September or October; not all parts of the population is examined in every year, but the number of adults reported in any year does not generally exceed one hundred. Informed opinion, albeit with little detailed justification at this stage, suggests that the true adult population size is likely to be in the range one to five thousand. Although the moth is to be found throughout the Walton Backwaters population of hog's-fennel, including plants found on isolated islands, we have little evidence to suggest that the moth has good dispersal/colonisation powers: during the thirty years of its confirmed existence, only five moths have ever been found more that 10 metres from a food

plant, despite an array of regular moth-trapping locations within 10 kilometres of the site.

Research

The rarity and uniqueness of *G. borelii* to this part of the country led to the inclusion of action plans for both moth and food plant in the *Essex Biodiversity Action Plan*, published in March 1999. One of the key actions relating to *G. borelii*, in addition to protection of its habitat, is research - to find out more about its life-history, population biology and ecology. Such information is vital if we are to safeguard and enhance, through management, the population of Fisher's Estuarine Moth. Several research and survey programmes are under way:

- in 1997, a length of sea wall was taken out of the usual mowing regime, in response to concerns expressed by the Essex Lepidoptera Panel that mowing the whole of the sea wall in August every year was damaging to some insect populations, including *G. borelii*. The Environment Agency and English Nature co-operated in the establishment of an experiment to investigate the effects of different mowing regimes; the experiment has been monitored intensively since that time, and is likely to continue for at least two further years;
- in 1999, a contract was let by English Nature to assess the current state of the Essex hog's-fennel population;
- also in 1999, a PhD project investigating *G. borelii* was started at Writtle College, supported by English Nature, Environment Agency and Butterfly Conservation.

The results of this research will be fully disseminated through the entomological literature in due course.

Scheduling

Special protection is afforded to a select band of invertebrates through their inclusion on Schedule 5 of the Wildlife & Countryside Act 1981. Amongst other things, Section 9 of that Act makes it illegal intentionally to kill, injure, take, possess or sell any wild animal (or derivative thereof) listed on Schedule 5. Any such animal is deemed to be wild unless the contrary can be demonstrated; captive-bred stock is not wild in this context. In addition, it is illegal to damage, destroy or obstruct access to any structure or place which such an animal uses for shelter or protection, or to disturb any such animal while it is occupying a place of shelter or protection.

The inclusion of a species on Schedule 5 is not undertaken lightly. It is considered only if there is good conservation reason to do so - that is, only if there are perceived threats which may be prevented by scheduling and that failure to schedule may risk extinction of the species. English Nature has long felt that *Gortyna borelii* meets these criteria, as a result of:

- a low presumed population size and very low observed population size;

- the apparent subdivision of the population into semi-isolated smaller groups;
- depredations of collectors. The species is easily found given its reliance on one food plant, and in some years at least, the activities of collectors have been all too apparent, with hog's-fennel plants uprooted (illegally) and trampled;
- unsympathetic management regimes on the sea walls in particular;
- the very tenuous nature of the current sites, squeezed between ever-increasing sea levels and intensive agriculture.

The case was made through JNCC, and eventually accepted by DETR; Fisher's Estuarine Moth was added to Schedule 5 of the Wildlife & Countryside Act 1981 in March 1998. But this was not universally welcomed. During the DETR's consultation period, a number of representations were made against scheduling, especially from certain entomological societies. The gist of the objections were:

- scheduling would prevent or inhibit *bona fide* research which could benefit the conservation of *G. borelii*. This argument is not tenable, as there is the facility for English Nature to license such actions as necessary to further conservation of the protected species: more than one thousand licences for research on Schedule 5 species were issued by English Nature in the year to November 1999. The onus would be on the applicant to demonstrate likely conservation benefit - not an unreasonable requirement, in our opinion;
- protection of this species may undermine the statutory protection afforded to other, rarer species, as it may not be as rare and vulnerable as English Nature maintains. Evidence for the latter point was presented in Hart (1998), which stressed the wide distribution and abundance of small larvae. It must however be recognised that it is adult numbers, in particular adult females, which represent the key contribution to the next generation; in some respects, the larval numbers are irrelevant given the likely high mortality rates (both density-dependent and density-independent), through the summer. If, however, future research and survey demonstrates satisfactorily that the species is not threatened, it may be removed from Schedule 5 at one of the five-yearly reviews;
- collectors, assumed (incorrectly) to be the main target of legislative protection, are not a major factor in its rarity: inappropriate habitat management and sea-level rise are of greater significance. English Nature believes that threats to the species come from a variety of sources, all of which need to be addressed.

Sadly, one cannot help but read between the lines that an underlying reason for objections to its scheduling is that there is still a demand for wild-caught specimens, and that there is an assumption that this demand should be catered for. English Nature is not opposed to insect collection where it does not endanger the populations

of rare species. Indeed, in some cases, it is necessary, for identification and taxonomic resolution. However, there are sufficient wild-caught specimens of *G. borelii* in museums and private collections, and a ready commercial availability of captive-bred specimens, for all legitimate requirements.

Enforcement

An assumption was made when the moth became protected that the purpose was to prevent unlicensed collecting. However, the only occasion, thus far, when the law has needed to be invoked relates to damage through inappropriate habitat management works.

On 5 October 1999, I arrived at the site of the EN/EA sea wall mowing experiment to discover that a direct works team from the Environment Agency was in the process of dredging the adjacent borrow-dyke, and placing spoil upon the sea wall. Some 200 metres of spoil deposition had taken place, in three of the eight sections of the experiment. It was clear that some hog's-fennel plants had been buried, and others damaged. Reference to earlier survey work suggested that perhaps 200 large plants were in the affected area and that, just two months previously, almost 40% of these plants had shown signs of occupation by the large larvae of *G. borelii*.

From our knowledge of the life-history of the moth, we supposed that a proportion of these may have already produced flying adults, whilst others remained in or around the rootstocks as pupae: the incident occurred right in the middle of the flight-period. Those which had already emerged would already have laid eggs, again assumed to be on or close to the larval foodplant.

In the view of English Nature, an illegal act may have taken place. There was very strong circumstantial evidence that adult moths or their eggs had been killed or injured, and there was direct observational evidence that previously-occupied foodplants (a not-unreasonable interpretation of 'place of shelter or protection') had been damaged or destroyed. In accordance with our standard practice for offences under Part 1 of the Wildlife & Countryside Act, 1981, the matter was referred to the police, through the Essex Police Wildlife Liaison Officer. A full statement was prepared and referred to the Crown Prosecution Service for their advice.

In the meantime, the Environment Agency acted with commendable urgency. Top priority was to secure effective damage-limitation: the deposited material was removed carefully, following English Nature's specifications. We believe that the foodplants will recover from this trauma, but of course the fact remains that it is very likely that this generation of moths on this stretch of wall will have been adversely affected.

Serious questions were then asked as to how this damage could have occurred. As is so often the case with large organisations, it was a question of communication and consultation (or more precisely, the lack of it). Whilst the conservation section and several senior engineers were well aware of the sensitivity of the site and the presence of *G. borelii* (they had after all set up the mowing experiment with English

Nature), clearly the staff carrying out the work were not. Inasmuch as the placing of the spoil was a deliberate (though not malicious) act, we maintained that an offence may have been committed, and that the EA was therefore corporately liable. Consequently a far-reaching review of consultation and communication procedures within the Environment Agency has taken place, and it is most unlikely that such damage will occur in the future.

When the Crown Prosecution Service reported back on the case, its considered view was that the case would not be accepted for prosecution. It is their view that the evidence does not establish beyond reasonable doubt (the standard of proof required in criminal proceedings) that an offence had occurred. In respect of the possible offence under Section 9(1), this is clearly because we did not have a dead or damaged moth, larva, pupa or egg to show. Regarding the possible offence under Section 9(4), their interpretation appears to be that a place of shelter is only such when it is demonstrably in occupation. Because of uncertainties relating to the biology of the moth, we could not prove beyond reasonable doubt that the potential places of shelter were actually being used when the damage occurred. Notwithstanding the concerns that this advice undermines any protection afforded by Section 9(4), it clearly demonstrates the need for unequivocal information on biology and life history of a species such as *G. borelii*.

With some reservations, therefore, English Nature has accepted the view of the CPS, especially as all desirable conservation outcomes, in terms of site restoration and improved consultation, appear to have been achieved.

Conclusions

English Nature is serious about its responsibilities for the conservation of *Gortyna borelii lunata*. We have committed considerable resources (and will continue to do so), towards research which will inform future actions towards maintaining and enhancing the species' population. We will support and use all available enforcement procedures to implement its legal protection, not excluding prosecution of anybody – even such a valued conservation partner as the Environment Agency. We are confident that the unfortunate events of October 1999 will not be repeated, and that the future of this rare British native moth is now more assured.

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Southward migration of the Red Admiral *Vanessa atalanta* (L.) (Lep.: Nymphalidae)

During many years in Sussex, I was familiar with the southward movement of Red Admirals *Vanessa atalanta* in autumn. This is a well-recognised phenomenon (Heath, J., Pollard, E. & Thomas, J.A., 1984. *Atlas of butterflies in Britain and Ireland.* Viking, Harmondsworth). However, I was surprised to observe a similar passage 500 miles further north, in Banffshire.

Towards the end of September 1999, Red Admirals began moving south through my garden whenever conditions allowed. On 22 September 1999, a balmy autumn day, there were three in quick succession. It seemed a good opportunity to gather actual data, so (purely in the interests of science, you understand) I decided to sit on the patio in the afternoon sun and count butterflies rather than varnish the utility room windowframe.

The temperature was 18°C, with 100% hazy sun. Wind was Beaufort force 2 south-easterly, too light to deflect the butterflies from their chosen path. Observations lasted precisely one hour, from 13.08 – 14.08 BST. Viewing conditions were excellent: bright, but without harsh shadows or glare. All butterflies within a 50 metre wide strip were recorded. The first ten metres of this comprised garden, the rest being closely grazed pasture providing a lawn-like background, so that even the furthest butterflies stood out. Binoculars were on hand to confirm identity, but were rarely needed.

During the one hour period, 75 Red Admirals were seen, of which 74 flew south and one flew north (no comment!). All those travelling south were within a narrow arc between due south and south-west, with most flying south-by-south-west. Over the open pasture, all were one to two metres above the ground; through the garden they were up to four metres. The speed of flight varied. Most were cruising, with a few merely drifting and floating, while others flew rapidly and purposefully. However, in all cases their flight was deliberate and constant. I have no doubt that this was a genuine directional migration. The only other butterfly seen was a Painted Lady *V. cardui* loitering in the garden, the first of the year.

The wider area consisted of gently sloping mixed farmland at 160 metres above sea level, with no obvious topographical features to concentrate the butterflies. Movement appeared to be on a broad front. Ordiquhill is only 11 kilometres from the coast of the Moray Firth to the north, so whether all the Red Admirals had originated from that relatively narrow strip, or some had come from further afield, is uncertain. However, although few primary immigrants reach here in early summer they seem to breed very successfully, and on average I see several times as many in autumn as I used to see in Sussex. M. R. Young (pers. comm.) made the same observation in relation to Aberdeenshire and Herefordshire. It is unlikely that the climate is more favourable for such a southern species in north-east Scotland, so my own hypothesis is that parasitoids which attack Red Admirals in the south are absent (perhaps shared with related nymphalids like Peacock *Inachis io* and Comma *Polygonia c-album*, not resident in north-east Scotland).– ROY LEVERTON, Whitewells, Ordiquhill, Cornhill, Banffshire AB45 2HS.

POSSIBLE EVIDENCE OF GLOBAL WARMING FROM THE EARLY EMERGENCE OF BUTTERFLIES ON THE ISLE OF WIGHT

S.A. KNILL-JONES

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FOR THE LAST eleven years it has been the norm to have mild winters and warm early springs and possible evidence for "global warming" can be shown by the increasing early dates of emergence of our spring butterflies. The years 1989, 1990, 1994, 1997, 1998 and 1999 all experienced such forward springs when eight or more species of butterflies were out by the end of March. In 1997 there were ten species noted before the end of that month and in 1999 twelve out of the thirteen species were recorded in this period which is quite exceptional.

For the last three years this early season continued well into April and 1997 was an exceptional year (Knill-Jones, 1998). *Pyrgus malvae* L. was seen on Afton Down on 10 April in 1997, 8 April in 1998 and 11 April in 1999. *Cupido minimus* (Fuessl.) was seen very early on Afton Down on 29 April 1990 and 27 April 1997. The earliest ever record of this species in England was at Ballard Down, Dorset on 24 April 1945.

On 24 March 1999 there was a freak, but genuine, sighting by Pauline Peach of *Pyronia tithonus* (L.) on the railway line at Ryde. This happens to be the earliest ever sighting of this butterfly in the British Isles which usually emerges in July. The previous earliest record was on 30 May in Warwickshire.

There were two migrant butterflies recorded before the end of March, being *Vanessa atalanta* (L.) and *Cynthia cardui* (L.). A number of sightings were noted in January and this supports the recent theory that these two species hibernate in southern Britain during mild winters.

Table 1 gives the dates and localities of the thirteen species seen before the end of March.

I have obtained similar evidence by studying the early emergence and late partial second and third broods of our moths (Knill-Jones, 1999). A further study over the next decade will help to either enhance or dispel the theory of "global warming" which I feel sure by the evidence collected is with us to stay.

Acknowledgements

I should like to thank Barry Angell for checking and amending my list and for reading and commenting on the manuscript and Dr David Biggs, Denis Britton, Andy Butler, Simon Colenutt, Norman Holland, Pauline Peach, Ian Rippey, Brian Warne and others for their invaluable records and information which has helped me in writing this paper.

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Table 1. Dates and localities for thirteen butterfly species seen on the Isle of Wight before the end of March, during the period from 1989 to 1999.

Year	*Inachis io* L.	*Aglais urticae* L.	*Gonepteryx rhamni* L.	*Polygonia c-album* L.	*Pieris rapae* L.	*Pararge argeria* L.
1989	10.ii Parkhurst	20.ii Parkhurst	26.iii Parkhurst Gurnard	8.iii Cowes	26.iii Gurnard	26.iii Calbourne
1990	21.ii Luccombe	22.ii Freshwater Luccombe Firestone Copse	5.ii Binstead	22.ii Luccombe Firestone Copse	17.iii Freshwater	15.iii Queens Bower
1991	1.ii Newtown	7.iii Freshwater Lake	7.iii Porchfield Parkhurst Shalfleet	7.iii Shalfleet Parkhurst	9.i Niton	12.iv Porchfield
1992	10.i Ventnor	27.ii Freshwater	15.iii Locks Green	27.ii Fort Victoria		8.iv Havenstreet
1993	14.i Brading	13.ii Freshwater	10.iii Cranmore	9.iii Freshwater	18.iii Bonchurch	6.iv Freshwater
1994	28.ii Newport	29.i Mottistone	2.iii Sandown Firestone Copse	17.iii Firestone Copse	11.iv Lake	26.iii Freshwater
1995	9.iii Macketts Land	2.ii Binstead	10.iii Gurnard	12.iii Freshwater Binstead	29.iii Macketts Land	4.iv Freshwater
1996	28.ii Macketts Land	10.i Arreton	29.iii Binstead	17.i Ventnor	17.iv Totland	21.iv Gurnard
1997	13.i Carisbrooke	16.i Solent	2.iii Binstead	6.iii Yaverland Firestone Copse	10.iii Binstead	27.iii Freshwater
1998	8.ii Binstead	10.i Binstead	13.ii Firestone Copse	13.ii Firestone Copse	19.iii Lake	20.iii Freshwater
1999	1.i Osborne	4.i Arreton	13.iii Freshwater Osborne	13.iii Alverstone	17.iii Binstead	27.iii Freshwater

Celestrina argiolus L.	*Pieris napi* L.	*Cynthia cardui* L.	*Vanessa atalanta* L.	*Pieris brassicae* L.	*Anthocharis cardamines* L.	*Pyronia tithonus* L.
28.iii Freshwater	7.v Porchfield	24.v Redhill	Early Jan. Ventnor			
18.iii Cowes	17.iv Shalfleet	12.iii St. Lawrence	8.1 Mottistone		1.iv Gurnard	
10.iv Gurnard	13.iv Alverstone	22.iii Tennyson Down	21.iii Porchfield	13.iii Town Copse		
9.iv St. Helens	11.iv Havenstreet		18.i Chale Green			
18.iv Binstead	26.iii Landslip		29.i Bonchurch Shute			
	26.iv Parkhurst	13.iv Cranmore	28.i Parkhurst			
8.iv Ryde		4.ii Luccombe Down	2.ii Firestone Copse	25.iii Ventnor		
15.iv Gurnard	20.iv Alverstone	18.iii Arreton	12.i Cowes			
20.iii Freshwater	13.iv Freshwater	19.iv Arreton	15.i Gurnard		27.iii Gurnard	
17.iii Firestone Copse			6.i Gurnard			
25.iii Cranmore	17.iii Alverstone	5.i Whitwell	23.i Alverstone	31.iii Niton	4.iv Gurnard	24.iii Ryde railway line

An unusual early brood of the Willow Beauty *Peribatodes rhomboidaria* (D.& S.) (Lep.: Geometridae)?

A number (at least six or seven) of this familiar urban moth, which normally appears here only in late July and August, came to my m.v. lamp on 1 June 1999. The flight period given by all authors I have consulted is from late June at the earliest. But the 11th is nowhere near late in the month and the number present suggests that the species had already been out for some time, perhaps even from the beginning of June. In a really forward season this might be unremarkable, but I am not aware that 1999 has been so. One moth appeared on the night of 9 July and the species was present in at least normal numbers on that of 11 August.

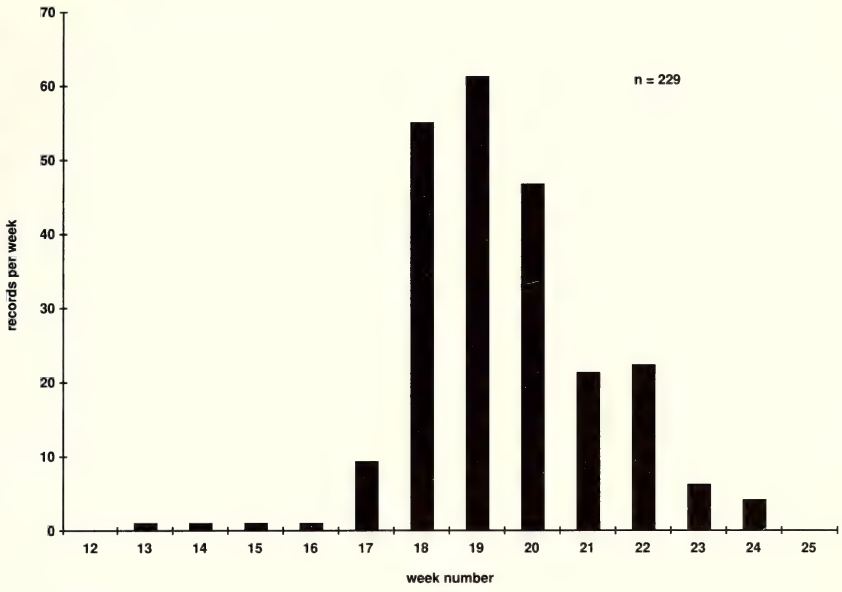
The facts therefore rather suggest an extra brood interpolated into the life-cycle in advance of the normal one; yet that seems improbable to say the least. However, the alternative explanation of a single very protracted emergence hardly appears to fit them much better. Anyone who runs a moth trap throughout the summer would be in a better position to arrive at a sound judgement.– A. A. ALLEN, 49 Montcalm Road, Charlton, London SE7 8QG.

Flight time of the Scotch Argus *Erebia aethiops* (Esper) (Lep.: Nymphalidae) in Scotland

Although the Scotch Argus is one the most widespread species of butterfly occurring in Scotland, and in some areas the most numerous, it is surprisingly difficult to find information on its phenology. Most guides and handbooks suggest the very end of July to early September as the typical flight period, but this is at best anecdotal information.

Of 807 records for Scotch Argus in Scotland, up to 1982, held by the Biological Records Centre (BRC), at Monks Wood, only 47.1% were dated by month. Of these 380 records, 17.6% (67) were for July, 77.4% (294) for August and 4.2% (16) for September. The only set of comparable data that has been published comprises about 250 records for the period 1980-1996 for the Highland area (Stewart, J., Barbour, D. & Moran, S. 1998. *Highland Butterflies: a provisional atlas*). Although some records appear in both data sets, the number is probably relatively small. The monthly profiles are very similar, except that the proportion of August records is higher in the BRC data, which also contains a single record for May and two for June.

There are 229 fully dated records in the BRC data. These are shown divided into week classes (the same week classes used by ITE's Butterfly Monitoring Scheme to enable future comparison) in Figure 1. The total flight period extends over eight weeks, with all but four records falling in the period 22 July to 13 September (weeks 17 to 24) The distribution is skewed with a peak about the second week in August (week 19).



Thomson (1980, *The Butterflies of Scotland*) gives the emergence as "the last day or two of July or the first few days of August". Although the data are few, the BRC records suggest that it is not unusual for Scotch Argus to emerge a full week earlier than the published literature indicates. Thomson (*op. cit.*) also says that "it has been noticed very early in July" and reports a record from D. C. Hulme for 7 July (week 13) and gives a last report of 15 September (week 24: very close to the last date in the BRC data) from David Barbour. There are three early July records in the BRC data: 6th, 13th and 18th. If we accept that there are occasionally early individuals, such as Hulme's, it is difficult not to credit these three records.

Of the May and June records only one is fully dated: 27 June. It is tempting to dismiss these early season records as errors, but it difficult to eliminate such records from the data on rational grounds. While misidentification may occasionally be the cause, the experience of local record centres is that often competent observers jot down the wrong month or the date may get corrupted during data transfer.

A much larger data set is needed before we can begin to look for annual variations in flight times and flight periods, or any differences due to altitude or regional location.

I am grateful to Paul Harding for permission to use the BRC data.– P. K. KINNEAR, 20 East Queen Street, Newport-on-Tay, Fife DD6 8AY

The October occurrence of *Orthopygia glaucinalis* (L.) (Lep.: Pyralidae) and *Pseudargyrotoza conwagana* (Fabr.) (Lep.: Tortricidae) in Yorkshire

I was interested to read the recent note by John Muggleton (*Ent. Rec.* **111**: 260) commenting on October records of *Orthopygia glaucinalis*, for I recorded a female moth of that species, attracted to m.v. light in Anston Stones Wood, South Yorkshire (VC 63), on the evening of 17 October 1997. The Rotherham district of South Yorkshire is not renowned as a hot bed of migrant Lepidoptera and, indeed, the evening did not produce any species which could remotely be considered as migratory. I had considered the moth to represent an atypical partial second generation, a view which has some support in the fact that all the autumnal British records cited by Muggleton have been in October. These dates provide a suitable gap following the main emergence in late-June to early-August which is the usual flight period in Britain. Continental literature gives the flight period extending somewhat later in the year. Skou (1986. *Nordeuropas Pyralider*) cites 6 July to 21 September and Slamka (1997. *Die Zünslerartigen Mitteleuropas*) gives mid-May to mid-September. The fact that no *O. glaucinalis* have, apparently, been recorded in Britain in September perhaps makes immigration as a source of the autumnal moths less likely.

The same evening visit to Anston Stones Wood also provided a specimen of *Pseudargyrotoza conwagana*. Emmet (*Ent. Rec.* **100**: 97-98) drew attention to autumnal records of this species which had previously been considered to occur in a single generation, flying from May to July. His records suggested a smaller second generation from mid-August to early-September while a record at the end of October was considered perhaps to represent a third. In an editorial note at the end of Emmet's article, Sokoloff provided his own records of *P. conwagana* from 1987 in support of those of Emmet. These included two moths dated 28 August and 3 September and a further one on 30 October. It is probably no coincidence that 1997 also provided a second generation from my garden mv trap – a single moth on 13 August. These 1997 records are the first from Yorkshire outside the previously accepted univoltine flight period.

It is interesting that, for both of the species which are the subject of this note, the recently observed additional generations are not confined to the south of England.– H. E. Beaumont, 37 Melton Green, Rotherham, South Yorkshire S63 6AA.

***Nemophora cupriacella* (Hb.) (Lep.: Incurvariidae) new to Warwickshire**

On 10 July 1999, on a small part of Combrook Farn Nature Reserve, in the southern part of Warwickshire, I noted at least three examples of *Nemophora cupriacella* feeding on flowers of *Knautia arvensis*, the main larval food plant. This evidently constitutes a new vice-county record for Warwickshire (VC 38). Back in 1984, I had visited this site and considered it suitable for this species, but the date, 21 July, was probably too late for it and a subsequent visit on 28 June in a later year was evidently too early.– John Robbins, 123b Parkgate Road, Coventry CV6 4GF.

CORTICARIA FAGI (WOLLASTON) (COL.: LATRIDIIDAE) IN SUFFOLK AND SUSSEX

DAVID R. NASH

3 Church Lane, Brantham, Suffolk CO11 1PU.

CORTICARIA FAGI (Wollaston) is among our rarest and least known beetles. It was allocated RDB 2 (Vulnerable) status by Shirt (1987) but Hyman & Parsons (1994) revised this to RDB I (Indeterminate) because of insufficient information upon which to to assess its *Red Data Book* status. *C. fagi* was added to the British list by Allen (1937) (as *aequidentata* sp. n.) on the basis of a single example taken in Windsor Forest in July, 1936. The specimen was later examined by Hansen who found it to be identical with Danish examples of *pietschi* Ganglbauer. Johnson (1974) subsequently compared the British beetle with examples of *Corticaria fagi* taken by Wollaston on Madeira in 1850 (and which were later used to describe the species) and found them to be conspecific.

Although widely distributed in Europe, *C. fagi* appears to be genuinely rare and of sporadic occurrence. Johnson (*op. cit*) refers to the existence of authentic records for France, Denmark, Germany, Poland, Austria and Rumania. Rucker (1992) was only able to add southern Sweden to this list, but cites both West and East Germany as sources of records.

Detailed field data concerning *C. fagi* seems to be sparse. Wollaston (1865) says of his species that "it has been observed hitherto only in the wooded regions of Madeira proper – particularly in the north of the island. It seems to be attached principally to the Spanish chestnut-trees." In view of this last observation it seems rather surprising that he then named the beetle after the beech! The original Danish record – and the only one for that country known to me – is given in Hansen (1951; 1964) and is both interesting and informative *viz* "Hitherto only found at Haderslev in brown coal, which had been transported from Norre Vium, south-west of Herning, in numbers together with *C. elongata*, Sept.- Nov. 1945." Brown coal (lignite) with its numerous plant remains can often have a moisture content in excess of 20%: in view of the number of beetles found it seems likely that they were developing and feeding on moulds growing on the vegetable fragments, leaves etc. on its exposed surfaces.

Since Mr Allens's original capture no further examples have been formally reported for this country (and I am unaware of any unpublished captures), but Hyman & Parsons (*op. cit.*) quoted Suffolk and Sussex on the basis of data supplied by the present writer for Suffolk and Mr P. Hodge for Sussex. The detailed information for the citation of these two counties is as follows:

East Suffolk : 24.ix.1983, Cottage Farm, Little Blakenham (TM 113495) – one beaten from old hazel sticks in cottage garden; *vide* Nash (1982; 1983; 1984) for details of habitat and other mould feeding beetles recorded.

East Sussex : 19.ix.1974, Vert Wood, Loughton (TQ 511135) – one under bark, probably of a fallen beech trunk.

On the basis, it would appear, of the heretofore unique reported British capture, Harding and Rose (1986) graded *C. fagi* as a species known to have occurred recently in Britain only in areas believed to be ancient woodland (Group 1), but the Suffolk information presented here suggests it should now probably be placed in their Group 2 as a species which mainly occurs in ancient woodland, but also occurs in areas that may not be ancient.

Acknowledgements

I thank Mr. P. Hodge for allowing me to publish his record of *C. fagi*, Mr C. Johnson for determining both specimens and Mr A. A. Allen for helpful correspondence and providing the Wollaston quotation and reference.

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I am interested in receiving all records of microlepidoptera for all time from any part of Middlesex, including the entire of London. Individual records of single, common species are just as important as long lists from well-worked sites, so please send everything you have available. Lists should ideally be in *Log Book* order to make entry easier and can be typed or hand-written, on paper, floppy-disk or via e-mail (the latter being preferred). If you wish to send computerised lists from a database please discuss this with me first as I cannot read all formats.– COLIN W. PLANT, 14 West Road, Bishops Stortford, Hertfordshire CM23 3QP; e-mail Colinwplant@compuserve.com.

THE ACTION FOR THREATENED MOTHS PROJECT

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Historical background

Butterfly Conservation (BC), a registered charity, was founded in 1968 as The British Butterfly Conservation Society. It now has a membership in excess of 8000 and is the largest invertebrate conservation society in Europe. Butterfly Conservation was set up with the aim of protecting our diminishing wild native butterflies and moths from destruction of habitat and other threats. The Society is lobbying continuously for a transformation in our attitudes to the countryside and its wildlife. The Society was entirely managed and run by volunteers until 1990 when an administration headquarters was set up. In 1993 the first full-time Conservation Officer was employed. The Society now has over 15 staff and several contractors working on projects relating to Lepidoptera conservation.

Moths have always been included in the remit of BC, but until recently their profile was comparatively low within the Society. In 1993 BC contributed towards the National Moth Conservation Project, a tangible contribution that has continued to this day. The Society has contributed funds to several moth projects, including work on the Bright Wave *Idaea ochrata* (Scop.), the Marsh Mallow *Hydraecia osseola* (Stdgr.), the Speckled Footman *Coscinia cribraria* (L.) and the Small Dotted Footman *Pelosia obtuse* (H.-S.), and funded an international conference on burnet moths. A number of regional workshops on moths have been organised for branches and there have been a wide range of moth related events held by the branches, e.g. several hundred moth trapping evenings. In 1999 the Society employed MP and DG on a full time basis with funding from English Nature (EN) and BC, along with PW in an advisory role, to work on the Action for Threatened Moths Project and the National Recording Scheme for the Rarer British Macro-moths.

The National Moth Conservation Project and the National Recording Scheme for the Rarer British Macro-moths

The National Moth Conservation Project was launched in 1987 by the former Nature Conservancy Council. This project has been operated by PW since its inception and includes work on species on Schedule 5 of the Wildlife & Countryside Act. There are several aims for this project. These include the formation and operation of a national information gathering network; to provide feedback to recorders; and to produce national distribution maps, particularly for the scarce and threatened species. This enables the regular assessment and revision of the conservation status of our scarce and threatened species. In 1990/91, the National Recording Scheme for the Rarer British Macro-moths was formed as part of the project by linking up existing County Moth Recorders and finding recorders for poorly covered areas.

Further details and a résumé of the history of the project are given in Waring (1998 & 1999a). It is expected that the National Recording Scheme for the Rarer British Macro-moths will be integrated within the Action for Threatened Moths Project. This will provide a single point of contact and maximise the use of the data provided by contributors. Contributors will be informed of any change when it occurs. Ten annual news bulletins have been produced by the National Moth Conservation Project and sent to all County Moth Recorders. It is anticipated that future annual newsletters will be produced covering the National Moth Conservation Project, the National Recording Scheme for the Rarer British Macro-moths and the Action for Threatened Moths project continuing PWs precedent.

Butterfly Conservation's Branch Moth Officers and the County Moth Recorders

Many of the current County Moth Recorders were individuals already working on county lists or providing some focal point for recording in a given county. The BC Branch Moth Officer post is relatively new. These started to be formally recognised and appointments made in 1994. *News bulletin 10* of the National Moth Conservation Project (Waring 1999b, 1999c) lists all the BC Branch Moth Officers and the County Moth Recorders. The role of the BC Branch Moth Officer is broadly to co-ordinate moth issues within the Branch and to promote moth recording and organise local events. This should involve forming and developing links with the County Moth Recorder and ensuring that all records of scarce or threatened moths from the Branch are forwarded to the National Recording Scheme for the Rarer British Macro-moths. Fuller details of the roles of BC Branch Moth Officers are given in Waring (1997). Branch Moth Officers and all other contributors are encouraged to send all records via the County Moth Recorder. In a number of cases the County Moth Recorder is also the Branch Moth Officer.

The UK Biodiversity Action Plan and the Action for Threatened Moths Project

In response to the commitment given by the Prime Minister in signing the *Convention on Biological Diversity* at the Earth Summit in Rio de Janeiro in 1992, the UK Government published *Biodiversity: The UK Action Plan* (UK Biodiversity Group 1994). In discharging our obligations under the Biodiversity Convention, the UK Action Plan set as an overall goal: "To conserve and enhance biological diversity within the UK and to contribute to the conservation of global biodiversity through all appropriate mechanisms". A Biodiversity Steering Group was established to advise government and to assist with work on biodiversity. In 1995 Volumes 1 and 2 of *Biodiversity: The UK Steering Group Report* (UK Biodiversity Group 1995a; 1995b) were published. Volume 2 gave the Short, Middle and Long list of species being considered by the plan (this has since been amended) and included the Action Plans for three moths; the Speckled Footman *Coscinia cribraria*, Netted Carpet *Eustroma reticulatum* (D.& S.) and the Bright Wave *Idaea ochrata*. Further Action Plans were published in UK Biodiversity Group (1999a; 1999b). The preparation of all these documents drew heavily on the information collected by the National Moth Conservation Project.

There are a number of criteria, not all appropriate to moths, by which a species can qualify to be treated under the Biodiversity Action Plan (BAP). Although not comprehensive, the following criteria provide an indication of how the species were selected (after Anon 1995a).

- Threatened endemic and other globally threatened species;
- Species where the UK has more than 25% of the world or appropriate biogeographical population;
- Species where numbers or range have declined by more than 25% in the last 25 years;
- In some instances where the species is found in fewer than 15 ten km squares in the UK;
- Species which are listed in the EU Birds or Habitats Directives, the Bern, Bonn or CITES Conventions, or under the Wildlife and Countryside Act 1981 and the Nature Conservation and Amenity Lands (Northern Ireland) Order 1985.

A summary of the *Convention on Biological Diversity* and how BC is working with a variety of partners within the framework of the convention is given by Bourn & Warren (1997).

The species in Table 1 are those covered by the BAP. In this, species are covered by either a Priority Species Action Plan or a Species Statement. The Species Action Plans detail current status, current factors causing loss or decline, current action, objectives and targets and a range of proposed actions. The Species Statements are similar but under proposed action typically recommend monitoring only. For the purposes of the Action for Threatened Moths Project, the Species Action Plans and Statements are both treated equally. BC has agreed to be the Lead Partner for the projects on all but one of the priority moths and butterflies, sometimes in association with a statutory agency (e.g. EN) or an NGO (e.g. the National Trust). It should be noted that several species covered by Schedule 5 of the Wildlife & Countryside Act are not included in this list. Work is expected to continue on these species under the Species Recovery Programme funded by EN or as projects of the Countryside Council for Wales (CCW) or Scottish Natural Heritage (SNH).

Prior to the publication of the majority of these Action Plans, BC started to produce a series of Regional Action Plans to identify regional priorities and draw together local information on priority butterflies and moths. Those already produced include Northern Ireland, Wales, West Midlands and North East England. These all include priorities for moth conservation in the regions, including many species that do not have a national Species Action Plan, and in many cases include details of ecology, distribution and actions necessary for their conservation. Implementing these plans is a major challenge for the Society which will be aided by the Action for Threatened Moths Project.

The work undertaken within the Action for Threatened Moths Project is guided by a Steering Committee, currently made up with representatives of BC, the country agencies (i.e. EN, CCW, SNH and the JNCC) along with moth specialists. The main

rationale behind the Project is to provide a co-ordinated approach to the conservation of the BAP moths and to increase the involvement of volunteers and other organisations in priority moth work. Initial work has included contacting all County Moth Recorders, county moth groups and BC Branch Moth Officers to inform them of the project. Some individuals have been contacted in order to encourage participation in preliminary survey work and new sites have already been discovered for several priority species.

The Future

The project aims to ensure that annual monitoring will be undertaken at key sites for most, if not all, of the BAP species. This may take the form of modified transects after Pollard (1977) and Birkinshaw & Thomas (1999), thorough light trapping or by larval surveys. This monitoring, however, will depend primarily on volunteer effort and future funding for specific work. Further surveys will also take place aimed at understanding the distribution of individual species and identifying priorities for further effort. In some cases extensive autecological research may be needed and substantial additional funds will be required. Fund-raising is thus a vital part of our role in conjunction with specialist staff within BC.

Practical conservation measures are expected to be implemented for many of the BAP species, though in some cases our understanding of an individual species' ecology will need to improve before any measures can be put in place. Part of the process will be to ensure that the local teams of the conservation agencies and land owners are aware of the presence of BAP species.

As is inherent in the BAP process, review of the current list of species will be ongoing. If it becomes obvious that other species have been overlooked and are in need of conservation effort, particularly if they meet the aforementioned criteria, an Action Plan will be drafted and effort made for it to be implemented. With the increase in interest and the publication of a number of key works, such as *The Moths and Butterflies of Great Britain and Ireland* series, the knowledge of the so-called micro-lepidoptera is such that conservation of some may benefit from the formulation and implementation of Action Plans. With an active scheme such as the Pyralid & Plume Recording Scheme run by Tony Davis and the existence of a national review (Parsons 1993), it is comparatively straightforward to identify several species of pyralid moth that are candidates for this approach. It may not be quite so straightforward to identify other candidate species, but if other species reviews are undertaken this task should get easier. In the meantime certain species suggest themselves through habitat concerns, e.g. *Coleophora vibicella* (Hb.) on dyer's greenweed *Genista tinctoria* and *C. ochrea* (Haw.) on common rock-rose *Helianthemum nummularium* growing in exposed situations.

The Council of BC has recently revised the Society's Reserve Acquisition Strategy. Potential reserves will have to meet various criteria, including safeguarding the wildlife interest (for example, land becoming available and threatened through a change in management), education opportunities and location. As opportunities arise, reserves may be established and purchased primarily for their moth interest.

Table 1: Species covered by the Biodiversity Action Plan.

Key: BC = Butterfly Conservation; EN = English Nature; NT = National Trust; RSPB = Royal Society for the Protection of Birds; SNH = Scottish Natural Heritage; † = Wildlife and Countryside Act species.

Species	English Name	Priority Species Action Plan	Species Statement	Lead Partner
†*Ascometia caliginosa*	Reddish Buff	+		BC
Aspitates gilvaria	Straw Belle	+		BC
Athetis pallustris	Marsh Moth	+		BC
†*Bembecia chrysidiformis*	Fiery Clearwing	+		BC/EN
Calophasia lunula	Toadflax Brocade		+	BC
Catocala promissa	Light Crimson Underwing	+		BC
Catocala sponsa	Dark Crimson Underwing	+		BC
Coleophora tricolor	Basil Thyme Case-bearer	+		BC
Coscinia cribraria	Speckled Footman	+		BC
Cosmia diffinis	White-spotted Pinion	+		BC
Cyclophora pendularia	Dingy Mocha	+		BC
Dicycla oo	Heart Moth	+		BC
Epione vespertaria (= *paralellaria*)	Dark Bordered Beauty	+		BC/RSPB
Eustroma reticulatum	Netted Carpet	+		BC/NT
Hadena albimacula	White Spot		+	BC
Heliophobus reticulata marginosa	Bordered Gothic	+		BC
Hemaris tityus	Narrow-bordered Bee Hawk-moth	+		BC
Hydrelia sylvata	Waved Carpet	+		BC
Hydraecia osseola hucherardi	Marsh Mallow		+	BC
Hypena rostralis	Buttoned Snout	+		BC
Idaea dilutaria	Silky Wave	+		BC
Idaea ochrata	Bright Wave	+		BC
Jodia croceago	Orange Upperwing	+		BC
Lycia zonaria britannica	Belted Beauty		+	BC
Lygephila craccae	Scarce Blackneck		+	BC
Macaria carbonaria	Netted Mountain Moth	+		BC
Minoa murinata	Drab Looper		+	BC
Moma alpium	Scarce Mervielle du Jour		+	BC
Mythimna turca	Double Line	+		BC
Noctua orbona	Lunar Yellow Underwing	+		BC
Oria musculosa	Brighton Wainscot	+		BC
Paracolax tristalis (= *derivalis*)	Clay Fan-foot		+	BC
Paradiarisa sobrina	Cousin German		+	BC
†*Pareulype berberata*	Barberry Carpet	+		BC
Pechipogo strigilata	Common Fan-foot	+		BC
Phyllodesma ilicifolia	Small Lappet		+	BC
Polia bombycina	Pale Shining Brown	+		BC
Polymixis xanthomista	Black-banded		+	BC
Rheumaptera hastata	Argent & Sable	+		BC
Schrankia taenialis	White-line Snout		+	BC
Scotopteryx bipunctaria	Chalk Carpet	+		BC
Shargacucullia lychnitis	Striped Lychnis	+		BC
Siona lineata	Black-viened Moth	+		BC
†*Thetidia smaragdaria maritima*	Essex Emerald		+	BC
Trichopteryx polycommata	Barred Tooth-striped		+	BC
Trisateles emortualis	Olive Crescent		+	BC
Tyta luctuosa	Four-spotted	+		BC
Xestia alpicola alpina	Northern Dart		+	BC
Xestia ashworthii	Ashworth's Rustic		+	BC
Xestia rhomboidea	Square-spotted Clay	+		BC
Xylena exsoleta	Sword Grass	+		BC
Zygaena loti scotica	Slender Scotch Burnet	+		BC
†*Zygaena viciae argyllensis*	New Forest Burnet	+		SNH

It is expected that increasing use will be made of computer technology, but this will not exclude any individuals from contributing to any aspect of the project. For example, we have been trialing a weekly newsletter sent out via e-mail to surveyors aimed particularly at increasing the recording of the BAP species. Since it is anticipated that there will be an increased use of e-mail for correspondence, our e-mail addresses are given above.

How you can help

Various surveys and monitoring projects are planned and we need volunteers to undertake aspects of these. In the future there may be also the opportunity to become involved with some more intensive autecological work. In the meantime, recording under-worked areas can result in unexpected finds, which can add considerably to our knowledge of individual species. Please ensure that all records are forwarded to the County Moth Recorder, from whom all relevant records should be forwarded to us for future incorporation into the National Recording Scheme for the Rarer British Macro-moths. We hope that surveys for BAP species can be organised and promoted at a local level, for example by the BC Branch Moth Officer or the County Moth Recorder. Obviously, the more people that participate in these surveys then the more comprehensive the results.

It is hoped that this process will also bring Societies such as BC and the British Entomological & Natural History Society and the local BC Branches and the various moth or invertebrate groups into much closer contact and, perhaps, co-operation with individual projects. This will undoubtedly have benefits for all concerned and for moth conservation.

If you have any comments on any aspect of this article or the project we would be pleased to hear from you.

Acknowledgements

We would like to take the opportunity to thank Dr Martin Warren, Dr Nigel Bourn, David Bridges and Roger Smith for useful comments on earlier drafts of the text.

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Hazards of butterfly collecting – Anybody there? – Botswana 1991

The Kalahari really is a most amazing place. It is usually referred to as the Kalahari Desert, but that is technically incorrect. Except for the extreme south-west it gets much too much rainfall to qualify for desert and it is mostly quite dense dry savannah country. The reason that it is known as a desert is that there is hardly any surface water, even during the rainy season. This is due to the fact that the Kalahari is the surface of the largest pile of sand anywhere in the world – up to 700 metres deep.

The only people living here used to be the San peoples, somewhat demeaningly known as bushmen. Their fieldcraft allowed them to eke out sufficient water from tubers and melons, as well as their prey animals, which get their own moisture from the morning dew. One of the most surprising sights in the Kalahari is that of the few resident lions cracking open wild melons (closely related to our watermelons) in order to get at their moisture.

This kind of place is obviously not butterfly country *par excellence*, but those that are present are of great ecological interest, forming a transition between the usual savannah fauna and that of the South African Karoo. An interesting example is the common Citrus Butterfly *Papilio demodocus* Esper.

The Citrus Butterfly is interesting since it is an essentially forest butterfly which pushes out to the very limits if its ecological capacity. The fascinating thing is that it does that in two radically different ways. Its normal host plants are wide-leafed Rutaceae; cultivated *Citrus* – not indigenous to Africa – is now its most frequent host plant, which means it can now live well outside of the forest belt that was once its natural home. *Citrus* gets planted right out on the edge of the desert, be it in Burkina Faso, Niger, Botswana, or Arabia The butterfly opportunistically establishes itself far into what was previously an impossible habitat. In such areas, with *Citrus* as host plant, the larva is a dark green with some brown adornments, as it is all over the rainforest zone.

But in Arabia, and in the extreme southwest of Africa, the Kalahari and Namaqualand, *P. demodocus* has established itself in a very different, and less opportunistic, manner. It has managed to adapt to more unusual sub-desert host

plants, with small leaves. In Arabia it is mainly *Haplophyllym* (Rutaceae), in the southern Kalahari/Namib it is *Deverra* (Umbelliferae). Both have small leaves, and in fact the larva mainly feeds on the cortex of the plant stems. It has a completely different, variegated pattern that renders it well camouflaged on these plants.

Looking at the two different larva, it is difficult to believe they belong to the same species. But I have been unable to find any differences between the adult butterflies. It seems that the patterns have developed as differential camouflage on their very different host plants. I did publish a small paper in South Africa suggesting that a closer study of this might be a good topic for a MSc (or even PhD), but it seems there have been no takers.

I had been two weeks away from home, and for six days I had seen no other human being (how many human beings did you see during the past six days?). I headed back towards Gaborone. Suddenly, as I crossed the crest of a small hill, two gleaming Toyota Land-Cruisers came into view. I wound my way down in my rather less up-market Toyota Hi-Lux: "Hi ..... how are you doing ..... want a cold beer?" said the man, with a typical South African accent. THAT went without saying, and I clambered into the Land-Cruiser, equipped with fridge, sleeping quarters, and air-conditioning. The two men were geologists doing a transect survey for the de Beers Mining Company; the other Land-Cruiser was full of all sorts of sophisticated electronic equipment and bristling with so many antennae as to make even the best-equipped member of the Coleoptera deeply jealous.

We chatted for a while. This was not a place where you usually meet other people. "You wanna talk to your wife?", one of them asked, as he uncorked another round of beer. I had told them I lived in Gabs (as we old Africa hands call Gaborone. "No, that won't be possible, she's in London", I said. "No problem!". He fiddled with the antennae, directing them at the most suitable satellite, and pretty soon I was dialing our London number, not without a little excitement. The usual ringing tone of London was soon there.

I waited with bated breath, only to hear my own voice: "Neither Nancy Fee nor Torben Larsen are available at the moment; you may send a fax or leave a message after the beep". I freely admit this was a letdown. In fact, it was so much of a letdown that I managed to leave only a somewhat garbled message on the ansaphone! Shame – as we say in southern Africa.– Torben B. Larsen, 5 Wilson Compound, 2811 Park Avenue, Pasay City, Metro-Manila, The Philippines.

Hill-topping by Red Admirals *Vanessa atalanta* L. (Lep.: Nymphalidae)

On 1 August 1999 we witnessed what to our mind was clearly "hill-topping" by two Red Admirals *Vanessa atalanta* L. on the north coast of Anglesey, west of Bull Bay, at grid reference SH 413944. The time was approximately 4 pm and the weather was becoming slightly hazy after a warm, sunny day with little wind, which broke into thunderstorms in the early evening.

The general habitat comprised undulating coastal grassland 40 to 50 metres in altitude; the *V. atalanta* were on the highest point, the estimated altitude of which was 82 metres. The whole area was heavily grazed by sheep and apart from frequent gorse bushes, contained little vegetation besides "improved" grass. We watched the *V. atalanta* for approximately ten minutes; they made regular short flights across the top of the hillock, but were not observed to interact with each other or attempt to leave. They were the only *V. atalanta* observed during a full day's recording in this and other parts of Anglesey. There was no obvious breeding habitat for the species in the immediate vicinity.

Other butterflies in the immediate vicinity were one Wall *Lasiommata megera* L. and one Grayling *Hipparchia semele* L., both males, both of which were at a slightly lower level than the *V. atalanta* and which appeared to be resting rather than "hill-topping", and several Gatekeepers *Pyronia tithonus* L., the dominant species in the area that day and the only one which ranged throughout the grassland.

Hill-topping by *V. atalanta* has been remarked on by American authors including O. Shields (1967, Hilltoping, *J. Res. Lep.* **6**(2): 69-178), who mentions that the behaviour was recorded in Ireland as long ago as 1922 by C.B. Moffat (Some habits of the Red Admiral and Painted Lady butterflies, *Irish Nat.* **31**: 61-65), and J. Scott (1968, Hilltopping as a mating mechanism to aid the survival of low density species, *J. Res. Lep.* **7**(4): 191-204).– PETER B. HARDY, 10 Dudley Road, Sale, Cheshire M33 7BB and PHILIP M. KINDER, 11 Westover, Bredbury Green, Stockport, Cheshire SK6 3ER.

A memorable night for Orange Moths *Angeronia prunaria* (L.) (Lep.: Geometridae)

In Essex, the Orange Moth *Angeronia prunaria,* is considered a very local species of medium density, but the summer of 1999 saw an unusual increase in records of this attractive species from members of Essex Moth Group operating mercury vapour lamps and moth traps. Some recorders reported *prunaria* for the first time.

On the night of 7 July, with three other Essex Moth Group colleagues, Ian Rose, David Warner and Paul Harris, I carried out a moth survey at Hoe Wood, Aldham, near Colchester for the Woodland Trust. We used four m.v. lamps and one Skinner-type trap in the wood's rides on a sultry night when the temperature at midnight was still 19°C. The night was notable for the profusion of *prunaria.* We estimate that the total seen at or near the lights was probably near to a hundred. As many as twenty moths of both sexes were at each lamp station, or resting on nearby vegetation, at 11pm with an equal number on the sheets and in the trap.

Some exceptional colour forms of both sexes were seen. These included five extreme examples of the male form *corylaria* Thunb., and two deeply-coloured females of the *corylaria* form. The moth species total for the night was 64.

Hoe Wood is an ancient mixed deciduous wood which covers 21.5 acres. Birch is one of the dominant species and this is probably the main larval foodplant of *prunaria* at this particular site.– JOE FIRMIN, 55 Chapel Road, West Bergholt, Colchester, Essex CO6 3HZ.

Perizoma affinitata (Steph.) (Lep.: Geometridae) in north-west Kent

A surprising visitor to my garden m.v. light at Dartford on 18.v.1999, was *Perizoma affinitata*. Its larval foodplant is red campion *Silene dioica* and its habitat is open woodland where *Silene dioica* grows, but this plant is a rarity in north-west Kent; it is shown as absent from this tetrad of the National Grid by Burton (*Flora of the London Area,* 1983) and by Philp (*Atlas of the Kent Flora,* 1982). Chalmers-Hunt (*Butterflies and Moths of Kent, Ent. Rec.* **84** (Supplement, p.81)), quotes for north-west Kent only one definite record – West Wickham, 14.v.1860.

Unless the moth has an alternative larval foodplant, it is unlikely that a breeding population could exist in this area or the adjoining part of Surrey which Collins (*Larger Moths of Surrey,* 1997) considers as outside the part of that county where the insect is present. If this Dartford specimen is a wanderer from elsewhere, it will probably have come from the Kentish Weald to the south, or from the adjoining part of Surrey to the south-west, from whence in recent years several colonising species have emanated, including *Chloroclysta siterata* Hufn, and *Aporophyla nigra* Haw. If the specimen were of local origin I would suspect it was from some other plant than *Silene dioica*.– B.K. West, 36 Briar Road, Dartford, Kent DA5 2HN.

The snakefly *Xanthostigma xanthostigma* (Schummel, 1832) (Raphidioptera: Raphidiidae) reared

The British snakefly fauna is rather restricted, comprising as it does a mere four species in a single family. The adults are immediately recognizable by virtue of their greatly elongated pronota, but are relatively infrequently seen as they appear to be predominantly arboreal and are only rarely recorded at light traps – a single female of *Phaeostigma notata* (Fabricius, 1781) was taken this way at Ashtead Common, Surrey on 2 July 1999. The larvae live beneath the bark of standing and fallen timber where they are predatory on other insects, but, apart from apparent preferences for deciduous or coniferous trees, little is known of their precise requirements.

On 29 March 1999 several bags of spruce cones were collected from Thelsford Farm, Wellesbourne (VC 38 Warwickshire, grid reference SP 276577) in the hope of rearing some of the microlepidoptera that feed in such a situation. No moths were reared, but a single *X. xanthostigma* was. The plantation comprised almost entirely even aged (20-25 feet tall) Norway Spruce *Picea abies* with a single Scots Pine *Pinus sylvestris*, and recently planted specimens of other *Picea* spp. adjacent to it. Fraser (1959, *RES Handbooks* Mecoptera, Megaloptera and Neuroptera) considered this species to be confined to willows *Salix* spp., which were absent from the site, and Plant (1994. *Provisional atlas of lacewings and allied insects of Britain and Ireland*) states that many recent records, including a larva, relate to oaks *Quercus* spp. Again these trees were absent from the immediate vicinity.

I thank Andrew Gardner and David Brown for arranging access to the site and providing additional details of the vegetation.– Graham A. Collins, 15 Hurst Way, South Croydon, Surrey, CR2 7AP.

FURTHER HOST RECORDS OF SOME WEST PALAEARCTIC TACHINIDAE (DIPTERA)

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SINCE OUR FIRST list of rearings of tachinids from hosts from various sources was published (Ford & Shaw, 1991) enough further material has been received from correspondents and reared by ourselves to merit an additional list. The notes which introduced the previous list are relevant to the present one, but are repeated here (with minor changes) for the sake of convenience. The nomenclature and arrangement of the British species of Tachinidae are according to Chandler (1998); non-British species follow the same arrangement but nomenclature is according to Herting & Dely-Draskovits (1993). The lepidopterous hosts are listed according to Kloet & Hincks (1972). Unless otherwise indicated:

(i) records are British,

(ii) hosts are Lepidoptera and have been determined by the collector whose initials are given in parenthesis at the end of the entry,

(iii) British tachinids, with a few exceptions, and some of the continental ones were identified by T.H. Ford but most of the non-British specimens were submitted for determination or confirmation to Dr B. Herting and Dr H-P. Tschorsnig at the Staatliches Museum für Naturkunde at Stuttgart. For each tachinid species included here the following data are given, if available: the name of the host; the number and sex of the parasitoids which is presumed to be also the number of individual hosts killed unless the word "brood" is used; the stage at which the host was killed, i.e. larva(ae), prepupa(ae) or pupa(ae); up to three dates, indicating (a) date of collection of the material; (b) emergence of the parasitoid larva from the host (preceded by the abbreviation "p.l.e." where it is necessary to indicate the event to which the date relates); (c) eclosion of the the parasitoid imago (preceded by the abbreviation "em." where necessary) [unless stated otherwise, only two dates = (a) and (c), and only one date = (a)]; the locality; the initials of the collector, or collector/identifier if not the same person. Notes on host associations and other comments are given only where they extend or qualify information available from Ford & Shaw (1991) or Belshaw (1993), in which case they are derived chiefly from Herting (1960) and the unpublished database compiled and maintained by Dr Herting and Dr Tschorsnig. Reference to new host records in the notes means new to the above database since it was first received by us in 1992 and is subordinate to any records from other sources that may have been received by Dr Herting and Dr Tschorsnig since that date.

(iv) The specimens are, or are destined to be, deposited in the National Museums of Scotland.

DEXIINAE

Voriini

Athrycia trepida (Meigen). *Orthosia gracilis* (Denis & Schiffermüller) on *Myrica*: brood of 1 male 1 female, ex larva, 4.vii.92, vii.92, 7-25.v.93, and 2 females, ex larvae, 4.vii.92, vii.92, 25.v-24.vi.93, Resipole, Argyll (MRS); *Orthosia ?gothica* (L.) on *Myrica/Calluna*: brood of 1 male 1 female, ex larva, 4.vii.92, 10.vii.92, 12.v.93, Kentra, Argyll (MRS).

Blepharomyia pagana (Meigen). *Lycia hirtaria* (Clerck): 1 female, ex larva, vi.90, vii.90, FRANCE [Le Muy, Var] (THF); *Erannis defoliaria* (Clerck): 1 female, ex larva, v.97, iii.98, Sheffield, South Yorkshire (THF); *Theria primaria* (Haworth) (= *rupicapraria* sensu auctt.) on *Prunus*: 2 examples, ex larvae, 4.vi.94, vi.94, 13.iv.95, and 1 female, ex larva, 21.v.94, vi.94, 21.iv.95, Gait Barrows NNR, Lancashire (MRS).

Blepharomyia piliceps (Zetterstedt). *Eulithis populata* (L.): 5 examples, ex pupae, 22.vi.92, vii.92, 18-19.iv.93, Hathersage, Derbyshire (THF); 2 males, vii.92, viii.92, 24-26.iv.93, Fox House, Sheffield, South Yorkshire (THF).

Campylocheta inepta (Meigen). Indet. geometrid on *Myrica*: 1 male, ex larva, 4.vii.92, 11.vii.92, 1993, Kentra Moss, Argyll (MRS); *Lycia lapponaria* (Boisduval): 1 female, ex larva, 4.vii.92, vii.92, 14.viii.93, Resipole, Argyll (MRS); *Ematurga atomaria* (L.) on *Myrica*: 2 males, 6 females, ex larvae, 4.vii.92, 11-25.vii.92, 1993, Kentra, Argyll (MRS); 1 male, 1 female, ex larvae, 4.vii.92, 22.vii-1.viii.92, 4-12.v.93, Resipole, Argyll (MRS); 1 male, 2 females, ex larvae, 22.vii.92, 25.vii-5.viii.92, 4-12.v.93, Meathop Moss NR, Cumbria (MRS); 1 male, ex larva, 21.vii.92, viii.92, 18.vi.93, Fish House Moss NNR, Cumbria (MRS); 3 females, ex larvae, 20.viii.93, 28.viii.93, 23-26.v.94, Beeley Moor, Derbyshire (THF); *Cabera pusaria* (L.): 1 female, ex larva, 16.ix.92, 22.ix.92, 18.vi.93, Catcliffe, South Yorkshire (THF); *Anarta myrtilli* (L.): 1 male, ex larva, 5.vii.92, 21.vii.92, 3.v.93, Glenfinnan, Argyll (MRS); *Pseudoips prasinana* (L.): 1 male, ex larva, 11.vi.96, 1.vii.96, 31.v.97, FRANCE [Aubérive, Côte d'Or] (MRS). *L. lapponaria* is a new host record.

Cyrtophleba ruricola (Meigen). *Hecatera dysodea* (Denis & Schiffermüller) on *Lactuca*: brood of 4 (3 males emerged), ex pupa, 20.vii.93, viii.93, 2-6.v.94, FRANCE [St. Jean du Gard, Gard] (MRS); ? *Tathorhynchus exsiccata* (Lederer) on low legumes: brood of 3 females, ex larva, 17.vii.91, p.l.e. 27.vii.91, FRANCE [Haut Verdon, Alpes-de-Haute-Provence] (MRS). *H. dysodea* and, if the identification is correct, *T. exsiccata* are new host records.

Ramonda prunaria (Rondani). *Mythimna* sp.: 1 female, ex larva, 19.vii.91, 24.vii.91, FRANCE [Briançon, Hautes-Alpes] (MRS).

Ramonda spathulata (Fallén). *Xestia* sp.: 4 examples, ex larvae, 15.iii-2.iv.93, 10.iv-2.v.93, Close House Slopes, Durham (HA); *Apamea crenata* (Hufnagel): 2 examples, ex larvae, 2.iv.93, 10.iv.93, Close House Slopes, Durham (HA).

Thelaira nigrina (Fallén) (*nigripes* (Fabricius) preocc.). *Arctia caja* (L.): 2 males, 3 females, 1985, Portslade, Sussex (ARC); *Spilosoma luteum* (Hufnagel): 1 male, 1 female, ex larvae, 5.ix.92, 10.ix.92, 22.iv and 11.v.93, Bissoe, Cornwall (THF); *Spilosoma lubricipeda* (L.): 15 examples, solitary and in broods of 2 (2 males emerged), ex larvae, viii.96, viii.96, vii.97, Ardgour, Argyll (THF).

Voria ruralis (Fallén). *Autographa gamma* (L.): brood of 8, ex larva, 10.ix.94, 29.ix.94, FRANCE [Champ du Boult, Calvados] (THF); 1 female and a brood of 1 male 1 female, ex larvae, 19.vii.96, 8-10.viii.96, FRANCE [Darbres, Ardèche] (MRS).

Wagneria cunctans (Meigen). *Aporophyla lutulenta* (Denis & Schiffermüller): brood of 4 females, ex larva, 9.iii.97, 18-24.ii.98, SPAIN [Zaragoza] (GEK). This is a new host record, the only other rearing being from *Agrochola lychnidis* (Denis & Schiffermüller).

EXORISTINAE

Blondeliini

Blondelia nigripes (Fallén). *Thaumetopoea pinivora* (Treitschke): 1 male, 1 female, ex pupae, 31.vii.93, vi.94, also 2 females, viii.93, 20.viii.95 (!), SWEDEN [Öland] (CE); *Lacanobia suasa* (Denis & Schiffermüller): 1 female, ex larva, 2.ix.93, p.l.e. 27.ix.93 (died unemerged), Beeley Moor, Derbyshire (THF); *Dryobotodes eremita* (Fabricius) on *Quercus mas*: 1 male,

1 female, ex prepupae, 15.v.96, 1.vi.96, 16.vi.96, FRANCE [Bernac, Lot-et-Garonne] (MRS). The record from *L. suasa* appears to be the only British rearing record of *B. nigripes* from any host, but it has been recorded from the same host from Magdeburg (Ziegler, 1983).

Compsilura concinnata (Meigen). *Zygaena ?viciae* (Denis & Schiffermüller): 1 female, ex larva, 7-10.vii.98, 20.vii-8.viii.98, SWEDEN [Bäckebo, Småland] (CE); *Zygaena fausta* (L.): several (solitary), ex prepupae, em. 20.iv-13.v.89, PORTUGAL [Baixa Alentejo] (WGT); *Pieris brassicae* (L.): 3 males, 1 female from more than one host, ex larvae, end viii.98, Peacehaven, East Sussex (CP); *Inachis io* (L.): 2 males, 1 female, ex larvae, Southampton, Hampshire (JG); *Polygonia c-album* (L.) on *Humulus*: 1 male, ex pupa, 31.viii.94, 12.x.94, Southampton, Hampshire (JG); *Araschnia levana* (L.): 1 male, 1 female, ex larvae, em. 7.x.94, NETHERLANDS [Oss] (MCW) (Specimens returned to rearer); *Malacosoma neustria* (L.): 2 males, 4 females, ex larvae, 1997, Portslade, Sussex (ARC); *Cerura vinula* (L.) on *Salix*: brood of 2 males 4 females, ex larva, 20.vii.93, 30.vii.93, 19.viii.93, FRANCE [St. Jean du Gard, Gard] (MRS); *Euproctis chrysorrhoea* (L.): 2 males, 3 females, ex larvae, 10.vi.85, vii.85 and brood of 1 male 2 females, ex larva, 10.vi.85 vii.85, Earley, Berkshire (BTP); 2 females, ex larvae, vii.92, summer 1993, Portslade, Sussex (ARC); *Euproctis similis* (Fuessly): 1 female, ex larva, em. vii.93 and 1 male, ex larva, em. vii.93 (also produced 22 *Diolcogaster connexus* (Nees) (Hym.: Braconidae)), Hatfield Chase, Yorkshire (MCW) (Specimens returned to rearer); *Callimorpha dominula* (L.): 2 males, ex larvae, 27.vi.93, 2.vii.93, Cothill, Oxfordshire (DFO); *Cucullia lychnitis* Rambur: 4 males, 1 female, from 3 host larvae, Hampshire (DY); *Acronicta psi* (L.): 1 female, ex pupa, 1992, 21.v.93, 10.vi.93, Bisley, Surrey (GJM); *Colocasia coryli* (L.): 1 female, ex prepupa., 17.viii.84, 1.ix.84, Clumber Park, Nottinghamshire (BS). *Z. fausta, C. dominula and C. lychnitis* are new host records.

Ligeria angusticornis (Loew). *Emmelina monodactyla* (L.): 1 female (single specimen reared from fifty host larvae), ex larva, 29.vii.92, 10.viii.92, 29.viii-12.ix.92, Catcliffe, South Yorkshire (THF); *Phragmatobia fuliginosa* (L.): 1 female, 6.vi.94, 25.vi.94, 1994, Bishopton, Stratford on Avon, Warwickshire (JMP). Previously recorded from Pterophoridae whose larvae overwinter (unlike those of *E. monodactyla*). *E. monodactyla* is a new host record; *P. fuliginosa* is considered an unlikely host.

Medina collaris (Fallén). *Lochmaea suturalis* (Thomson) (Col.: Chrysomelidae): 1 male, adult, vii.92, viii.92, 29.ix.92, Matlock Moor, Derbyshire (GJM/FH); 1 male, adult, vii.92, v.93, Beeley Moor, Derbyshire (THF).

Medina separata (Meigen). *Calvia quattuordecimguttata* (L.) (Col.: Coccinellidae): 1 female, adult, 11.iv.94, 12.v.94, 25.v.94, Parklands Walk, near Miltons, London (DH); *Adalia decempunctata* (L.) (Col.: Coccinellidae): 1 female, adult, 17.vii.95, 18.vii.95, ca 8.viii.95, Old Kingsbury Colliery, Warwickshire (BM). Hawkins (1998) has recently recorded *M. separata* from *C. quattuordecimguttata*, at that time a new host record.

Vibrissina turrita (Meigen). *Arge shawi* Liston (Hym.: Argidae) on *Rosa*: several (solitary), ex prepupae, 31.v.89, pupation in host cocoon, 1989, FRANCE [8km N. of Frejus, Var] (THF). Recorded from several *Arge* spp. and from Tenthredinidae, but this is the first record from *A. shawi*.

Eryciini

Alsomyia ?olfaciens (Pandelle). *Zygaena carniolica* (Scopoli): 1 male, ex prepupa, em. vii.1991, TURKEY [Ankara] (WGT). The specimen differs slightly from typical *olfaciens*: third antennal segment narrower and shorter, scutellum reddish apically (Tschorsnig, pers. comm.).

Aplomya confinis (Fallén). *Colias* sp.: 1 male, ex larva, 13.vii.97, 14.vii.97, 22.vii.97, FRANCE [Barjols, Var] (MRS); *Aricia* sp. on *Helianthemum*: 1 male, ex larva, 10.vii.97, 14.vii.97, 23.vii.97, FRANCE [St. Maximin, Var] (MRS). Commonly reared from Lycaenidae, but this is the first record from *Colias* sp. The specimen has a very short body length suggesting that this is not a suitable host (Tschorsnig, pers. comm.).

Bactromyia aurulenta (Meigen). *Drepana cultraria* (Fabricius) on *Ulmus*: 1 male, ex larva, 24.ix.94, vi.95, High Elms, Kent (IDF); *Abraxas pantaria* (L.): 1 female, ex pupa, 22.x.97, 24.x.97, 12.xii.97, SPAIN [Garrapinolas, Zaragoza] (GEK); *Pseudoips prasinana* (L.) on

Fagus: brood of 4 (1 male, 1 female emerged), ex larva, 24.vii.96, 18.viii.96, 1.ix.96, FRANCE [Fayl-Billot, Haute-Marne] (MRS); *Scoliopteryx libatrix* (L.) on *Salix caprea*: brood of 5 (3 males, 1 female emerged), ex larva, 5.viii.90, 21.viii.90, FRANCE [Limouzine, Vienne] (MRS); brood of 2 males 3 females, ex pupa, 24.viii.93, 1.ix.93, 11.ix.93, Silwood Park, Berkshire (JLY).

Buquetia musca Robineau-Desvoidy. *Papilio machaon* L: brood of 6 (4 males, 1 female emerged), vii.91,viii.91, FRANCE [Briançon, Hautes-Alpes] (MRS); brood of 7 (4 males, 1 female emerged), ex larva, 14.vii.94, 19.vii.94, 3.viii.94, ITALY [Amalfi] (PS). There are eleven previous records from *P. machaon*.

Cadurciella tritaeniata (Rondani). *Callophrys rubi* (L.) on *Erica tetralix*: 2 females, ex pupae, 4.vii.92, 1-5.v.93, 16-18.vi.93, Resipole, Argyll (MRS); on *Ulex gallii*: 1 female, ex pupa, 1.viii.93, 1994, Dorchester, Dorset (IC).

Carcelia bombylans Robineau-Desvoidy. *Spilosoma luteum* (Hufnagel): 2 examples and brood of 2, ex larvae, 20-30.vii.93, 30.vii-6.viii.93, (puparia all dead, 2 males dissected out and examined), FRANCE [St. Jean du Gard, Gard] (MRS).

Carcelia dubia (Brauer & Bergenstamm). Indet. lepidopteran: 1 male, ex larva, 10.vi.90, YUGOSLAVIA [Konecka] (PJCR).

Carcelia gnava (Meigen). *Malacosoma neustria* (L.): 7 males, ex larvae, vi.92 , and 2 males, ex larvae, 1997, Portslade, Sussex (ARC); 1 male, ex larva, 1971, Ham Street, Kent (DO'K/JMC-H); 1 male, ex ?prepupa, 18.vi.80, 1.vii.80, 16.vii.80, Sheffield Bottom, Berkshire (BTP); *Dasychira pudibunda* (L.): 1 male, ex prepupa, 4.ix.92, ix.92, Falmouth, Cornwall (THF).

Carcelia laxifrons Villeneuve. *Malacosoma alpicolum* (Staudinger): 1 female, ex prepupa, 19.vii.97, 20.v.98, FRANCE [Col du Galibier, Hautes-Alpes] (MRS). New host record. Most records are from more or less hairy caterpillars, especially Lasiocampidae and Lymantriidae.

Carcelia lucorum (Meigen). *Malacosoma neustria* (L.) on *Prunus*: 1 female, ex prepupa, 24.iv.86, 11.vii.86, 25.vii.86, Hurst, Berkshire (BTP); *Arctia caja* (L.): 2 broods of 3-4, ex prepupae, em. end xii.93 (reared indoors), Close House Slopes, Durham (HA); several broods (2 males, 3 females examined), ex prepupae, 1990, vi-vii.90, Wellingborough, Northamptonshire (JHP); brood of 3, ex prepupa, vi.92, Newcastleton, Roxburghshire (HMcH); brood of 3 males 3 females, ex prepupa, 9.v.87, 30.v.87, ca 6.vii.87, Tentsmuir, Fife (MRS); 1 male, ex larva, em. 4.vii.87, Southport, Lancashire (KCG); 3 males, 3 females, iv.48, 22-27.v.48, Crowcombe, Somerset (ECP-C); *Arctia villica* (L.): brood of 6 (2 females emerged), iv.86, 14.v.86, Dawlish Warren, Devon (HF/MH); *Diaphora mendica* (Clerck): brood of 7, ex prepupa, 1993, Portslade, Sussex (ARC); *Phragmatobia fuliginosa* (L.): 2 males, 1 female, ex prepupae, em. 27.iv.95, Turner Fold, Lancashire (SMP); brood of 4 (1 male emerged v.92), Sheffield, South Yorkshire (THF); brood of 3 females, ex prepupa, 11.iv.97, 13.iv.97, 4.v.97, Beeley Moor, Derbyshire (THF); 1 male, ex prepupa, 14.ii.97, 7.iii.97, Beeley Moor, Derbyshire (BS); *Callimorpha dominula* (L.): brood of 4 (3 females examined), 3-4.vii.93, Hinksey, Oxfordshire (DG); 13 examples from 3 hosts, ex prepupae, 27.vi.93, 2.vii.93, Cothill, Oxfordshire (DOF). *D. mendica* is a new host record.

Catagonia aberrans (Rondani). *Thyris fenestrella* (Scopoli) on *Clematis*: 3 males, 5 females, ex pupae, 15.vii.93, 16.viii-20.ix.93, and 6 males, 5 females, ex pupae, 15.vii.93, 7-29.vi.94, FRANCE [Bédoin, Vaucluse] (MRS). These are the first reliable host records for this species, the two previous records, from *Eucosma lugubrana* Treitschke and *Monophadnus spinolae* Klug (Hym.: Tenthredinidae), being regarded as doubtful (Tschorsnig, pers. comm.).

Chetina setigena (Rondani). *Polyommatus ?icarus* (Rottemburg) on *Melilotus*: 1 male., ex prepupa, 10-15.vii.91, p.l.e. ca 25.vii.91, FRANCE [Bédoin, Vaucluse] (MRS). There are only two previous rearing records (from *Ematurga atomaria* (L) and *Athroolopha chrysitaria* (Geyer)) and both are regarded as questionable (Tschorsnig, pers. comm.).

Drino vicina (Zetterstedt). *Proserpinus proserpina* (Pallas) on *Epilobium hirsutum*: brood of 1 male 1 female, 19.vii.96, 27.vii.96, 24.vi.97-vii.97, FRANCE [Darbres, Ardèche] (MRS). The male emerged on 24.vi.97 but did not expand its wings until 26.vi.97.

Erycia festinans (Meigen). *Melitaea cinxia* (L.): 2 females, ex pupae, 29.vii.90, vii.90, 10.ix.90, FRANCE [Lac du Castilgaillard, Lot-et-Garonne] (MRS); 1 male, 1 female, ex larvae, em. 12-13.v.96, GREECE [Evros, 25km north of Loutros] (PJCR).

Erycia furibunda (Zetterstedt). *Euphydryas desfontaini* (Godart): 1 male, ex pupa, 9.v.94, 4.vii.94, N. SPAIN (RJW); *Euphydryas aurinia* (Rottemburg): 1 female, ex pupa, collected as small larva, 11.viii.95, 2.v.96, 19.vi.96, ITALY [Mt. Subasio, Umbria] (MRS). *E. desfontaini* is a new host record. The pre-hibernation collection date of *E. aurinia* shows how this parasitoid's life cycle is organised.

Lydella grisescens Robineau-Desvoidy. *Luperina nickerlii* (Freyer): 1 female, ex larva, 16.vii.91, West Cornwall (JLG). New host record. The determination was confirmed by Dr. Tschorsnig.

Nilea hortulana (Meigen). *Acronicta psi* (L.): brood of 3, ex larva, 1.ix.92, 16.ix.92, 2-8.vii.93, Sheffield, South Yorkshire (THF); brood of 4 (1 male, 1 female emerged), ex larva, 1995, 1996, Portslade, Sussex (ARC); brood of 1 male 4 females, ex larva, 1997, North Staffordshire (LM); 1 example, ex larva, viii.62, 26.xi.62, West Wickham, Kent (JMC-H).

Phryxe caudata (Rondani). *Thaumetopoea pityocampa* (Denis & Schiffermüller): 3 males, 4 females, ex larvae, 10.i.95, 12.i.95, 15.ii.95, PORTUGAL [Faro, Algarve] (THF). There are numerous continental records from this host.

Phryxe erythrostoma (Hartig). *Hyloicus pinastri* (L.): brood of 12 (4 males, 7 females examined), ex pupa, viii.97, 2-5.vi.98, vii.98, Thetford Forest, Norfolk (GMH/RL). This is the first British record of this gregarious, specific parasitoid of *H. pinastri,* but the host larvae are seldom collected so there is no reason to suppose that it is a recent introduction. The determination was confirmed by Dr Tschorsnig.

Phryxe heraclei (Meigen). *Lasiocampa quercus* (L.): 1 male, ex larva, 6.ix.92, iii.93, v.93, Bissoe, Cornwall (THF); *Philudoria potatoria* (L.): 1 example, ex larva, em. vii.82, Par, Cornwall (JLG). The vast majority of records are from *P. potatoria.*

Phryxe magnicornis (Zetterstedt). *Zygaena filipendulae* (L.): 1 female, ex prepupa or pupa, em. 12.vii.96, Looe Island, Cornwall (WGT); 1 male, 2 females, ex larvae, 17.vi.97, Church Cove, Mullion, Cornwall (WGT); *Zygaena ?filipendulae*, brood of 1 male 2 females, ex prepupa, 20.vii.97, 23-26.vii.97, 4.viii.97, FRANCE [Col du Lautaret, Hautes-Alpes] (MRS); *Zygaena trifolii* (Esper): 5 males, 4 females, ex larvae or prepupae, em. viii.91, Common Moor NR, Newquay, Cornwall (WGT); 1 male, ex pupa, p.l.e. 30.vi.97, Bridestowe, Devon (WGT); *Zygaena lonicerae* (Scheven): 2 males, ex prepupae or pupae, 25.vii.96, viii.96, SWEDEN [Utö, Sodermanland] (CE); *Zygaena transalpina* (Esper): 1 male, ex larva, 18.v.96, 25.v.96, 11.vi.96, FRANCE [St. Alvère, Dordogne] (MRS); *Zygaena* sp.: 1 female, ex larva, em. 18.vii.91, Salisbury Plain, Wiltshire (SMP); 1 male, ex larva, 8.vii.93, 15.vii.93, Close House Slopes, Durham (HA); 1 female, cocoon, 17.vii.97, 26.vii.97, 4.viii.97, FRANCE [Col de Vars, Hautes-Alpes] (MRS); *Thymelicus lineola* (Ochsenheimer) on *Arrhenotherum*: 2 males, 2 females, ex larvae, 28.vi.97, vii.97, Caston, Norfolk (GMH); *Pieris rapae* (L.): 1 male, ex pupa, em. 12.vii.97, East Wittering, West Sussex (PJCR); *Quercusia quercus* (L.): 10 examples (1 male, 1 female emerged), ex larvae, vi.93, vi.93, Thompson Common, Norfolk (GMH); *Operophtera brumata* (L.) on *Myrica*: 5 males, 3 females, 8.vi.92, vii.92, viii.92, Loch Linnhe, Argyll (THF); *Ematurga atomaria* (L.) on *Myrica*: 1 male, 1 female, ex pupae, 4.vii.92, iv.93, Resipole, Argyll (MRS); 1 male, ex pupa, 22.vii.92, 1.v.93, Meathop Moss NR, Cumbria (MRS); *Chesias* sp. on *Sarothamnus*: 1 male, ex larva, 27.vii.93, 10.viii.93, 29.viii.93, FRANCE [Chambon, Puy-de-Dôme] (MRS); *Odezia atrata* (L.): 1 male, 2 females, ex larvae, 5.vi.97, 22-23.vi.97, vii.97, Coombsdale, Derbyshire (BS); *Lycia lapponaria* (Boisduval) on *Myrica*: brood of 3 (1 male, 1 female examined), vi.89, viii.89, Lochan Daimh (SMH); *Erannis defoliaria* (Clerck): brood of 2 males, ex larva, 29.v.93, 5.vi.93, 27.vi.93, and brood of 1 male 1 female, ex larva, 10.vi.93, 13.vi.93, 3.vii.93, Sheffield, South Yorkshire (THF); *Abrostola triplasia* (L.): brood of 3 females, ex larva, 20.vii.92, 8.viii.92, ix.92, Sheffield, South Yorkshire (THF). *Z. transalpina, O. atrata, L. lapponaria* and *A. triplasia* are new host records for this polyphagous parasitoid of exposed macrolepidoptera.

Phryxe nemea (Meigen). *Zygaena loti* (Denis & Schiffermüller): 1 male, ex larva, 18.vi.95, vi.95, 12.vii.95, Tiroran, Isle of Mull (DAB/RL); *Euchloe ausonia* (Hübner): 1 example, ex larva, 20.vii.97, viii.97, 19.viii.97, FRANCE [Col du Lautaret, 2000m, Hautes-Alpes] (MRS); *Quercusia quercus* (L.): 1 female, ex larva, 6.vi.98, Thetford, Norfolk (GN); *Strymonidia w-album* (Knoch): 1 female, ex larva, v.93, vi.93, Hockham, Norfolk (GMH); 4 examples,

ex pupae, 1997, Thetford, Norfolk (GN); *Aglais urticae* (L.): 1 female, ex pupa, 15.viii.97, 21.viii.97, 28.viii.97, Monk Sherborne, Hampshire (WG); *Pararge aegeria* (L.): 1 male, 1 female, ex larvae, iii.89, Worksop, Nottinghamshire (MCW); ? *Habrosyne pyritoides* (Hufnagel): brood of 1 male 1 female, ex prepupa, 4.ix.92, 25-26.ix.92, Church Gresley, Derbyshire (DB); indet. geometrid: 2 females, 3.vi.95, vi.95, FRANCE[St. Sever, Calvados] (THF); *Epirrita dilutata* (Denis & Schiffermüller): brood of 2 females, ex pupa, 29.v.93, 12.vi.93, 4.vii.93, Budby, Nottinghamshire (THF); *Operophtera brumata* (L.): 1 female, ex larva or prepupa, 22.v.93, 29.v.93, 20.vi.93, Sheffield, South Yorkshire (THF); *Agriopis leucophaearia* (Denis & Schiffermüller): 1 female, ex larva, 2.vi.93, 10.vi.93, Sheffield, South Yorkshire (THF); *Spilosoma lubricipeda* (L.), semi-captive: 1 female, ex larva, 1997, Portslade, West Sussex (ARC); *Melanchra persicariae* (L.) on *Pteridium*: 1 female, 4.ix.94, ca v.95, Beeley Moor, Derbyshire (THF); *Orthosia stabilis* (Denis & Schiffermüller): brood of 2 females, 1.vii.95, 8.vii.95, 21.vii.95, Loch Arkaig, Argyll (THF); *Phlogophora meticulosa* (L.): brood of 4 males 3 females, and brood of 5 males 3 females, ex larvae, 20.vii.92, ca 14.viii.92, ix.92, Moss Valley, Derbyshire (THF); brood of 10 (2 males, 1 female examined), ex larva, 2.ix.93, 10.x.93, Beeley Moor, Derbyshire (THF); plusiine noctuid; 1 example, ex pupa, ix.97, x.97, Tangmere, Sussex (PJCR). *Z. loti*, *E. ausonia* and *A. leucophaearia* are new host records for this highly polyphagous parasitoid of exposed lepidoptera.

Phryxe prima (Brauer & Bergenstamm). *Zygaena carniolica* (Scopoli): 3 males, 1 female, ex prepupae or pupae, em. vii.1991, TURKEY [Atatürk Orman, 1050m, Ankara] (WGT); *Zygaena cuvieri* Boisduval: 3 males, ex prepupae, em. vi.1989, TURKEY [Adana] (WGT); ? *Heterogynis* sp.: 1 male, ex larva, em. 4.vii.90, SPAIN [Madrid] (JG). *Z. cuvieri* is a new host record.

Phryxe unicolor (Villeneuve). *Abraxas pantaria* (L.) on *Fraxinus*: 1 female, ex pupa, x.96, 27.v.97, PORTUGAL [Santo Andre, Sines, Setubal] (CWP). Dr. Tschorsnig writes " *P. unicolor* is an interesting record. This rare species was known before only from southern France; its hosts were unknown. However, a few months ago I received material for identification from Spain (prov. Barcelona) which was also reared from *A. pantaria* during the year 1997."

Phryxe vulgaris (Fallén). *Zygaena fausta* (L.): 1 male, 1 female, em. 1989, PORTUGAL [Baixa Alentejo] (WGT); *Thymelicus acteon* (Rottemburg): 1 male, ex larva, coll. and em. 1997, Dungy Head, Lulworth, Dorset (NADB/BGd); *Pieris rapae* (L.): 1 male, ex pupa, 1996, 1997, Portslade , Sussex (ARC); *Anthocharis cardamines* (L.): 2 males, ex pupae, em. 15-20.vii.93, Chelmsford, Essex (KU); 1 male, ex pupa, 1993, end iv.94, Bartley, Hampshire (JG); *Lycaena phlaeas* (L.): 1 female, ex pupa, ix.92, Biggleswade, Bedfordshire (RR); *Lycaena dispar* (L.), semi-captive colony of ssp. *batavus* (Oberthür) on *Rumex obtusifolius*: 2 males, 2 females, ex larvae, em. ix.95, and 2 broods each of 2 females, 12.v.96, 10.vii.96, Woodwalton Fen, Huntingdonshire (LM); *Aglais urticae* (L.): brood of 2 females, ex larva, 30.vii.92, viii.92, and brood of 1 male 1 female, vii.92, ix.92, 22-25.ix.92, Treeton, South Yorkshire (THF); *Pseudoterpna pruinata* (Hufnagel) on *Ulex gallii*: 3 females, ex larva and pupae, 22-23.v.97, 1.vi.97, 18-19.vi.97, Fedw Fawr, Anglesey (MRS); *Lycia hirtaria* Clerck: 1 male, 1 female, ex larva, vi.91, iv.92, v.92, FRANCE [8km. N. of Frejus, Var] (THF); *Odezia atrata* (L.): 1 male, 1 female, vi.97, vii.97, Coombsdale, Derbyshire (BS); *Hecatera dysodea* (Denis & Schiffermüller) on *Lactuca*: brood of 1 male 1 female, ex larva, and 1 male, ex pupa, p.l.e. ix.98, em. 4-8.x.98, Gravesend, Kent (RH); brood of 1 male 1 female, 28.viii.98, ix.98, x.98, Gravesend/Swanscombe, Kent (RH); *Calophasia lunula* (Hufnagel): 1 female, ex larva, 1973, Dungeness, Kent (DO'K/JMC-H). *Z. fausta*, *L. dispar batavus* and *H. dysodea* are new host records for this very polyphagous parasitoid of exposed lepidoptera.

Pseudoperichaeta nigrolineata (Stephens in Walker). *Choreutis nemorana* (Hübner): 1 male, 1 female, ex larvae, S. FRANCE (JLG); ? tortricid in *Quercus* leaf roll: 1 male, ex pupa, 5.vi.83, 1.vii.83, Hampstead Heath, London (RAS); *Cacoecimorpha pronubana* (Hübner) or *Archips podana* (Scopoli): 2 males, ex pupae, em. 6.vi.94, Folkestone, Kent (MT); *Eurrhypara hortulata* (L.) collected as cocoon under bark of *Acer pseudoplatanus*: 1 male, ex prepupa., 19.i.94, 17.ii.94, London (DH); microlepidopteran, perhaps *Eurrhypara hortulata* (L.) on *Urtica*: 1 female, ex prepupa, 6.viii.83, 24.viii.83, Hampstead Heath, London (RAS); *Udea lutealis* (Hübner): 1 example, ex larva, 9.vii.67, vii.67, Perwick Bay, Port St. Mary, Isle of

Man (JMC-H); *Cnaemidophorus rhododactyla* (Denis & Schiffermüller): 1 male, 1 female, ex larvae, em. 1993, Seward Stonebury, Essex (MSP); indet. tortricid in *Colutea* pods: 1 example, ex larva, 9.vii.97, 27.vii.97, FRANCE [Nans les Pins, Var] (MRS). *C. nemorana*, *U. lutealis*, and *C. rhododactyla* are new host records for this rather polyphagous parasitoid of medium to large sized microlepidoptera.

Pseudoperichaeta palesoidea (Robineau-Desvoidy). Indet. microlepidopteran in rolled leaf of *Centaurea*: 1 female, ex pupa, 19.vii.97, 24.vii.97, 6.viii.97, FRANCE [Col du Galibier, Hautes-Alpes] (MRS). There are records from Oecophoridae and Tortricidae.

Senometopia susurrans (Robineau-Desvoidy). *Semiothisa clathrata* (L.): 1 male, 3 females, puparia in host pupae, 22.vii.93, 3-13.ix.93, FRANCE [Limogne, Lot] (MRS). This is the first reliable host record for this species (Tschorsnig, pers. comm.).

Tlephusa cincinna (Rondani). *Mesoacidalia aglaja* (L.): 1 male, ex pupa, vi.96, FINLAND [Lapinjarvi] (AK/JP). This is probably the first reliable rearing record for this species as the previous records from *Hyloicus pinastri* (L.) are considered doubtful (Tschorsnig, pers. comm.).

Townsendiellomyia nidicola (Townsend). *Euproctis chrysorrhoea* (L.): 4 males, 2 females, ex larvae, 1991, 1 female, 1993, Portslade, Sussex (ARC). This specialist parasitoid of *E. chrysorrhoea* is probably more widespread along the south coast of England than previously thought.

Exoristini

Exorista fasciata (Fallén). *Zygaena filipendulae* (L.): 1 male, ex prepupa, em. 1.vii.97, Burren, Co. Clare, Ireland (WGT&SMT); *Zygaena* sp.: 1 male, ex cocoon, em. vii.93, Shrewton Folly, Wiltshire (SMP); indet. Lithosiinae: 1 male, ex larva, em. vi.93, Boscombe Down, Wiltshire (SMP). First rearing record of this species from Lithosiinae. See also corrections to Ford & Shaw (1991) at the end of this paper.

Exorista larvarum (Linnaeus). *Calophasia lunula* (Hufnagel) on *Linaria*: 1 female, ex larva, 4.vii.91, 19.ii.92, GERMANY [Baden-Württemberg] (JFB); indet lepidopteran on *Salix*: brood of 2 females, ex pupa, vi.84, 1984, FRANCE [Ille d'Olonne, Vendée] (NH). *C. lunula* is a new host record.

Exorista segregata (Rondani). *Zygaena fausta* (L.): 3 examples, ex prepupae or pupae, em. 20.iv-13.v.1989, PORTUGAL [Baixa Alentejo] (WGT). This is a new host record; the parasitoid is also known from 7 other *Zygaena* species.

Goniini

Cyzenis albicans (Fallén). *Ypsolopha vitella* (L.): 1 male, ex larva, 10.vi.89, iv.90, Edinburgh (MRS); *Operophtera brumata* (L.): 9 puparia in 9 pupae, 27.v.95, unemerged, Blackford Hill, Edinburgh, (MRS); 15 examples (1 male, 1 female emerged), v. 95, Bonar Bridge, Sutherland (JK); on *Prunus*: 3 examples, ex pupae, 4.vi.94, 21-30.iv.95, Gait Barrows NNR, Lancashire (MRS).

Eumea linearicornis (Zetterstedt). ? *Archips podana* (Scopoli): 1 male, ex larva, 5.vii.86, viii.86, Cornwall (JLG); *Aphelia paleana* (Hübner): 1 example, ex pupa, 26.vii.75, Sugar Loaf Hill, Folkestone, Kent (JMC-H); indet. lepidopteran: 1 female, ex larva, vi.92, 1996, Portslade, Sussex (ARC).

Masicera pavoniae (Robineau-Desvoidy). *Saturnia pavonia* (L.): 18 puparia seen, part broods from 25 affected larvae, vi.33, FRANCE [Dordogne] (KJS).

Masicera sphingivora (Robineau-Desvoidy). *Hyles euphorbiae* (L.) on *Euphorbia characias*: 3 males, 9 females from 2 pupae, 15.xi.96, iv.97, FRANCE [Plateau de Vernegues, Bouches-du-Rhône] (DC); *Hyles centralasiae* (Staudinger), semi-captive colony of ssp. *siehei* (Püngeler): 1 female, ex pupa, 1987, iii.98, AUSTRIA [Sollenau] (AP). *H. centralasiae* is a new host record.

Ocytata pallipes (Fallén). *Forficula auricularia* (L.) (Dermaptera: Forficulidae): 1 female, adult, 11.ix.92, 13.ix.92, 15.xi.92, Burrington Coombe, Somerset (THF).

Pales pavida (Meigen). *Zygaena filipendulae* (L.): 3 examples, ex prepupae, Jacob's Well, Surrey (WGT); 1 male, ex larva, em. 23.vi.95, St. Michael's Mount, Cornwall (WGT); 1 female, ex prepupa, 17.vi.97, Mullion Cove, Cornwall (WGT); *Zygaena lonicerae* (Scheven): 1 male,

prepupa, 15.vii.97, 29.vii.97, Sheffield, South Yorkshire (THF); 1 male, ex prepupa, em. vi.1997, Wirksworth, Derbyshire (BS); *Cacoecimorpha pronubana* (Hübner): 1 example, ex larva, vii.65, Camberwell, London, (AME/JMC-H); *Thymelicus acteon* (Rottemburg): 1 male, coll. and em. 1997, Dungy Head, Lulworth, Dorset (NADB/BGd); *Colias croceus* (Geoffroy): 1 male, 2 females, ex larvae, em. 5-12.xii.96, Worksop, Nottinghamshire (MCW) (Specimens returned to rearer); *Lycaena dispar* (L.), semi-captive colony of ssp. *batavus* (Oberthür): 1 male, 1 female, and a brood of 1 male 1 female, ex larvae, 1997, Woodwalton Fen, Huntingdonshire (LM); *Aglais urticae* (L.): brood of 2 (1 male emerged), ex pupa, 16.vii.97, 20.vii.97, 6.viii.97, Sheffield, South Yorkshire (THF); *Coenonympha tullia* (Müller): 1 male, ex 5th. instar larva, 1.v.97, 13.v.97, 31.v.97, Hatfield Chase, Yorkshire (MCW) (Specimens returned to rearer); *Malacosoma neustria* (L.): 2 males, em. vi.92, Portslade, Sussex (ARC); *Lycia lapponaria* (Boisduval) on *Myrica*: 2 females, 4.vii.92, vii-viii.92, 14.viii-ix.92, Resipole, Argyll (MRS); *Euproctis chrysorrhoea* (L.): 1 male, em. vi.92, 1 male, ex larva, 1996, Portslade, Sussex (ARC); 2 males, 1 female, 5.vi.95, 17.vi.95, London (GK); *Spilosoma lubricipeda* (L.), semi-captive: 1 male, ex larva, 1997, Portslade, West Sussex (ARC); *Xestia* sp.: 6 examples, ex larvae, 4.xi-15.xii.93, 27.xii.93-10.i.94, 7-24.i.94, Heddon-on-the-Wall, Northumberland (HA); *Orthosia miniosa* (Denis & Schiffermüller) on *Quercus mas*: 1 male, ex larva, 18.v.96, 9.vi.96, 28.vi.96, FRANCE [St. Alvère, Dordogne] (MRS); *Orthosia gracilis* (Denis & Schiffermüller) on *Myrica*: 6 males, 1 female, ex larvae, 4.vii.92, vii.92, viii.92, Resipole, Argyll (MRS); *Orthosia stabilis* (Denis & Schiffermüller) on *Quercus*: 1 female, ex larva, 1.vii.95, 13.vii.95, 26.vii.95, Loch Arkaig, Argyll (THF); ? *Orthosia gothica* (L.): 1 male, ex larva, 5.vii.86, viii.86, Cornwall (JLG); *Mythimna* sp.: 1 male, ex larva, 3.iv.95, 8.iv.95, Sheffield, South Yorkshire (THF); *Calophasia lunula* (L.): 1 male,1973, Dungeness, Kent (DO'K/JMC-H); *Xylena vetusta* (Hübner): 1 male, p.l.e. vii.92, em. 11.viii.92, Resipole, Argyll (MRS); *Spodoptera cilium* (Guenée), captive: 1 male, ex larva, v.93, 1993, Caxton, Norfolk (GMH); plusiine larva on *Medicago*: 1 female (very small), 27.vii.96, x.96, Cothill, Oxfordshire (ARC). *C. pronubana*, *T. acteon*, *C. croceus*, *L. dispar*, *C. tullia*, *L. lapponaria* and *S. cilium,* are new host records and, as far as we can ascertain, the rearing from *C. tullia* is the first record of a tachinid reared from this species (which is seldom collected as a larva).

Phryno vetula (Meigen). *Orthosia miniosa* (Denis & Schiffermüller) on *Quercus mas*: 1 male, ex pupa, 18.v.96, 19.iii.97, FRANCE [St. Alvère, Dordogne] (MRS).

Sturmia bella (Meigen). *Vanessa atalanta* (L.) on *Parietaria*: 1 male, ex pupa, 20.vii.93, viii.93, 25.viii.93, FRANCE [St. Jean du Gard, Gard] (MRS); *Aglais urticae* (L.): 1 male, ex larva, vii.94, 17.vii.94, vii-viii.94, FRANCE [Manche] (GEK); *Inachis io* (L.): 1 male (determination confirmed by Dr Tschorsnig), ex pupa, 6.vii.98, vii.98, 26.vii.98, Bartley, Southampton, Hampshire(JG). The rearing from *I. io* is the first British record for *S. nella,* which is a common parasitoid of Nymphalidae on the European mainland. As several of these are among the most commonly reared Lepidoptera, it seems probable that *S. bella* is a recent arrival in Britain, possibly released following the importation of caterpillars from abroad.

Winthemiini

Nemorilla floralis (Fallén). *Eurrhypara hortulata* (L.) on *Urtica*: 1 female, ex larva, 1979, iv.80, 15.v.80, Hampstead Heath, London (RAS); *Pleuroptya ruralis* (Scopoli): 1 male, ex pupa, 16.vi.93, 23.vi.93, 6.vii.93, South Yorkshire (THF); brood of 3, ex pupa, vii.93, vii.93, Catcliffe, South Yorkshire (THF); brood of 1 male 1 female, ex pupa, 16.vi.93, 3-4.vii.93, and 1 male, ex prepupa, 29.v.93, 5.vi.93, 28.vi.93, Treeton, South Yorkshire (THF); *Autographa gamma* (L.): 1 male, 1 female, ex pupae, em. 8.ix.72, Catcliffe,South Yorkshire (THF); on *Symphytum*: 1 male, 1 female, ex pupae, 1.v.95, v.95, vi.95, Catcliffe, South Yorkshire (THF).

Smidtia conspersa (Meigen). *Alsophila aescularia* (Denis & Schiffermüller) on *Betula*: 1 male, ex pupa, 11.vi.94, 21.iv.95, Silwood Park, Berkshire (MRS); *Epirrita* sp. on *Corylus*: 1 male, ex pupa, 13.v.90, 24.iv.91, Gait Barrows NNR, Lancashire (MRS); on *Crataegus*: 1 male, ex larva, 27.v.89, 9.iv.90, Witherslack, Cumbria (MRS).

Winthemia quadripustulata (Fabricius). *Aphelia paleana* (Hübner) on *Tussilago*: 1 male, ex larva, 7.vi.80, 4.vii.80, Blackford Hill, Edinburgh (MRS); *Cucullia scrophulariae* (Denis &

Schiffermüller): brood of 7, ex larva, em. 2-4.viii.92, SPAIN [Navarra] (BG); *Cucullia verbasci* (L.) on *Verbascum*: 5 males, 7 females, and 12 males, 13 females in broods of 5-12 from several hosts, ex larvae, 17.vii.93, viii-ix.93, FRANCE [Chambon, Puy-de-Dôme] (MRS). *A. paleana* is a new host record.

TACHININAE

Ernestiini

Ernestia rudis (Fallén). *Xylena vetusta* (Hübner): 1 male, ex larva, 4.vii.92, vii.92, 27.iv.93, Resipole, Argyll (MRS). On the continent this is the most important parasitoid of *Panolis flammea* (Denis & Schiffermüller), with numerous records. This is the first record from *X. vetusta*.

Ernestia vagans (Meigen). *Achlya flavicornis* (L.) on *Betula*: 1 male, ex prepupa, 30.vi.82, p.l.e. ca viii.82, dissected from puparium, Muir of Dinnet NNR, Aberdeenshire (MRS).

Eurithia anthophila (Robineau-Desvoidy). *Spilosoma luteum* (Hufnagel): 2 puparia, ex prepupae, 5.ix.82, p.l.e. ix.82, unemerged, Beech Hill, Berkshire (BTP).

Eurithia caesia (Fallén). *Hadena* sp. in pod of *Silene vulgaris*: 1 male, ex larva, 27.vii.93, 3.viii.93, 29.iv.94, FRANCE [Chambon, Puy-de-Dôme] (MRS). Mostly recorded from *Hadena* spp.

Graphogastrini

Graphogaster brunnescens Villeneuve. ? *Teleiodes proximella* (Hübner) on *Betula*: 3 males, ex larvae, ix.84, Leac Gorm, Ballater, Aberdeenshire (MRY). This appears to be the first rearing record for Britain and, if the host is correct, it is also a new host record, although it has been reared in Europe from *Teleiodes notatella* (Hübner) and other arboreal microlepidoptera.

Phytomyptera cingulata (Robineau-Desvoidy). *Nemopogon cloacella* (Haworth) on fungus on *Quercus*: 1 male, ex larva, 7.ii.87, vi.87, Leaderfoot, Roxburghshire (KPB).

Phytomyptera nigrina (Meigen). *Gypsonoma minutata* (Hübner) on *Populus tremula*: 1 female, ex larva, collected 12.vii.98, noted 1.viii.98, SPAIN [Juslibol, Zaragoza] (GEK); *Adaina microdactyla* (Hübner) in *Eupatorium* stem: 1 female, 29.iv.79, 24.v.79, Catfield, Norfolk (MRS); indet. microlepidopteran on *Betula pubescens*: 1 male, ex larva, 27.vi.94, em. 1994, Botley Wood, Hampshire (JRL).

Linnaemyini

Lypha dubia (Fallén). *Tortrix viridana* (L.): 2 males, 3 females, ex prepupae, 10.v.93, vii.93, 6-12.iv.94, Budby, Nottinghamshire (THF); 1 male, 29.v.93, vi.93, 19.iv.94, Nottinghamshire (THF); *Operophtera brumata* (L.): 1 example, ex prepupa, 13.v.90, v-vi.90, 1991, 1 male, ex prepupa, 4.vi.94, 8.vi.94, 21.iv.95, 1 female, ex prepupa, 4.vi.94, 30.v.95, Gait Barrows NNR, Lancashire (MRS); 22 examples, ex prepupae, 27.v.95, 1996, Edinburgh (MRS); 16 puparia, 27.v.95, Blackford Hill, Edinburgh (MRS); 3 puparia (2 males emerged), v.95 Bonar Bridge, Sutherland (JK); on *Crataegus*: 1 male, 27.v.90, 11.iv.91, Gait Barrows NNR, Lancashire (MRS).

Macquartiini

Anthomyiopsis plagioderae Mesnil. *Plagiodera versicolora* (Laicharting) (Col.: Chrysomelidae): 4 examples, adults, em. vii.97, Kew, London (DH). Owing to an accident only one specimen remains. *A. plagioderae* is here recorded from Britain for the first time. There are ten previous continental records from this host and one from the chrysomelid *Phyllodecta vitellinae* (L.).

Nemoraeini

Nemoraea pellucida (Meigen). *Chrysodeixis chalcites* (Esper): 3 males, 1 female, ex pupae, coll. and em. 1988, N.W.YUGOSLAVIA (JLG). New host record.

Pelatachinini

Pelatachina tibialis (Fallén). *Vanessa atalanta* (L.): 2 puparia, p.l.e. 26.vi.96, unemerged, St. Catherine's Point, Isle of Wight (AS); *Aglais urticae* (L.): 15 examples, ex larvae, 29.vi.92, 1993, Wellingborough, Northamptonshire (JHP); 8 examples ex 6 hosts (1 male examined), ex larvae, 18.vi.96, 27.vi.96, 15.iv.97, Wellingborough, Northamptonshire (PT); 10 examples

(1 male emerged), ex larvae, 2.vii.95, 5.vii.95, vi.96, Ardgour, Argyll (THF); *Inachis io* (L.): 3 males, 3 females, ex larvae, 7.vii.73, ca 20.vii.73, iv.74, Stroud, Gloucestershire (MRS); 1 example, ex larva, (unknown dates), Redditch, Worcestershire (JM); 1 male, ex larva, 12.vii.93, 25.vii.93, viii.93, Catcliffe, South Yorkshire (THF); 1 female, ex larva, 25.vii.96, 1.viii.96, em. 1997, Thorpe Wood, Co. Durham (HAE).

Siphonini

Actia crassicornis (Meigen). *Agonopterix nervosa* (Haworth) (det. J.R.Langmaid) on *Ulex*:1 male, 5 females, ex prepupae, 12.v.97, vi.97, vii.97, Strontian, Argyll (THF); 3 males, 3 females, ex prepupae, 17.vi.98, vi.98, vii.98, Ardgour, Argyll (THF).

Actia lamia (Meigen). Indet. microlepidopteran in dead stem of *Cirsium arvense*: 1 male, ex larva, 2.ii.97, 23.vi.97, Yellowcraigs, East Lothian (MRS). Reliable records only from Tortricidae.

Actia pilipennis (Fallén). *Caloptilia syringella* (Fabricius) on *Syringa*: 1 female, ex prepupa,16.vii.98, 23.vii.98, 1.viii.98, Sheffield, South Yorkshire (THF); *Cnephasia* sp. on *Urtica*: 1 male, ex larva, puparium collected 22.vii.93, 3.viii.93, FRANCE [Limogne, Lot] (MRS); *Xerocnephasia rigana* (Sodoffsky) on low *Clematis*: 8 males, 9 females, ex larvae, 15.vii.93, vii-viii.93, FRANCE [Bédoin, Vaucluse] (MRS); *Acleris hastiana* (L.) on *Salix salvifolia*: 2 females, 11.iv.94, 8-11.v.94, PORTUGAL [Bordeira] (MFVC); indet. tortricid on *Myrica*: 1 male, ex larva, 1.ix.89, ix.89, 25.x.89, Aberfoyle, Perthshire (MRS); 1 male, 19.vi.88, 5.vii.88, Loch Tulla, Argyll (RPK-J); indet. larva on *Salix*: 1 male, 19.vii.86, 9.viii.86, West Cornwall (JLG); indet. microlepidopteran on *Rosa*: 1 female, ex larva or prepupa, 1997, Staffordshire (LM). *C. syringella, X. rigana* and *A. hastiana* are new host records.

Actia resinellae (Schrank). *Cydia coniferana* (Ratzeburg): 1 example, 18.iv.71, 10.v.71, Oakham Common, Surrey (JMC-H). New host record.

Ceromya bicolor (Meigen). *Eriogaster lanestris* (L.) on *Betula*: 2 females, ex larvae, 29.vii.91, FRANCE [Col du Lautaret, Hautes-Alpes] (MRS); *Lasiocampa quercus* (L.): brood of 22 (2 males, 2 females emerged), ex larva, 30.vii.92, 3.viii.92, iv-v.93, and brood of 21 (1 male emerged), ex larva, p.l.e. 24.vii.94, em. 20.v-11.vi.95, Loch Eriboll, Sutherland (MRS); 37 puparia (1 female emerged), ex larva, 23.vi.97, 30.vi.97, Shorne, Kent (MJ); 35 puparia (6 emerged), 1994, Portslade, Sussex (ARC); brood of 18 (1 male, 2 females emerged), p.l.e. 15.vii.92, em. viii.92, Burrival, North Uist (KPB); brood of 63 (5 received), ex larva, 29.vii.88, p.l.e. 31.vii.88, eclosion not observed, Gleniffer Braes Country Park, Renfrewshire (MAH).

Goniocera versicolor (Fallén). *Malacosoma neustria* (L.): 1 female, ex larva, 1997, Portslade, Sussex (ARC).

Peribaea apicalis Robineau-Desvoidy. *Semiothisa clathrata* (L.): 3 males, ex larvae, 22.vii.93, 30.vii-2.viii.93, 8.viii-20.viii.93, FRANCE [Limogne, Lot] (MRS); ? *Semiothisa clathrata* (L.): 1 female, ex larva, 19.vii.96, 8.viii.96, FRANCE [Darbres, Ardèche] (MRS). New host record.

Peribaea setinervis (Thomson). *Agriopis* or *Erannis* sp.: 1 female, 7.v.90, v.90, 18.vi.90, Thompson Common, Norfolk (GMH).

Peribaea tibialis (Robineau-Desvoidy). Indet. satyrid: 1 female, ex larva, 2.viii.90, 30.viii.90, FRANCE [Vers, Lot] (MRS); ? *Noctua interjecta* (Hübner): brood of 6 males 2 females, ex larva, 15.v.96, 1.vi.96, ca 15.vi.96, FRANCE [Bernac, Lot-et-Garonne] (MRS); *Mythimna* sp.: 1 female., ex larva, 25.vii.93, 29.viii.93, FRANCE [Riberac, Dordogne] (MRS); *Ammoconia caecimacula* (Denis & Schiffermüller): 1 male, 2 females, ex larvae, 18.v.96, 1.vi.96, 17.vi.96 FRANCE [St. Alvère, Dordogne] (MRS); *Aporophyla lutulenta* (Denis & Schiffermüller) on *Convolvulus*: 1 male, ex larva, 4.vii.97, SPAIN [Tarragona] (GEK). *N. interjecta*, if the identification is correct, *A. caecimacula* and *A. lutulenta* are new host records.

Siphona confusa Mesnil. Indet. geometrid larva on Compositae: 1 example, ex prepupa, 18.vii.97, 22.vii.97, iv.98, FRANCE [Col de Vars, Hautes-Alpes] (MRS). This is the first host record of the true *confusa* (cf. Andersen, 1996) (Tschorsnig, pers. comm.).

Siphona cristata (Fabricius). *Mamestra brassicae* (L.) on *Chenopodium*: 3 males, ex pupae, viii.93, vii.94, East Wretham, Norfolk (GMH).

Tachinini

Tachina fera (Linnaeus). *Ceramica pisi* (L.): 1 male, ex pupa, em. 1994, Salisbury Plain, Wiltshire (DR). Mainly parasitic on noctuid larvae, with numerous species recorded. Occasional records from Lymantriidae.

Tachina grossa (Linnaeus). *Macrothylacia rubi* (L.): 1 female, 24.iii.98, 22.v.98, Beeley Moor, Derbyshire (BS).

Triarthriini

Triarthria setipennis (Fallén). *Forficula auricularia* (L.) (Dermaptera: Forficulidae): 2 females, adult and nymph, 1.v.95, vi.95, Catcliffe, South Yorkshire (THF); indet. earwig remains in stem of *Heracleum*: 1 male, ? adult, 25.x.81, 8.vii.82, Drayton St. Leonard, Oxfordshire (MRS).

Corrections to Ford & Shaw (1991)

Page 24. ***Exorista larvarum*** (L.): The record in Ford & Shaw (1991) of 4 males and 5 females from *Parasemia plantaginis* (L.) at Ailsa Craig is in error as the material has been reidentified as *Exorista fasciata* (Fallén).

Page 31. ***Pales pavida*** (Meigen): in the first record given by Ford & Shaw (1991) from *Orthosia stabilis* (Denis & Schiffermüller) on line 19, delete "viii.82" and insert "vi.88".

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Our thanks are due to Dr B. Herting and Dr H-P. Tschorsnig of the Staatliches Museum für Naturkunde in Stuttgart for their unstinting help with the determination of specimens not always in the best of condition, and for their valuable suggestions on the preparation of this paper; also to Dr. John Langmaid for the determination of *Agonopterix nervosa* and to the following contributors of material: H. Abbasipour, R.R. Askew, D.A. Barbour, K.P. Bland, N.A.D. Bourne, D. Budworth, J.F. Burton, J.M. Chalmers-Hunt, D. Chanselme, M.F.V. Corley, A.R. Cronin, I. Cross, C. Eliasson, H.A. Ellis, A.M. Emmet, R.E. Evans, I.D. Ferguson, J. Gifford, W. Gilchrist, B. Goater, B. Goodger, D. Goulson, K.C. Greenwood, J.L. Gregory, D. Hackett, G.M. Haggett, N. Hall, F. Harrison, R. Hayward, S.M. Hewitt, M.A. Hope, M. Jennings, J. Kerslake, G.E. King, R.P. Knill-Jones, A. Komonen, J.R. Langmaid, R. Leverton, R.I. Lorimer, H. McHaffie, J. Malbon, L. Martin, G.J. Maynard, B. Mitchell, G. Nobes, D. O'Keefe, D.F. Owen, S.M. Palmer, B.T. Parsons, M.S. Parsons, J. Paukkunen, J.H. Payne, E.C. Pelham-Clinton, A. Pittaway, C.W. Plant, J.M. Price, R. Revels, D. Rey, P.J.C. Russell, B. Statham, A. Steele, K.J. Stockman, P. Summers, M. Tansley, P. Tebbutt, W.G. Tremewan, S.M. Tremewan, K. Ulrich, M.C. White, R.J. Worthy, J.L. Yela, D. Young, M.R. Young. We also thank Tony Pittaway, John Todd and Jason Bryan for much valuable and expert help given to Tom Ford with his computer software.

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An index of entomology sites on the internet

The editor is in the process of compiling a list of internet/web sources of entomology information that are of relevance to British entomologists. Although searching the internet is relatively easy, at least for those who know how or who, like me, have teenage larvae who can do it for them, it strikes me as being even easier to have a readily available index of the main sources. Several county moth groups now have their own web site (Essex, Suffolk and Norfolk are so far known to me); several organisations, such as the Lancashire & Cheshire Entomological Society and the British Entomological & Natural History Society, have their own sites too and there are a number of special interest bulletin boards, discussion groups and so on. Additionally, many individual entomologists have their own web sites which, in some cases, may contain information that is of interest to others, or links to other appropriate sites.

Readers are invited to supply me with the address of any site that is considered likely to be of interest to other entomologists, along with a note of, in very general terms, what the site is about. I do not want to hear about sites under construction, but please do advise me as soon as these sites become operative.

A provisional list will be published in this journal later this year and links will be available from my own web site (currently under construction) in due course.– Colin W. Plant, 14 West Road, Bishops Stortford, Hertfordshire CM23 3QP; E-mail Colinwplant@compuserve.com

Small Ranunculus *Hecatera dysodea* (D.& S.) (Lep.: Noctuidae) in Monmouthshire

On 15 July 1999, members of Community Action for Wildlife in Newport met at a car park to the south-east of the city, before heading off to an evening's moth trapping. One of the group, Roger James, handed round a number of moths he had captured at light the previous night in his garden. Amongst these was a small noctuid that defied casual identification by Martin Anthoney, the Monmouthshire Lepidoptera Recorder, and myself. The moth was given to me for further examination and, once set, with the dark shading of the hind wings now visible, it was clear that it was a dark, strongly-marked example of the Small Ranunculus *Hecatera dysodea*.

According to Heath and Emmet (1983. *Moths and Butterflies of Great Britain and Ireland* **9**: 226-227), the last British record of this species was in 1941 after which it was presumed extinct until re-discovered in the Thames Estuary area by David Agassiz in 1997 (Agassiz & Spice, 1998. *Ent. Rec.* **110**: 229-232). It was recorded up to about the turn of the century from Glamorgan and Herefordshire (Heath & Emmet *loc. cit.*), but was not previously noted from Monmouthshire (VC50) and is absent from the published county list (Horton, 1994. *Monmouthshire Lepidoptera – the butterflies and moths of Gwent*). However, it had evidently disappeared from most of its range, including all of Wales and the border areas, by 1912.

Roger James' house and garden sit on a small prominence some 1.5 kilometres west of the centre of Newport, with an uninterrupted view south and south-east over the lower Usk Valley and the Severn Estuary, to the coasts of Somerset and Gloucestershire. Of thirty-one species trapped on 14 July 1999, all but the Small Ranunculus were common residents, though according to meteorological information kindly supplied by Bruce Campbell, Keeper of Natural Sciences at Newport Museum, there was a steady to stiff southerly breeze on the night of 14 July.

There were many entomologist visitors to the Thames Estuary sites during 1998, most of whom evidently removed larvae for rearing at home. The abundance of larvae there in that year, and their cryptic habit when at rest on the foodplant, meant that most people actually returned with rather more larvae than they intended. There is thus the inevitable possibility that the Newport example could have originated as either an escape or a deliberate release, perhaps in the local area or as a wind blown example from across the Severn Estuary. However, the reappearance of the moth in its former Thames Estuary sites came as a complete surprise and is as yet unexplained. With this in mind, it is not at all possible to dismiss the Welsh record.

Roger James only began moth trapping in his garden on 27 April 1999 so, along with a Vestal *Rhodometra sacraria* (L.), captured on 20 September 1999, the Small Ranunculus is certainly his most interesting capture so far.– MARTIN J. WHITE, 8 St. Nicholas Square, Maritime Quarter, Swansea SA1 1UG.

Triaxomasia caprimulgella (Stt.) and *Haplotinea insectella* (Fabr.) (Lep.: Tineidae) in Lincolnshire

During 1997, I was asked by Mr Andy Godfrey if I would look at some Lepidoptera collected in water-trap samples from a rot-hole in an oak *Quercus* tree at Hagnaby, near Spilsby, Lincolnshire (VC 54) during the previous year. The material, which was preserved in alcohol, was considerable and it took some time to determine it all by means of genitalic characters.

The most striking aspect of the material was the presence of *T. caprimulgella* in considerable numbers – indeed it was by far the most numerous species present. None was included in a sample dated 10 July 1996, but the following sample, dated 22 July 1996, contained a total of 58 specimens of both sexes. There was obviously a substantial population present within the rot-hole where it was evidently breeding, for two of the specimens has unexpanded wings and had presumably fallen into the water trap very shortly after eclosion. A sample dated 25 July 1996 contained a further five specimens while the following two samples, dated 7 and 16 August each contained a single example. Thus, the main emergence period of this population was during the third week of July with occasional moths persisting until early-August, rather later than the emergence period of June/July cited by Pelham-Clinton (1985. *Tineidae* in *Moths and Butterflies of Great Britain and Ireland*, volume 2). In this work, Pelham-Clinton wrote "A very little-known species, obscure in appearance and habits" and continued "An association with the insides of hollow trees and, in Hyde Park, sheds, suggests that these might be breeding places ...". He gives its distribution as south-east England north to Cambridgeshire and Suffolk, the tone of his comments suggesting that *T. caprimulgella* is rather seldom encountered. Despite the large number of moths captured in water traps at Hagnaby during 1996, which must have involved a sizable portion of the population, the species persists there, for a small sample dated 18 July 1998 contained four moths.

Among other species present in the 1996 material were two specimens of *Haplotinea insectella*, contained in the samples dated 10 and 22 July. Johnson (1996. The butterflies and moths of Lincolnshire: the micro-moths and species review to 1996) indicates that the only previous county record (also from VC 54) dates from July 1914. As this was before the separation of *H. ditella* (Pierce & Metcalfe) the record was presumably allocated to the former species on the basis of probability.– H. E. Beaumont, 37 Melton Green, Rotherham, South Yorkshire S63 6AA.

Ovendenia lienigianus (Zell.) (Lep.: Pterophoridae) recorded in Bedfordshire

Harry Beaumont's report of *Triaxomasia caprimulgella* (Stt.) from Andy Godfrey's alcohol preserved samples from Lincolnshire (above), reminded me that, in spite of my constant bullying of other people to write notes for this journal, I had myself omitted to commit to paper a similar important record!

During the course of contracted survey work at Luton Airport, Bedfordshire during 1999, I operated two malaise traps adjacent to the runway. One of these was sited on a former rubbish tip area, at grid reference TL 121211, now covered and

dominated by ruderal grassland with large numbers of hawthorn *Crataegus monogyna* and wild rose *Rosa* spp. bushes as well as much bramble *Rubus fruticosus* agg.. The sample for 15 June to 5 July from this trap contained a number of microlepidoptera and, because these records were not directly required for the ecological assessment, the specimens were tubed and put on one side until time became available for looking at them. The realisation that such free-time was unlikely to become available in the foreseeable future prompted me to pass the tube to David Manning, in his capacity as Bedfordshire Lepidoptera Recorder, with a note that the only way he was likely to get the records out of me was to look at the sample himself! Naturally, he rose magnificently to the occasion and very rapidly determined a list of 28 species by examination of genital characters. Amongst the material he looked at were two specimens of *O. lienigialis*, the first records for Bedfordshire.

Accoring to Maitland Emmet's *Chart showing life history and habits of the British Lepidoptera* presented in volume 7 (2) of *The moths and butterflies of Great Britain and Ireland* (Harley Books, Colchester), the larval foodplant of this species of plume moth is mugwort *Artemisia vulgaris*, with occasional records from *Leucanthemum vulgare* and *Solanum* spp. Mugwort was growing in plenty in the vicinity of the malaise trap at Luton Airport, as was *Solanum dulcamara*, and it is surely likely that the moth is breeding at this site.

It may also be worth mentioning, in passing, that I also recorded this plume moth at Rushey Mead Nature Reserve, North Essex recently, when a larva was swept from a mugwort plant growing by the gate against a busy main road. The two records together may suggest that this is an under-recorded moth, at least in this part of the country.

I am most grateful to David Manning for his generosity and efficiency in identifying my far from appealing malaise trap samples of micro moths preserved in alcohol.–
COLIN W. PLANT, 14 West Road, Bishops Stortford, Hertfordshire CM23 3QP.

The return of *Aricia agestis* (D.&S.) (Lep.: Lycaenidae) to suburban north-west Kent and a comment on the other blue butterflies

In the early post-war years, suburban north-west Kent possessed four common species of blue butterfly, *A. agestis, Polyommatus icarus* (Rott.), *Plebejus argus* (L.) and *Celastrina argiolus* (L.), two soon to disappear and two to become comparatively rare. Although the last named has made a recovery, it remains less common than in the 1920s and 1930s. Today, *P. icarus* belies its vernacular name; it cannot be regarded as common even in the neighbouring countryside. In the 1930s, every bunker on Gravesend Golf Course, in a suburban setting, acted as a haven for a small complement of *icarus*. The distinct colonies of *P. argus* in disused sand pits and some small shallow depressions of similar origin, invariably possessed a carpet of hare's foot trefoil *Trifolium arvense* – possibly the larval foodplant. Bird's foot trefoil *Lotus corniculatus* was absent, or very little in evidence, in these locations

within Dartford or on its periphery, although the prolific colony of *P. argus* on the London Clay several miles to the east at Swanscombe Park flourished amidst an abundance of this plant. *A. agestis* was ubiquitous, generally to be observed singly or in small numbers, but sometimes in a limited area a vast number might be congregated. Thus, Chalmers-Hunt, 1961 (Butterflies and Moths of Kent, *Ent. Rec.* **73**, Supplement p.107), records that scores could be seen in a field adjacent to Joydens Wood in 1946, and at Longfield in 1933 I found the butterfly in profusion in a recently disturbed field field awaiting development.

On 1 August 1999, a very fresh male *A. agestis* attended the main flower border in my garden. It was fresh in appearance and gave ample opportunity to verify that it was not merely a well-marked female *P. icarus*. Its immediate origin was doubtless the abandoned paddock, grassy meadows or disused land adjacent to the end of my garden, whence come the occasional *P. icarus*.

In recent years, two atlases of the local distribution of butterflies to include this area have been published. Philp, 1993 (*The Butterflies of Kent, an atlas of their distribution*) shows *A. agestis* not recorded for the 10-kilometre square which includes Dartford, nor the one immediately to the east, stretching beyond Gravesend, with the exception of the tetrad embracing Swanscombe Park and the adjoining large chalk quarry. The period covered was 1981 to 1990. Plant, 1987 (*The Butterflies of the London Area*) covering a slightly shorter period in the 1980s, also has no records for these two 10km squares; both show the species present on the Chalk further south.– B.K. West, 36 Briar Road, Dartford, Kent DA5 2HN.

Editorial comment: It is most interesting to note the reappearance of *Aricia agestis* at a large number of localities in the south-east during the last few years – not only at traditional sites from where it had apparently disappeared, but also at relatively new sites which clearly did not have the butterfly years ago as they did not then exist. Particularly affected seems to be the East Thames Corridor – essentially the Thames-side areas of Kent and Essex – where the past dumping of pulverised fuel ash (PFA) has created a base-rich substrate and where the unique micro-climate favours a nationally important assemblage of aculeate Hymenoptera and other thermophilic insects. However, records extend westwards right through the heart of London to ruderal sites in the City and beyond. I have been gathering records of *A. agestis* from this area over the past couple of years and would be very keen to hear from anyone who can supply further information, to include both location and first date of appearance plus, if possible, a note of whether the species was previously recorded and, if so, the date of the last known record.

Colin W. Plant

Unusual food plant for *Epiphyas postvittana* (Walker) (Lep.: Tortricidae)

In late September 1999 I was brought two larvae spinning the leaves of a cannabis plant *Cannabis sativa* L. growing in Lymington, Hampshire. The owner of the plant was in high dudgeon at the insects' temerity. The plant was aptly growing in a pot,

but as part of the regime of lavish care in which it basked it had been taken outside during hot days when no doubt eggs were deposited on it.

One of the larvae transformed itself to a specimen of *Epiphyas postvittana* in mid-October. It may be thought that the larva had suffered no ill effects from its noxious foodplant, but it may be observed that the progression from soft to hard drugs was demonstrated in that it died sniffing ammonia.– TONY PICKLES, 2a Park Avenue, Lymington, Hampshire SO41 9GX.

Another unusual foodplant record

Tony Pickles' observation, above, of *Epiphyas postvittana* (Walker) larvae found on hemp *Cannabis sativa* prompts me to recall that during my student years I too found a plant that was being used by Lepidoptera larvae. In this case it was another tortricid, *Cacoecimorpha pronubana* (Hb.). For reasons which readers may speculate upon freely, my memory of the event is somewhat hazy, but I do recall finding at least three or four larvae on the young tips of a plant that was evidently grown indoors from seed and which attained a height of over three metres by the end of that summer!

There does not seem to be any published reference to *Cannabis sativa* as a foodplant of British Lepidoptera until now and I wonder if there are further records that might now be usefully listed in these pages. Unlike Tony, however, I can not support the notion of the progression from this to harder drugs, since my moths attained a ripe old age without succumbing to any other temptation.– COLIN W. PLANT, 14 West Road, Bishops Stortford, Hertfordshire CM23 3QP.

Some moths new to Monmouthshire

During June 1999, Kevin Dupe, Project Officer for *Community Action for Wildlife in Newport* (*CAWN*), sent me a number of moth specimens for identification. Amongst these were two tortricids of particular interest since they are not listed in G. A. Neil Horton's book *Monmouthshire Lepidoptera – the butterflies and moths of Gwent* (1994. Comma International Biological Systems) and appear to be new records for Vice-county 50. These were *Hysterosia inopiana* (Haw.) and the highly distinctive *Cacoecimorpha pronubana* (Hb.).

Kevin netted a single example of *C. pronubana* during the day on 5 June 1999 on the west bank of the River Usk, just to the north of Newport's most notable landmark, the Transporter Bridge, within one kilometre of the city centre. According to Bradley *et al* (1973. *British Tortricoid Moths* 112-113), the species was first recorded as British in Sussex in 1905 and subsequently spread westwards to colonise most of southern England. Since it was noted in Glamorgan as long ago as 1940 it was surely only a matter of time before it was reported from the more easterly county of Monmouthshire.

Several individuals of *Hysterosia inopiana* were captured on the east bank of the River Usk on 23 June 1999 about two kilometres north of Uskmouth. Again, this species is found in Glamorgan and, according to Bradley *et al*, also in Cardiganshire.

Another tortricid not listed for Monmouthshire by Horton (*op. cit.*) is *Epiphyas postvittana* (Walker). This is now an ubiquitous species in suburban settings in South Wales and is common in gardens and parkland in Newport.

On 15 July 1999, I attended a *CAWN* moth trapping event at a site known as Solutia, south-east of Newport at grid reference ST 341851. Four specimens of *Calamotropha paludella* (Hb.) were captured at this meeting, new to Gwent and possibly new to Wales. The identification was confirmed by Ray Barnett at Bristol Museum from a voucher specimen retained. Kevin Dupe subsequently captured *C. paludella* at two other sites in Newport: twelve came to a Heath actinic trap at Hartridge Flood Lagoon (ST 348876) and a further twenty to a similar trap at Duffryn Pond (ST 294846). Brian Slade (*Ent. Rec.* **111**: 210), reporting the recent discovery of this species in Somerset and Gloucestershire, suggests that it has undergone an expansion in range in this part of the country, but the number of specimens taken this year in Gwent also suggest that whilst *paludella* could be a fairly new addition to the county fauna it may already be well-established.

From the 15 July meeting, I identified two further species apparently new to Vice-county 50. The first was *Paraswammerdamia atricapitella* (Scharfenberg), of which several specimens were netted at dusk as they took flight from the blackthorn *Prunus spinosa* hedge surrounding the site. The second was *Limnaecia phragmitella* (Stt.). This proved to be abundant at Solutia, Hartridge Flood Lagoon and Duffryn Pond, but was first captured at a further site – Gaer Pond (ST 296865), north-west of Newport, on 6 July 1999.

Presumably, these species listed above, with the exception of *C. paludella* and perhaps *E. postvittana*, are all long-term residents of the county that had been previously overlooked. This view is supported by the fact that the Bulrush Wainscot *Nonagria typhae* (Thunb.), previously only recorded in Magor Marsh (a prime site much visited by local moth recorders), also proved to be resident at the largely unexplored Hartridge Flood Lagoon, Duffryn Pond and Gaer Pond sites. It seems likely that continuing survey work Newport, and Monmouthshire as a whole, may reveal a considerable number of new (or at least newly-recorded) species, particularly of the smaller moths.– MARTIN J. WHITE, 8 St Nicholas Square, Maritime Quarter, Swansea SA1 1UG.

Abraxas sylvata (Scop.) (Lep.: Geometridae) in the London Area

The assessment of this species' status in the London area by Plant (*Larger Moths of the London Area,* 1993) is that it was an extremely local and former resident, and he quotes only one record for the period 1980 to 1991. Nevertheless it seems certain that one former flourishing colony in the Kent portion of the London area has survived, even if considerably reduced in size, and now existing on short-lived regenerating growth replacing the wych elm *Ulmus glabra* trees killed by dutch elm disease (Paul Sokoloff, *pers. comm.*).

My garden m.v. light in Dartford has attracted three male specimens, all in very good condition, since 1969, on 5.vii.1971, and, of more interest, two recent records

on 24.vii1996 and 5.vii.1999. One is tempted to suggest that one or more of these casual specimens perhaps emanated from this relict colony only eight miles distant. The Joydens Wood wych elms which hosted a thriving colony of white-letter hairstreaks *Strymonidia w-album* Knoch into the 1950s have left no regenerating growth, the site being occupied by well-tended gardens.– B.K. WEST, 36 Briar Road, Dartford, Kent DA5 2HN.

Dewick's Plusia *Macdunnoughia confusa* (Steph.) (Lep.; Noctuidae) in the "London Area"

John Muggleton's record of this migrant species at Staines on 10 October 1999 (*Ent. Rec.* **111**:260) may well be new to VC 21, but it is not the first record for the "London Area" (i.e. the London Natural History Society recording area). A specimen was taken by Colin Hart at Buckland, Surrey on 20 August 1992, a site on the extreme southern boundary of the area described above. The specimen was exhibited at the annual exhibition of the BENHS (although not until 1993 and hence too late for inclusion in Colin Plant's book *Larger Moths of the London Area*, published that same year). It is listed in Collins (1997, *Larger Moths of Surrey*).– GRAHAM A. COLLINS, 15 Hurst Way, South Croydon, Surrey CR2 7AP.

***Ennomos autumnaria* (Wern.) (Lep.: Geometridae) in north-west Kent**

A slightly worn male specimen of *E. autumnaria* visited my garden m.v. light on 2.ix.1999. I have, previously, only seen it on 23.ix.1969 and 25.ix.1972, when the species was a familiar resident of this area, and elsewhere in Kent. At that period, it was frequently seen at street lights, but appears to have been absent from the county for the past twenty-five years except for a very occasional immigrant on the coast.

With *autumnaria* long absent as a resident species in Kent, the Dartford specimen is unlikely to have originated in the county, nor in Surrey from where it is also unknown (Collins, *Larger Moths of Surrey,* 1997). However, a possible source is south-west Essex, directly opposite across the Thames, where for a number of years *autumnaria* has maintained a resident population (Plant, *Larger Moths of the London Area,* 1993).

This seems a more plausible explantation than immigration from the continent which is sporadic only.– B.K. WEST, 36 Briar Road, Dartford, Kent DA5 2HN.

The Willow Ermine *Yponomeuta rorrella* (Hb.) (Lep.: Yponomeutidae) at Old Hall Marsh, Essex

On 1 May 1999, whilst searching a hedgerow for Lepidoptera larvae and weevils at the Royal Society for the Protection of Birds' nature reserve at Old Hall Marsh, Essex, I found a number of webs containing Yponomeutid larvae. Not being certain precisely which species was involved, I took away a few of the larvae, which pupated almost immediately. When the first moth emerged in early June I provisionally named it as *Yponomeuta rorrella* (Hb.); this was later confirmed by Brian Goodey, the Essex macro-Lepidoptera Recorder for the Essex Field Club.

This species was considered to be only an occasional vagrant or immigrant to Essex. Brian Goodey recorded the first example for the county on 3 August 1988 at Fingringhoe Wick, near Colchester. Maitland Emmet searched the area thoroughly, but found no signs of it feeding on the many willows present. It appeared again in Essex a year later, during 1989, at Saffron Walden, Fingringoe, Alresford, Donyland and Grays and then during 1990 at Daws Hall, Lamarsh and Saffron Walden again. My Old Hall Marsh specimens apparently provide the first breeding record for Essex and it is interesting to note that the larval webs were on hawthorn *Crataegus*. No willows or sallows, the expected food plants, were to be found in the vicinity of the feeding larvae.

The survey work at Old Hall Marsh forms a part of a five year project being undertaken on behalf of the RSPB by the Colchester Natural History Society.– DAVID WARNER, 13 Atlas Court, Earls Colne, Essex CO6 2LY.

BOOK REVIEWS

A catalogue of the Irish Braconidae (Hymenoptera: Ichneumonoidea) by **J. P. O'Connor, R. Nash and C van Achterberg**. 124 pp., 7 pages of line-drawings, two pages of colour plates. A5, folded and stapled, ISBN 0 9511514 3 6. Occasional publication of the Irish Biogeographical Society, number 4, 1999. £5 inclusive of postage from the Society at National Museum of Ireland, Kildare Street, Dublin 2, Ireland. An *Erratum* slip accompanies the work.

The parasitic Hymenoptera are a much maligned and very poorly studied group, yet since almost every other insect has at least one hymenopterous parasite that afflicts it they are of some considerable importance. The neglect is likely to be due almost entirely to the lack of keys for many groups and the unworkable nature of most others. The parasitic family Braconidae is one of the largest families within the entire of the Hymenoptera, with some 40,000 species worldwide and nearly 1,200 in Britain. Some 529 species are currently known from Ireland of which nineteen are listed here as new to the island.

The authors state that this work is designed to eliminate the problems that result from the present scattered nature of identification and other literature and the absence of a modern list of the species occurring in Ireland. The catalogue lists not only the names, but also the recorded localities of each species. The two Irish braconids *Trioxys cursii* (Curtis) and *Leiphron apicalis* (Haliday), illustrated by John Curtis in his *British Entomology*, are reproduced here, also in colour.

This is undoubtedly a specialist work and it will most probably interest rather few general entomologists, perhaps fewer still outside Ireland. Nevertheless, it represents a positive step towards initiating the more detailed study of these interesting insects and should be supported by serious entomologists. Most lepidopterists will, at some stage, have reared braconids unintentionally from their prized larvae and it is hoped that these generally unwelcome arrivals in the breeding cage will be preserved, along with the remains of their host, for identification by specialists. A list of people willing to name such bred examples can be obtained from the reviewer.

Colin W. Plant

Identifying British insects and arachnids: an annotated bibliography of key works edited by **Peter C. Barnard**. 354 pp., 156 x 233 mm., hardbound, ISBN 0 521 63241 2. 1999. Cambridge University Press, The Edinburgh Building, Shaftesbury Road, Cambridge CB2 2RU. 1999. £50 (presumably postage extra – the book weighs 700 gms.).

Although published by CUP, this is, in reality, a Natural History Museum publication, with each section prepared by the relevant expert staff and the whole skilfully moulded into a single work by Peter Barnard, who is Head of the UK Biodiversity Programme in the museum's Entomology Department. It is one of those "everything you always wanted to know about X but were afraid to ask" books and will surely be welcomed by a broad spectrum of entomologists, both amateur and professional. Over two thousand key references to checklists, identification guides and distribution works are presented in taxonomically arranged sections that cover the entire of the British insect fauna (including the Apterygota), as well as the Arachnida. An extremely helpful introductory chapter entitled Sources of information provides a fascinating overview and tells the layman how to understand references, how to go about finding them and obtaining copies, how to find out-of-print books and much more besides. In the reference section, almost every entry has a comment in bold type which tells the reader the main reason for its inclusion and gives a hint of its usefulness.

References have been included up to the end of 1997, and some from early 1998 are also incorporated, making a 1999 publication about as up to date as anyone could reasonably expect it to be. The introductory chapters state, quite properly, that in a work of this size there are bound to be some errors and omissions, and invite comments and additions from readers. Though this is an inevitability, it is also, surely, an open invitation to a reviewer who has published works which he might expect to be included? It affords me a wonderful opportunity to check!

I had initially thought that my book *Larger Moths of the London Area* (1993) was missing from section on Lepidoptera distribution, given on pages 149-151. However, the "small print" at the head of that section does in fact make it clear that works which only cover macros, micros or butterflies are listed later under the appropriate section. My error, of course, but two references to works by me which update said book, do appear in this section (presumably because they also include micro records), and are stated to "provide an update to Plant 1993"; the fact that Plant 1993 does not appear in the list here is frustrating and confusing. The work is eventually found on page 167, under the section on macrolepidoptera distribution, where subsequent updates in *The London Naturalis*t are stated to exist, but are not cited and not cross-referenced. Seems a bit topsy-turvy to me. My book *Butterflies of the London Area* (1987) is surprisingly absent from the appropriate section on page 169.

Interestingly, the addition of *Stigmus pendulus* to the British fauna by Allen (*Ent. Gaz.* **38**: 214) is noted in the section on Hymenoptera: Sphecidae, but Allen's later paper (*Ent. Rec.* **109**: 58) in which a critical identification error in the earlier work is corrected, is curiously absent. On the basis that *Stigmus pendulus* warrants mention, the absence of reference to my own addition of the hoverfly *Sphaerophoria bankowski* (Goeldlin de Tiefenau) to the British fauna (*Dipterists Digest* **3**: 32-33) is curious, as is the total omission from the appropriate list of any of the multitude of important contributions to the literature on the Syrphidae made by Martin Speight.

In some of the larger groups of insects, the number of references might perhaps be a bit off-putting to the beginner and in a few cases the comments are less than helpful. One wonders, for example, if presented with a bethylid wasp, whether one should use Perkins 1976 or Richards 1939 – both stated to contain keys to British species. The references are placed in the conventional alphabetic order so that their sequence here is no guide. Common sense suggests

that the later publication is likely to be more up to date, but the beginner might wonder why the earlier work has not been excluded if it is fully superseded. It is not clear in this particular case if this is so; perhaps it is not, since in the section on Neuroptera Fraser (1959) is annotated with the comment "no longer recommended" and Killington (1936-37) with "out of date, but still useful".

These shortcomings are relatively minor, however, and overall the book is an extremely valuable contribution to the entomological literature. In particular, it should find favour amongst anyone who is striving to encourage the study of entomology amongst beginners, especially younger people, since it is now possible to look in a single volume to locate information on the identification and distribution of any British insect. The price is a bit steep, and in consideration of the importance that the Government allegedly attaches to Biodiversity one might have expected such an important work to be subsidised, but nevertheless this is a book that I will expect to be able to find in all of the better libraries and certainly in those of all universities that offer any form of biology-related course.

Colin W. Plant

Barevný atlas housenek Střední Evropy: Noční motyli (The colour guide to caterpillars of Central Europe: moths) by **Jan Macek and Václav Červenka.** xv plus 84 pp., 37 colour plates with 296 photographs, bilingual text (English and Czech). 240 x 170 mm., hardbound, ISBN 80 238 3768 0. Published by the authors, 1999. Sole distributors – Apollo Books, Kirkeby Sand 19, DK-5771 Stenstrup, Denmark. 280 Danish Krone plus postage.

Close on the heels of Jim Porter's *Colour identification guide to caterpillars of the British Isles* (Viking, 1997) comes this latest contribution to the identification of macrolepidoptera larvae. The English version of the Preface states that " ... this publication will be issued as a series of volumes, each of which will list only the species not dealt with in the preceding volumes. Each volume should cover 250-300 species ...". It is odd that this Preface occupies only half the space of the Czech equivalent; even with my very limited knowledge of Czech I can see a number of discrepancies – including the publication date of Porter's book, which is given as 1998 in the Czech text and 1997 in the English version, and which makes me wonder if the first three paragraphs in particular have been summarised).

The format is very broadly similar to that in Jim's book, with a separate text section first, followed by a colour plate section in which several separate photographs are reproduced on each page. Indeed, the authors express the desire that the two works should be complementary (somewhat unfortunately translated as a desire that this book should be a "supplement" to Porter's). The photographs are somewhat larger than those in the British book measuring 45 mm tall by 65 mm wide (in "Porter" they are 34 x 52 mm), but this slightly improved image, which I rather like, has, perhaps, been achieved at the expense of the omission of many species. The families covered number nine (though both versions of the Preface list only eight) and these are, in order of presentation, Lasiocampidae, Saturniidae, Lemoniidae, Sphingidae, Notodontidae, Noctuidae, Pantheidae, Lymantriidae and Arctiidae; representing these nine families are only 260 (authors' figure) species. Perhaps those included were selected to show more of the range of forms than to provide a comprehensive identification guide, or perhaps choice was based upon availability, but either way I would have preferred to have a volume that dealt with a taxonomically coherent section in a more comprehensive manner. Missing species may well soon be covered in subsequent volumes, but is this not likely to give me a problem of locating a particular species?

A key to families (and some genera) of species is presented and the text section has sub-headings which include Range, Flight period, Larval period, Food plant, Habitat and Biology. Identification appears to rely totally on matching beast with picture; the brief but helpful

descriptive text to be found in Porter's book is absent from the present work. This I find worrying, simply because I know from personal experience that, very often, having spotted the apparently correct picture, reference to key diagnostic features in the text has made me search the plates again! On the other hand, three of the "Extinct and irregular immigrant species" that were not figured in Porter's book are figured here – *Lithophane lamda* Fabr., *Acronicta auricoma* D.& S. and *Periphanes delphinii* L. – along with several non-British species, some of which, conceivably, could perhaps turn up here over if climate warming takes place. Too much comparison with the existing British tome is both unwise and unfair, of course, but this book is far more likely to appeal to the ever growing band of lepidopterists who, like the reviewer, study or collect moths in Europe than it is to those who stay at home.

Colin W. Plant

Handbook of Palaearctic macrolepidoptera. Volume 1: Sesiidae – clearwing moths by Karel Špatenka, Oleg Gorbunov, Zděnek Laštůvka, Ivo Toševski and Yutaka Arita. xvi plus 576 pp., 489 colour illustrations, 504 line drawings (of which 494 depict genitalia), distribution maps for all species. 198 x 271 mm, hardbound, ISBN 0 906802 08 3. Gem Publishing Company, 1999. Available from Gem at Brightwood, Brightwell-cum-Sotwell, Wallingford, Oxfordshire OX10 0QD at £120 plus £5 UK post and packaging (£10 overseas).

This *magnum opus* is the first in a new series, intended to replace the now largely out-dated work by Seitz on Palaearctic macrolepidoptera, which was produced between 1904 and 1954. The new series is fortunate in having, as its Managing Editor, Clas M. Naumann – one of Europe's leading lepidopterists, and is to be published in single volumes devoted to major groups (superfamilies, families or, occasionally, smaller groups). All manuscripts are to be refereed by at least two independent referees before publication. We are not told how many volumes will be involved in total, nor are we given a projected frequency of occurrence, though it is stated in the Editorial Preface that "Those taxa that have suffered from a history of over-splitting and with little emphasis on critical revision, and that lack competent modern specialists are unlikely to be treated . . . in the very near future". The rear dustcover indicates that volumes on Papilionidae, Hesperiidae, Saturniidae, Brahmaeidae, Lemoniidae and Zygaenidae: Zygaeninae are in preparation whilst coverage of the Noctuidae is flagged as a priority.

This first volume covers the clearwings presently known from the Palaearctic Region; these seem to vary in number from 309 on the inside front of the dust-jacket and in the sales literature to 317 in the text on distribution on page 11 (I count 317 in the synonymic checklist on pages 17-21; the sales blurb also states that there are 487 colour illustrations, whereas in my copy they are numbered from 1 to 489 – and I really can't be bothered to check if the sequence is entire). No new species are brought forward by this work and there is no taxonomic revision; the sequence and nomenclature used are justified in the introductory section. An identification key is presented, before the species accounts, to the 26 European genera and within each text section the Palaearctic species are keyed for each genus. The exception to this is within genus *Bembecia* Hübner, which is particularly species-rich and is, therefore, split into regional subsets. After a brief, but very useful, introductory section, which includes a potentially most helpful table of host-plants, the genera and species are treated in a most comprehensivemanner. I have freely to confess that the bulk of the species in this book are quite unknown to me, though that in itself makes the work a fascinating read. Selecting, therefore, a species that is of particular personal interest, *Synanthedon myopaeformis* (Borkhausen), I discover text occupying two pages and subdivided into sections covering synonymy, literature, diagnosis, variation, male genitalia, female genitalia, differential diagnosis [similar species], bionomics, habitat and distribution, the latter including a map; this appears to be a standard treatment for

all the species apart from those so poorly known that there is actually rather little to say about them. Within the section on diagnosis, reference is made to the appropriate plate (which in this particular case includes three separate figures), but unfortunately there is no reference on the colour plate page to the appropriate text page (a considerable failing of the first volume of *British Tortricoid moths* that was put right in the second volume). There is a similar failure to back-reference the genitalia drawings. I hope that the editorial board will take note of this for future volumes. The colour plates are masterful depictions of most of the species in watercolour, very well-reproduced and apparently accurate.

Whilst many distribution maps are clear to understand, there is a lack of uniformity which makes some of them difficult to interpret. Thus, for *S. myopaeformis*, there is a map incorporating that region of the Palaearctic from Spain to the Caspian Sea and which is easy to understand, whilst for *S. scoliaeformis* (Borkhausen) we have a map stretching from western Africa to Japan. However, for *Bembecia vidua* (Staudinger), as an example, the map box contains half a dozen enclosed areas (presumably water bodies) that could almost be anywhere, and no national or marine boundaries. This map contains only a single dot, and the text explains that the moth is only known from the type-locality (Uzbekistan) and from Kyrgyzstan (which I judge to be two localities in total), and I wonder why it is that this dot could not have been placed on a map that had at least one easily-recognised geographical feature that would indicate where in the Palaearctic it is supposed to be!

In a work of this size and complexity there will inevitably be errors of the type that I have picked on above, particularly so, perhaps, in the first volume of the series. Hopefully, all will be taken into account during the preparation of future volumes. In the meantime, it can be said that none really detract from the overall importance and usefulness of the work and in areas where errors might be important I can find none. This is a volume in a series that is certain to become the standard work on Palaearctic macro moths and, since it includes all of the British and Western European species, will be of great interest to readers of this journal whose interest in moths is serious. The price is high, though it is justified by what you get for it, and I strongly recommend that you start collecting the series now since the future cost of obtaining missed volumes could become enormous!

Colin W. Plant

Use of e-mail addresses in this journal

The editorial policy of this journal decrees that all authors are equal. Thus, prefixes such as Dr, Prof., Sir and suffixes such as Ph.D. or B.Sc are not permitted and the referees judge papers on their content and not on the reputation of their author(s). All authors must also include their postal address, though telephone numbers are not permitted.

Recently, several contributors have asked if they can include an e-mail as a part of their contact address. Having considered this carefully, I have concluded that even though not everyone has an e-mail address, publishing such addresses would not in any way be unfair to those people who do not have one, provided that they are supplied in addition to a postal address and not in its stead. Unlike telephone calls, which can become a nuisance, e-mails may be ignored by their recipients in the same way as postal communications may be so treated. Therefore, from this volume of the journal forward, authors of all contributions may, if they wish, include a single e-mail address after their postal address if they so wish.

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Book Review

THE ENTOMOLOGIST'S RECORD

AND JOURNAL OF VARIATION

(Founded by J.W. TUTT on 15th April 1890)

Contents

Notes and observations

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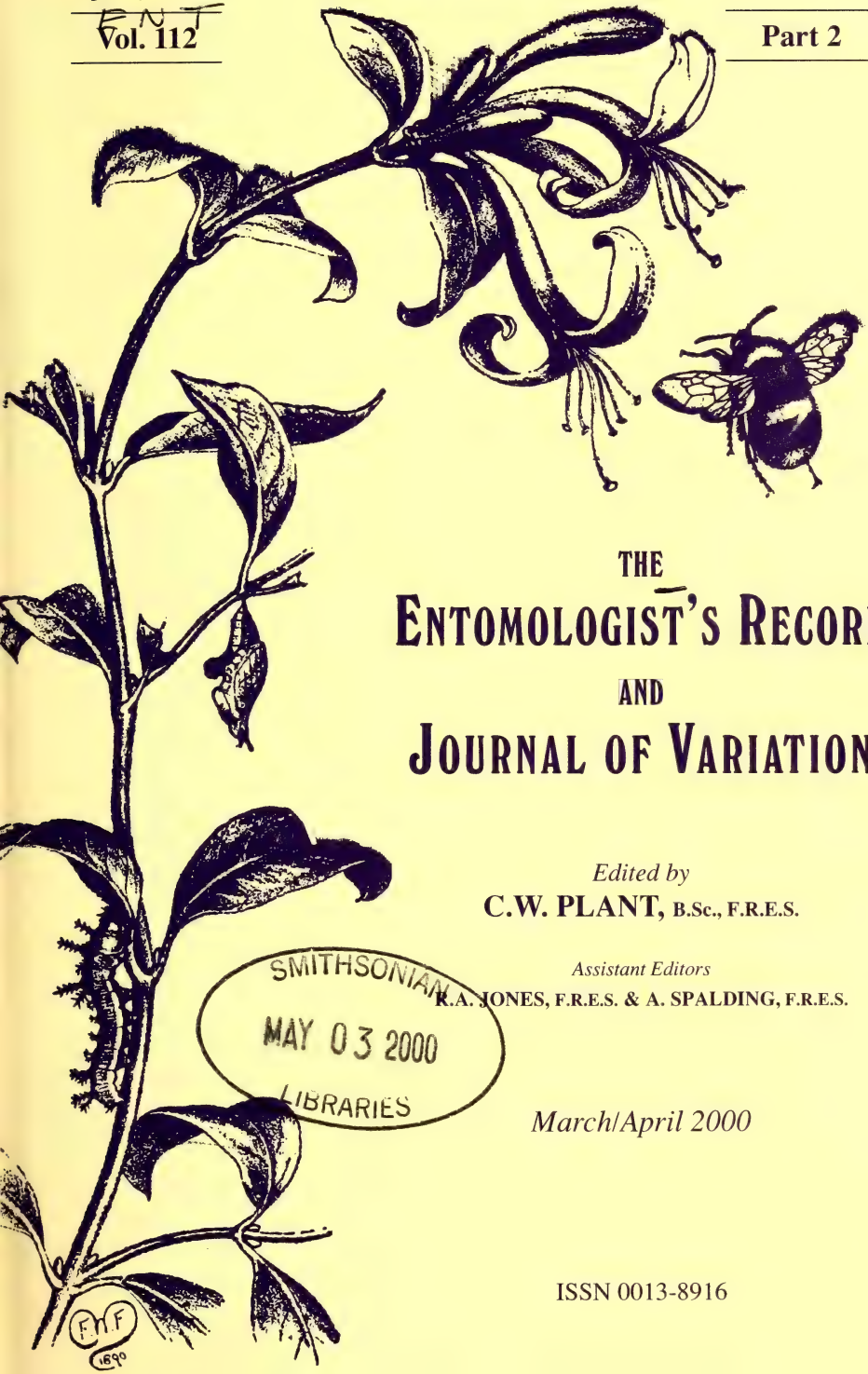

THE ENTOMOLOGIST'S RECORD AND JOURNAL OF VARIATION

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All authors should refer to this issue as a guide, particularly with regard to the format of dates, lists of references and lists of species. Names of British Lepidoptera should follow Bradley, J.D. (1998. *A checklist of Lepidoptera recorded from the British Isles*) and authors of species names should be given at the first mention. A full list of instructions may be obtained by sending a stamped addressed envelope marked "Ent. Rec. Guidelines" to the Editor.

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NATIONAL MOTH NIGHT

SATURDAY 23 SEPTEMBER 2000

The *Entomologist's Record* is pleased to lend its support to this new national event which is organised by *Insect Line* and *Atropos*. In fixing the date for the 2000 night well in advance, the organisers hope to encourage greater participation from nature reserves, country parks, moth groups and the like.

The event is not solely about moth recording - though this is an important part. The main aim is to introduce moths to people who do not yet appreciate how fascinating and attractive these insects are, thus increasing awareness and concern for the group. Organised events provide an ideal forum to do this.

The late date selected for the event during 2000 has been specifically chosen to be ideal for such organised events. Darkness arrives much earlier and so younger members of the community are better able to participate. Some attractive autumn moths are likely to be on the wing and, of course, there is always the possibility of immigrants turning up.

Readers of this journal are invited to participate either by organising an event, or by providing equipment and/or expert advice at an event organised by a local group. To publicise any event open to the public, there is a National Moth Night information line which will be operational from April 2000. The number is 09068 446862 and calls cost 60 pence per minute. The proceeds from this service will be donated to various moth conservation projects and applications for funds are welcomed by the organisers.

To get your event listed on the information line leave details on the Insect Hotline on 01565 722928 or send an e-mail to Phill@allostock.u-net.com.

A number of prizes will be awarded under the following categories:

Most notable record of a resident macro-moth (record must be formally accepted by the appropriate county Recorder);

Rarest migrant species recorded (record must be formally accepted by the appropriate county Recorder);

Most unusual location trapped at (photographic evidence required).

Further details are available from the organisers at National Moth Night, 36 Tinker Lane, Meltham, Huddersfield HD7 3EX.

THE IMMIGRATION OF LEPIDOPTERA TO THE BRITISH ISLES IN 1997

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THE INCREASE OF immigrant records experienced in 1995 and 1996 was dramatically halted in 1997 with many of the regular species including Painted Lady *Vanessa cardui* (Linnaeus), Silver Y *Autographa gamma* (Linnaeus) and *Nomophila noctuella* ([Denis & Schiffermüller]) appearing to be quite scarce. Even the congenial weather of the latter half of the year failed to encourage those immigrants which did arrive to proliferate. Still, every cloud has a silver lining and notable records in 1997 included the second British record of the twentieth century of the Black Collar *Ochropleura flammatra* ([Denis & Schiffermüller]), from Shetland in June, and the only recent example of the pyralid *Chrysocrambus linetella* (Fabricius), taken in West Sussex in June. There are only two other probable British specimens of this latter species and these are housed in the collections of the Natural History Museum. Both are labelled Deal, Kent, 1879. Other rarities were the sixth and seventh British records of Radford's Flame Shoulder *Ochropleura leucogaster* (Freyer), from the Isles of Scilly in the autumn, and one of the few immigrant examples of the Lunar Double-stripe *Minucia lunaris* ([Denis & Schiffermüller]) since the demise of the species as a resident in 1958.

Finally, the small cluster of records in late September and October of the Pale-lemon Sallow *Xanthia ocellaris* (Borkhausen) in localities where it is not known to be resident is especially interesting. This distinctly local species is mainly resident along parts of the Thames Estuary and also in scattered localities in East Anglia. Until now it has not been considered to be an immigrant or vagrant species, but these latest sightings, which were mainly from sites near or on the coast, strongly suggest immigration from abroad. It is worth mentioning that it is unlikely such an hypothesis would have been reached on the evidence of just one or two sightings and so the importance of receiving records from the widest range of sites is emphasised.

In the hope of aiding the compilation of the immigration reports for future years and enabling a quicker publication it is requested that records should be stated clearly with as full details as possible and ideally the Watsonian vice-county should be given. If it is not possible to give the vice-county, a six figure grid-reference would aid the placing of the record within a vice-county at the compilation stage. The dates given for the records should be the day of the sighting, or if from a light trap it should be the date of the evening that the trap was operated. If the date given with the records is for the following morning, this should be stated clearly so that the records could be suitably amended to ensure a consistent approach.

The species listed in the annexes are laid out following Bradley (1998). Several records were supplied by more than one contributor and it is possible that some duplication of records has occurred, although every effort was made to eliminate this. Little attempt has been made to interpret locality data and it is possible that the

same site is occasionally treated by different names. Records placed in square brackets either require confirmation or are known to be releases. The abbreviations listed below are used in Annex 1.

Abbreviations

E	Exotic introduction/escape
I	Primary immigrants
In	Introduction
R	Resident
R(t)	Temporary resident
V	Vagrant/wanderer

ANNEX 1: RECORDS OF "SCARCER" SPECIES

TINEIDAE

***Monopis monachella* (Hübner) [I?]**
EAST SUFFOLK (25): Minsmere, 30.7 (Anderson & Wilson 1998); SOUTH-EAST YORKSHIRE (61): Spurn Bird Observatory, 14.8 (Spence 1998).

CHOREUTIDAE

***Tebenna micalis* (Mann) [I/R(t)]**
SOUTH DEVON (3): Abbotskerswell, 16.9 - pupa (Henwood 1998); Ernesettle, 17.8 - 3 larvae on *Pulicaria dysenterica* (RJH); Marsh Mills, 30.8 (RJH); Wembury, 23.8 - 4 larvae on *Pulicaria dysenterica* (RJH); WEST SUSSEX (13): Atherington, 22.8 (MSP & JEC).

OECOPHORIDAE

***Ethmia bipunctella* (Fabricius) [I?/V?]**
NORTH ESSEX (19): Stour Wood, 1.8 (M. Shardlow per BG).

TORTRICIDAE

***Adoxophyes orana* (Fischer von Röslerstamm) [I?]**
SOUTH-EAST YORKSHIRE (61): Spurn Bird Observatory, 19.8 (Spence 1998).

***Epiblema grandaevana* (Lienig & Zeller) [I?]**
SOUTH-EAST YORKSHIRE (61): Spurn Bird Observatory, 9.6 (Spence 1998).

PYRALIDAE

***Euchromius ocellea* (Haworth) [I]**
ISLE OF WIGHT (10): Freshwater, 7.3 (Knill-Jones 1998b) (as 11.3 in Goater (1998)); SOUTH HAMPSHIRE (11): Christchurch, 8.3 (Goater 1998).

***Catoptria margaritella* ([Denis & Schiffermüller]) [I?]**
DORSET (9): Portland Bird Observatory, 26.7 (Cade 1998).

***Chrysocrambus linetella* (Fabricius) [I]**
EAST SUSSEX (14): Littlehampton, 8.6 (REP per CRP, conf. MSP).

***Thisanotia chrysonuchella* (Scopoli) [I?]**
SOUTH-EAST YORKSHIRE (61): Spurn Bird Observatory, 7.6 (Spence 1998).

***Pediasia fascelinella* (Hübner) [I?]**
EAST KENT (15): Dungeness, 5.6 (SPC).

***Platytes alpinella* (Hübner) [I?]**
DORSET (9): Portland Bird Observatory, 6.8 to 20.8 - 4 (Cade 1998); NORTH ESSEX (19): Saffron Walden, 7.8 (Emmet 1998); SOUTH-WEST YORKSHIRE (63): Rossington, 2.8 to 8.8 - 4 (Heppenstall 1998).

***Platytes cerussella* ([Denis & Schiffermüller]) [I?]**
SOUTH-EAST YORKSHIRE (61): Spurn Bird Observatory, 9.6 - 4 (Spence 1998).

***Ancylolomia tentaculella* (Hübner) [I]**
CHANNEL ISLANDS (113): La Broderie, 12.8 (PC per Austin (1998a)).

***Evergestis limbata* (Linnaeus) [I/R(t)]**
DORSET (9): Swanage, 22.7 (R. Cox per Anon (1998a)); ISLE OF WIGHT (10): B)nchurch, 16.6 (J. Halsey per Knill-Jones (1998b)); WEST SUSSEX (13): Portslade, 29.6 - 1 female (A. Cronin, BFS, CRP & MSP).

***Evergestis extimalis* (Scopoli) [I?]**
Note: Possible immigrant examples only.
WEST CORNWALL (1): St Agnes, Isles of Scilly, 11.6 (MEH); DORSET (9): Portland Bird Observatory, 27.8 (Cade 1998).

***Loxostege sticticalis* (Linnaeus) [I]**
WEST CORNWALL (1): St Agnes, Isles of Scilly, 17.9; 21.9 (MEH); SOUTH SOMERSET (5): Staplegrove, Taunton, 17.8 (J. McGill); WEST SUSSEX (13): Petworth, 8.8 (JTR per CRP); Walberton, 9.8; 10.8 (JTR per CRP); EAST SUSSEX (14): Cow Gap, Eastbourne, 13.9 (Dr M.W. Harper & MSP); Rye Harbour, 6.8 (PP per CRP); 12.8 (DJF per CRP); Rye, 8.8 - 2 (per DJF per CRP); EAST KENT (15): Dungeness, 8.8 (Clancy & Walker 1998); Dymchurch, 5.6; 9.7 (JO); SURREY (17): Lingfield, 8.8 (JHC); SOUTH ESSEX (18): Bradwell-on-Sea, 6.8 to 10.8 - 5 (inc 7.8 - 2) (Dewick 1998); Maldon, 10.8 (S.D. Wood per BG); NORTH ESSEX (19): Saffron Walden, 15.8 (Emmet 1998); EAST NORFOLK (27): Hainford, 9.8 (Hipperson 1997); WEST NORFOLK (28): Docking, 1.9 (R. Skeen per Hipperson (1998)); Morston, 16.8 (J. Clifton per Hipperson (1997)); CAMBRIDGESHIRE (29): Devil's Dyke, 15.7 (Dawson 1998); WEST GLOUCESTERSHIRE (34): Rodborough Common, 10.8 (D. Gibbs per RG); NORTH LINCOLNSHIRE (54): Gibraltar Point, 12.8 (Wilson, K. 1998); Glentham, 12.8 (C. Smith per RJ); Roughton Moor, 15.8 (JJ per RJ); ELGIN (95); The Shieling, Aviemore, 11.8 (GAC); EASTERNESS (96): Feshiebridge, 11.8 to 12.8 - 3 (McCormick 1998); SHETLAND ISLANDS (112): Baltasound, 14.7 (Penington 1998); Burrafirth, 15.7 (Penington 1998).
Summary: (1): 2; (5); 1; (13): 3; (14): 5; (15): 3; (17): 1; (18): 6; (19): 1; (27): 1; (28): 2; (29): 1; (34): 1; (54); 3; (95): 1; (96): 3; (112): 2.

***Sitochroa palealis* ([Denis & Schiffermüller]) [I?/R?/R(t)?]**
Note: Possible immigrant examples only.
WEST CORNWALL (1): St Agnes, Isles of Scilly, 15.7 (MEH); SOUTH DEVON (3): Chardstock, late 8 (A. Jenkins per McCormick (1998)); Slapton, 4.7 (RJH & BPH); NORTH SOMERSET (6): Goblin Combe, 22.7 (JPM); DORSET (9): Portland Bird Observatory, 12.7 to 27.7 - 8 (Cade 1998); ISLE OF WIGHT (10): no locality given, 29.6 (Knill-Jones 1998c); Tennyson Down, 29.7 - netted by day (SAKJ); NORTH HAMPSHIRE (12): Farnborough, 19.8 (RWP); EAST KENT (15): Dungeness, 7.7; 28.7 (DW per SPC); Littlestone, 23.7 (KR per SPC); Lydd, 7.8 (KR per SPC); New Romney, 2.8 (KR per SPC); SOUTH ESSEX (18): Foulness Island, 2.8 (DGD per BG); NORTH ESSEX (19): Dovercourt, 14.7 (CG per BG);

East Mersea, 15.7 (JF per BG); Kirby-le-Soken, 31.7 (PB per BG); WEST NORFOLK (27): Holkham NNR, 2.8 (MT per Hipperson (1997)); CHANNEL ISLANDS (113): Chouet, Guernsey, 16.7 (Austin 1998b).
Summary: (1): 1; (3): 2; (6): 1; (9): 8; (10): 2; (12): 1; (15): 5; (18): 1; (19): 3; (27): 1; (113): 1.

***Ostrinia nubilalis* (Hübner) [I?/R?/R(t)?]**
Note: Records outside Thames estuary only.
NORTH SOMERSET (6): Bridgewater, 12.10 - several larvae in stem of *Artemisia vulgaris* (RJH); DORSET (9): Portland Bird Observatory, 9.7; 10.7 (Cade 1998); Studland Heath, 7.9 (Cook 1998); ISLE OF WIGHT (10): Binstead, 3.7; 5.7 - 3; 6.7 (BJW); Freshwater, 10.6; 18.9 (SAKJ); SOUTH HAMPSHIRE (11): Brockenhurst, 2.9 (Goater 1998); EAST SUSSEX (14): Peacehaven, 6.6; 23.6; 7.7 - 2; 18.8; 19.8; 20.8 - 2; 30.8; 18.9; 24.9 (CRP); EAST KENT (15): Sandwich Bay, 6 - 5; 7 - 7; 8 - 1 (Game & Lycett 1998); SURREY (17): Lingfield, 4.9 (JHC); SOUTH ESSEX (18): North Chingford, 8 (B. Pateman per BG); Theydon Bois, 11.8 (J.G. Green per BG); Thundersley, undated (DGD per BG); NORTH ESSEX (19): Beaumont-cum-Moze, 14.7 (J.B. Fisher per BG); Dovercourt, 8 (CG per BG); Jaywick, undated (JY per BG); Kirby-le-Soken, undated (PB per BG); EAST NORFOLK (27): Eccles, 27.7; 1.8 (NB per Hipperson (1997)); EAST GLOUCESTERSHIRE (33):Hempstead, 4.10 (G.R. Avery per RG); SOUTH-EAST YORKSHIRE (61): Spurn Bird Observatory, 28.6 (Spence 1998); CHANNEL ISLANDS (113): L'Ancresse, Guernsey, 30.8 (Austin 1998b); La Broderie, Guernsey, 5.12 (PC per Austin (1998a)).
Summary: (11): 1; (14): 11; (15): 13; (17): 1; (18): 3; (19): 4; (27): 2; (33): 1; (61): 1; (113): 2.

***Maruca vitrata* (Fabricius) (= *testulalis* (Geyer)) [I?/E?]**
BUCKINGHAMSHIRE (24): Burnham, 30.8 (Anon 1998b).

***Diasemiopsis ramburialis* (Duponchel) [I]**
WEST CORNWALL (1): St. Agnes, Isles of Scilly, 18.9 (Hale & Hicks 1998); SOUTH DEVON (3): Plympton, 7.8 (RJH).

***Duponchelia fovealis* Zeller [I?]**
NORTH ESSEX (19): Kirby-le-Soken, 9 (PB per Goodey (1998)).

***Palpita unionalis* (Hübner) [I]**
WEST CORNWALL (1): Church Cove, 27.9; 15.10 (MT); Coverack, 19.10 - 2 (MT); St. Agnes, Isles of Scilly, 9.6 (Hale & Hicks 1998); 19.10 - 3; 22.10 - 3; 29.10; 30.10 - 2 (Hicks & Hale 1998) (no record given for 29.10 by MEH); Kynance Cove, The Lizard, 18.10 - 28 (Tunmore (1998c), includes a singleton nearby coll. by C.J. Wormwell per MT)); 19.10 - 3 (MT); The Lizard, 1.12 (Tunmore 1998e); Porthloo, St. Mary's, Isles of Scilly, 19.10; 22.10 - 5; 23.10 - 3 (JPM); SOUTH DEVON (3): Abbotskerswell, 17.8 (Henwood 1998); Exeter, 11.9 (P. Butter per McCormick (1998)); Tuckermarsh, Bere Alston, 28.9 (Bogue 1998); DORSET (9): Durlston Head, Swanage, 1.10 (JHC); Portland Bird Observatory, 17.8; 19.10 - 2 (Cade 1998); ISLE OF WIGHT (10): Freshwater, 11.6; 3.9; 4.9 - 2; 5.9 - 2; 6.9; 7.9; 15.9; 20.10; 25.11 (SAKJ); SOUTH HAMPSHIRE (11): Christchurch, 5.9 (Goater 1998); WEST SUSSEX (13): Walberton, 19.10 - 2; 15.11; 26.11 (JTR per CRP); EAST KENT (15): Densole, 3.9 (Rouse 1998); Dungeness, 17.10 - 2 (Rouse 1998); Greatstone, 24.8 (BB per SPC); Littlestone, 4.7; 20.8 (KR per SPC); Lydd, 22.8 (KR per SPC); Lydd-on-Sea, 17.10 (SPC); New Romney, 26.8 (KR per SPC); WEST KENT (16): Dartford, 14.11 (BKW); SOUTH ESSEX (18): Bradwell-on-Sea, 26.5; 29.9 (Dewick 1998) (the latter record given as 30.9 by BG); NORTH ESSEX (19): Dovercourt, 2.7 (CG per BG); MIDDLESEX (21): Hampstead, 24.9 (R.A. Softly); NORTH LINCOLNSHIRE (54): Gibraltar Point, 26.9 (Wilson, K. 1998); ISLE OF MAN (71): Dhoon Maughold, 31.10 - 2 (LK per GDC); CHANNEL ISLANDS (113): Le Chene, Guernsey, 17.8 (TNDP per Austin (1998a)); Le Gouffre, Guernsey, 28.9 (JB per Austin (1998a)).
Summary: (1): 55; (3): 3; (9): 4; (10): 11; (11): 1; (13): 4; (15); 9; (16); 1; (18); 2; (19); 1; (21): 1; (54); 1; (71): 2; (113); 2.

***Conobathra tumidana* ([Denis & Schiffermüller]) [I?]**
WEST SUSSEX (13): Walberton, 31.7; 26.8 (JTR per CRP); EAST KENT (15): Dungeness, 1.8 (Clancy & Walker 1998).

***Dioryctria abietella* ([Denis & Schiffermüller]) [I?]**
Note: Possible immigrant examples only.
DORSET (9): Portland Bird Observatory, 20.7 to 25.7 - 6 (Cade 1998) (inc. 23.7 - 4 (MC)); EAST SUSSEX (14): Rye Harbour, 19.7 to 12.8 - 11 (Funnell 1998); EAST KENT (15): Isle of Thanet, 19.7 to 14.8 - 12 (Solly 1998); SOUTH ESSEX (18): Ingatestone, 8.8 (GS per BG); NORTH ESSEX (19): Coggleshall, 2.8 (BG); Dovercourt, 8 (CG per BG); Earls Colne, 9.8 (D. Warner per BG); Jaywick, 10.8 - 25 (JY per BG); Langenhoe, 3.6 (H. Owen per BG); Mistley, 7.8 (I.C. Rose per BG); Saffron Walden, 8.8 (A.M. Emmet per BG); St Osyth, 11.8 - 16 (RWA per BG); SOUTH-EAST YORKSHIRE (61): Spurn Bird Observatory, 23.7 (Spence 1998); ISLE OF MAN (71): Calf of Man Bird Observatory, 10.8 (TB); CHANNEL ISLANDS (113): L'Ancresse, Guernsey, 18.7 (RA per Austin (1998a)).
Summary: (9): 6; (14): 11; (15): 12; (18): 1; (19): 49; (61): 1; (71): 1; (113): 1.

***Nephopterix angustella* (Hübner) [I?/V?]**
SOUTH DEVON (3): Plympton, 21.8 (RJH); DORSET (9): Portland Bird Observatory, 20.8 (Cade 1998).

***Ancylosis oblitella* (Zeller) [I?/R(t)?/R?]**
DORSET (9): Portland Bird Observatory, 17.8 to 10.9 - 5 (Cade 1998); WEST SUSSEX (13): Atherington, 15.8 (JEC, MSP & J. Radford); EAST SUSSEX (14): The Crumbles, Eastbourne, 25.8 - 2 (MSP); EAST KENT (15): Sandwich Bay, 11.9 (Game & Lycett 1998).

***Vitula edmandsii* (Packard) [I]**
SOUTH-EAST YORKSHIRE (61): Spurn, 8.8 (BRS & Beaumont (1998)).

***Vitula biviella* (Zeller) [I?]**
EAST KENT (15): Lydd, 13.7 - 1 male (KR per SPC, see also Parsons & Clancy (1999)).

PTEROPHORIDAE

[*Oxyptilus laetus* (Zeller) [I]
DORSET (9): Portland Bird Observatory, 12.8 (Cade 1998) (specimen not secured, per MC).]

PAPILIONIDAE

[The Swallowtail *Papilio machaon* Linnaeus [In/I?]
Note: Subspecies was not stated for the following records.
WEST SUSSEX (13): Church Norton, 24.6 (T. Wilson per CRP); [OXFORDSHIRE (23): Enstone, 7.6 (Hill 1997) (possible escape)]; CHANNEL ISLANDS (113): Candie Gardens, Guernsey, 19.5 (B. Russell per Austin (1998b)); La Pomare, Guernsey, 28.7; 23.8 (Mrs M. Burridge per Austin (1998b)); Le Neuf Chemin, Guernsey, 9.8 (T. Banks per Austin (1998b)); nr. Richmond Vazon, Guernsey, 21.7 (V. Cockett per Austin (1998b)); 5.8 (Mrs Smith per Austin (1998b)); Reservoir, Guernsey, 6.8 (J. Hooper per Austin (1998b)); 9.8 (D. Moore per Austin (1998b)); Rue des Madelaines, Guernsey, 7.8 (M. Leech per Austin (1998b)) (Some of the records from the Channel Islands could be the result of escapes from a butterfly farm).
Summary: (13): 1; [(23): 1]; (113): 9.

PIERIDAE

Clouded Yellow *Colias croceus* (Geoffroy) [I]
WEST CORNWALL (1): Isles of Scilly, 18.10; 26.10; 27.10 (Hill 1998); Land's End, 25.10 (Hill 1998); Marazion, 13.8 (DGD); Peninnis Head, Isles of Scilly, 19.10 (JPM); The Lizard,

25.10 (Hill, 1998); EAST CORNWALL (2): Par Beach, 16-17.8 (Hill 1998); CORNWALL: no locality given, 27.7 (Bowles 1997b); SOUTH DEVON (3): Berry Head, 5.9 (Hill 1998); Clearbrook, 25.8 (RJH); DORSET (9): no locality given, 8.3 (Bowles 1997a); no locality given, 11 - 15 (Bowles 1998); Durlston Coutnry Park, 10.9 (Hill 1998); Portland, 3.10 (Hill 1998); Portland Bird Observatory, 6 to 9 - 7 (Cade 1998); Southbourne Undercliff, 9 to 12.9; 1.11 - 15; 20.11 (Hill 1998); HAMPSHIRE/ISLE OF WIGHT: 100 to 170 sightings; estimated 3rd brood of approx. 200 (Barker 1998); ISLE OF WIGHT: no locality given, undated total = 18 (Barker 1998); no locality given, 18.10 (Hill 1998); SOUTH HAMPSHIRE (11): Dibden, 24.5 (GRE); Dibden Bay, 14.8; 26.9 to 4.10 - 10+; 1.10 - 26; 10.10 to 25.10 - 5 to 10; 26.10 to 1.11 - 1 to 2 (Barker 1998); Hengistbury Head, 17.9; 1.11 - 15; 3.11; 20.11 (Barker 1998); Romsey, 1.8 (Barker 1998); NORTH HAMPSHIRE (12): Ashford Hangers, 24.5 (Barker 1998); Wonston, 10.6 (Barker 1998); Overton Hill, 23.9 (Barker 1998); WEST SUSSEX (13): Adversane, late 7 (M. Smith per CRP); Arundel Park, 16.8 (JF^2 per CRP); Chantry Lane (Storrington), 1.6 (G. Stevens pers CRP); 24.8 (P. Whitcomb per CRP); Cissbury Ring, 12.8 (N. Hulme per CRP); Climping, 10.10 (S. Patton per CRP); Five Oaks (Billingshurst), 15.8 (S. Hamilton per CRP); Henfield, 17.10 (P. Rowland per CRP); Levin Down (Chichester), 1.8 (P. Brown per CRP); Littlehampton, 12.10 - 3 (per P. Hill per CRP); Pagham, 25.10 (T. Wilson per CRP); Portslade, 30.10 (JTR per CRP): Shoreham, 3.8 (per G. Hart per CRP); 12.10 (JF^2 per CRP); Steyning, 18.10 (P. Rowland per CRP); Thorney Island, 9.8; 12.8 (B. Collins per CRP); 27.10 (S. Hamilton per CRP); Verdley Wood (Fernhurst), 12.8 (A. Greenwood per CRP); West Hove golf course, 6.9 (T. Wilson per CRP); EAST SUSSEX (14): Beachy Head, 2.10 (per D. Dey per CRP); 27.9; 28.9; 6.10 (RC per CRP); 19.10 (J. Havers per CRP); 23.10 - 2 (G. Champion per CRP); 22.10; 25.10 - 6; 26.10 - 2; 29.10; 30.10 - 2; 31.10 - 2; 1.11; 2.11 (P. Wilson per CRP); Bevendean, 19.10 (G. Stevens per CRP); Castle Hill (Woodingdean), 21.8; 26.8 - 4 (A. Holden per CRP); Exceat, 12.10 - 2 (D. Rushen per CRP); 25.10 - 2 (T. Wilson per CRP); Hadlow Down, 7.8 (R. Penticost per CRP); Rye, 27.6 (DJF per CRP); Rye Harbour, 2.8; 8.8 (per DJF per CRP); Saltdean, 16.6 (JF^2 per CRP); Seaford Head, 21.9 (MSP); Willingdon, 1.9 (C. Clarkson-Webb per CRP); EAST KENT (15): Appledore, 9.8 (P. Burness per JM); Backsand & New Downs, Sandwich, 12.8 (D.M. Batchelor per JM); Dungeness, 20.7 (possibly the same as 21.7 given in Hill (1998)); 29.9; 18.10 (DW per JM); Kingston, Canterbury, 17.5 (K. Elks per JM); Lydden Down, 10.8 (K. Elks per JM); Sandwich Bay Bird Observatory, 24.5 (D.M. Batchelor per JM); 12.6 (Game & Lycett 1998); Sugarloaf Hill, 2.5 (P. Green per JM); WEST KENT (16): Bough Beech Causeway, Winkhurst Green, 9.9 (D.P. Goodban per JM); Cliffe, 21.8 (M.T. Jennings per JM); Horticultural Research International Farm, 25.9 (M. Easterbrook per JM); River Wall, 2.10 (A. Fray per JM); TQ7644, 2.8 (K. Derrett per JM); White Hill, Shoreham, 20.7 (P. Kirby & T. Steele per JM); SURREY (17): Great Bookham, 1.8 (DGD); SOUTH ESSEX (18): Dengie, 2.8 - 2 (GS per BG); Little Baddow, 9 - 3 (G.A. Pyman per BG); NORTH ESSEX (19): Colchester, 14.8 (N.M. Raynor per BG); Mistley, 16.8 - 3 (I.C. Rose per BG); EAST SUFFOLK (25): Languard Bird Observatory, 4.10 (Odin 1998); WEST SUFFOLK (26): Lakenheath, 13.6 (DGD); WEST NORFOLK (28): Holme, 3.8 (Hill 1998); NORFOLK: Sutton High Fen, 15.8 (Hill 1998); PEMBROKESHIRE (45): Skomer Island, 4.7 (NL); DERBYSHIRE (57): Friargate Station, 13.6 (KJO); Hilton NR, 12.8; 15.8 (W. Furse per KJO); Longendale Trail, 3.8 (D.P. Mallon per KO); Shirebrook, 9.6 (R.A. Frost per KJO); ISLE OF MAN (71): Dhoon Maughold, 5.9 - 2 (LK per GDC); CHANNEL ISLANDS (113): Fort Hommet, Guernsey, 18.5 (C. David per Austin (1998b)); Les Tielles, Guernsey, 2.6 (M. Austin per Austin (1998b)); Mont Herault, Guernsey, 24.9 (L. Thompson per Austin (1998b)).

Summary: (1): 7; (2): 1; Cornwall: 1; (3): 2; (9): 42; Hampshire/Isle of Wight: 200+; (10): 18+; (11): 63+; (12): 3; (13): 22; (14): 40; (17): 1; (18); 5; (19): 4; (25); 1; (26): 1; (28): 1; Norfolk: 1; (45): 1; (57): 5; (71): 2; (113): 3.

NYMPHALIDAE

Large Tortoiseshell *Nymphalis polychloros* (Linnaeus) [I]
EAST SUSSEX (14): St Leonard's, 9.3 - hibernating in a shed (E. Bruce per CRP); WEST KENT (16): Marshleyharbour Wood, Pembury, 1.4 (I.C. Beavis per JM).

Camberwell Beauty *Nymphalis antiopa* (Linnaeus) [I]
WEST CORNWALL (1): Looe Bar, 3 to 6.8 (R. Howard per Tunmore (1998e)); SOUTH DEVON (3): Kingskerswell, last week of 8 (P. Glenn per RFM); DORSET (9): no locality given, 4 (Bowles 1997a); Lodmoor, 21.9 (Hill 1998); ISLE OF WIGHT (10): no locality given, 30.9 (Bowles 1997c); Seaview, 19 to 27.9 (Taverner 1998a); SOUTH HAMPSHIRE (11): Hillier's Braishfield Arboretum, 16.4 (Taverner 1998a); NORTH HAMPSHIRE (12): Old Alresford, 9.8 (Taverner 1998a); SUSSEX: no locality given, 3 (Bowles 1997a); EAST KENT (15): Blean Woods, 10.3 (per S. Davis per JM); 4 (Hill 1997); Clowes Wood, Blean, 31.3 (S. Tilley per JM); Purr Wood, Crundale, 16.3 (per S. Davis per JM); SURREY (17): no locality given, 3 - 3 (Bowles 1997a), these record include: Waldringham, 11.3 (Hill 1997); 15km from Woldingham, 17.3 (Hill 1997); HERTFORDSHIRE (20): no locality given, 3 (Bowles 1997a); OXFORDSHIRE (23): no locality given, 3 (Bowles 1997a); EAST SUFFOLK (25): Trimley St. Mary, 17.3 (Iley 1997); WEST SUFFOLK (26): Grotton Wood (probably refers to Groton Wood), 15.3 (Hill 1997) (poss. same as previous record); SUFFOLK: no locality given, 4 (Bowles 1997a); NORFOLK: 3 seen in early 4 (Hill 1997) (includes following 2 records); WEST NORFOLK (28): Holkham, 6.4 (Hill 1997); Titchwell, 8.4 (Hill 1997); STAFFORDSHIRE (39): no locality given, 12.8 (Bowles 1997b); NOTTINGHAMSHIRE (56): Carlton, 11.3 (Hill 1997); DERBYSHIRE (57): no locality given, 4 (Bowles 1997a); SOUTH-WEST YORKSHIRE (63): Blackburn Meadows, nr. Rotherham, 10.3 (Hill 1997); NORTHUMBERLAND: no locality given, 8.3 (Bowles 1997a); CO. ANTRIM (H39): Belfast, 12.8 (Bowles 1997b).
Summary: (1): 1; (3): 1; (9): 2; (10): 2; (11): 1; (12): 1; Sussex: 1; (15): 4; (17): 3; (20): 1; (23): 1; (25): 1; (26): 1; Suffolk: 1; Norfolk: 3, including (28): 2; (39): 1; (56): 1; (57): 1; (63); 1, Northumberland: 1; .(H39): 1.

Queen of Spain Fritillary *Issoria lathonia* (Linnaeus) [I/R(t)?]
DORSET (9): Sandbanks, 29.7 (Wilson, R. 1998); SOUTH HAMPSHIRE (10): Martin Down, 2.8 (Taverner 1998b); KENT: Woodbridge, 6.8 (Wilson, R. 1998); EAST KENT (15): Lydden Down 9.8 (Wilson, R. 1998); North Foreland, Broadstairs, 30.7 (R. Hope per JM) (a record for this date is given as unconfirmed by Wilson, R. (1998)); NORTH ESSEX (19): Little Quay, 18.10 (G. Slater per BG); EAST SUFFOLK (25): Aldringham Walks/Thorpeness, undated - 12 (Wilson, R. 1998); Butley Creek, Orford, undated - 3 (Wilson 1998); Minsmere, 28.6 (Wilson, R. 1998); 4.7 - 2; 7.7; 19.7 - 2; 13.8; 18.10 (Anderson & Wilson 1998); Sizewell, 13.9; 22.9 (Hill 1998); Thorpeness, undated - a mating pair (Wilson, R. 1998); near Wangford, 17.9 - 2 (Anderson & Wilson 1998); no locality given, 4.8 (and for several days) (Bowles 1997b); no locality given, late 4; 7; 9; 10 (Bowles 1997c) (some or all may refer to previous records); CHANNEL ISLANDS (113): Sous L'Eglise, Guernsey, 31.4 (B. Kendall per Austin (1998b)).
Summary: (9): 1; (10): 1; Kent: 1; (15): 1(2?); (19): 1; (25): approx. 30; (113): 1.

The Monarch *Danaus plexippus* (Linnaeus) [I]
WEST CORNWALL (1): Borough Farm, Tresco 17.10 (G. Fellows) (probably the same as Tresco, 17.10 (Hill 1998)); Great Pool, Tresco, 10.10 (Hill 1998); SOUTH DEVON (3): Plym estuary, 1.10 (Hill 1998) (possibly the same as no locality given, 2.10 (Bowles 1997c)); Stoke Beach, Plymouth, 11.10 (Hill 1998); NORTH DEVON (4): Lundy Island, 4.10; 9.10 (Hill 1998); SOUTH SOMERSET (5): Minehead, 2.10 (Hill 1998); DORSET (9): Easton, Portland, 4.10 (Hill 1998); Portland, 13.10 (Hill 1998) (probably the same as Portland Bird Observatory, 13.10 (Cade 1998)); Weston, 16.10 (Hill 1998); Weymouth, 4.10 (MC & Hill 1998); no locality given, 11.10; 12.10 - a dead individual (Bowles 1997c); WEST SUSSEX (13): Littlehampton,

10.10 (Hill 1998); EAST SUSSEX (14): near Beachy Head, between Crowlink and Birling Gap, 13.9 at 1pm (flying east) (P. Whitcombe per CRP) (possibly the same as the one reported as 12.9 by Bowles (1997c)); near Beachy Head, at Shooter's Bottom, 29.9, flying east (B. Forbes per CRP); WEST KENT (16): Stone, Dartford, 6.10 (S. Clancy per JM); GLAMORGANSHIRE (41): Caswell, south Gower, 23.10 - 1 found floating in a pond (White 1998); Crymlyn Burrows (heading north from), 18.10 (K. Dupe per White (1998)); MERIONETHSHIRE (48): Llanabar, Barmouth, 2.10 (Jones 1998); KIRKCUDBRIGHTSHIRE (73): no locality given, 10.9 (Bowles 1997c); CO. CORK: Ballycotton 10.10 (Hill 1998) (probably the same as no locality given, 11.10 (Bowles 1997c)).
Summary: (1): 2; (3): 2; (4): 2; (5): 1; (9): 6(?); (13): 1; (14): 2; (16): 1; (41): 2; (48): 1; (73); 1; Co. Cork: 1.

LASIOCAMPIDAE

Pine-tee Lappet *Dendrolimus pini* (Linnaeus) [I]
CHANNEL ISLANDS (113): Le Chene, Guernsey, 4.8 (DJLA per Austin (1998a)).

DREPANIDAE

Dusky Hook-tip *Drepana curvatula* (Borkhausen) [I]
EAST KENT (15): Dungeness, 11.8 (Clancy & Walker 1998) (1 male, DW per SPC); SOUTH ESSEX (18): Bradwell-on-Sea, 6.8 (AJD per Dewick (1999)).

GEOMETRIDAE

Sub-angled Wave *Scopula nigropunctata* (Hufnagel) [I]
EAST KENT (15): Dymchurch, 9.8. (JO).

Tawny Wave *Scopula rubiginata* (Hufnagel) [I]
Note: Probable immigrant examples only.
NORTH ESSEX (19): Copperas Wood, 7.8 (P. Smith per BG); Stour Wood, 1.8 (M. Shardlow & P. Smith per BG); EAST SUFFOLK (25): Ipswich, undated - 2; 20.8 (T. Prichard).

Bright Wave *Idaea ochrata* (Scopoli) [I?]
CHANNEL ISLANDS (113): La Broderie, Guernsey, 15.8 (PC per Austin (1998b)).

Portland Ribbon Wave *Idaea degeneraria* (Hübner) [I?]
ISLE OF WIGHT (10): Freshwater, 11.8 (Knill-Jones 1998b); CHANNEL ISLANDS (113): Le Coin, Guernsey, 24.8 (JB per Austin (1998b)).

The Vestal *Rhodometra sacraria* (Linnaeus) [I]
WEST CORNWALL (1): Church Cove, 17.9; 18.9 (MT); Coverack, 17.10; 18.10 (MT); Kynance, 18.9 (MT); St. Agnes, Isles of Scilly, 10.8 - 4 (Hicks & Hale 1998); 16.8; 17.9; 18.9; 21.9; 1.10; 4.10; 10.10; 19.10 (MEH); autumn - 5 (Tunmore 1998e); The Lizard, 18.10 (Tunmore 1998c); The Lizard, end 9 - few (MT per Waring (1997d)) (probably includes some of preceding records); EAST CORNWALL (2): Kilkhampton, 22.9 (GEH); SOUTH DEVON (3): Abbotskerswell, 13.8; 3.9; 18.9; 6.11 (BPH); Plympton, 18.8 (RJH); Teignmouth, 19.10 (RFM); NORTH SOMERSET (6): Tyning, Timsbury, 27.9 (M. Bailey per Barnett, Edmonson & Evans (1997b)); SOUTH WILTSHIRE (8): Bullen Hill Farm, Ashton Common, 25.9 - 3; 29.9 (E.G. & M.H. Smith); DORSET (9): Portland Bird Observatory, 12.8 to 23.9 - 4 (Cade 1998); ISLE OF WIGHT (10): Binstead 19.9; 4.10; 17.10 (BJW); Freshwater, 16.8 (Knill-Jones 1998d); no locality given, undated - 4 (Knill-Jones 1998c) (probably refers to preceding records); SOUTH HAMPSHIRE (11): Bitterne, 19.9 (Goater 1998); Brockenhurst, 20.9 (Goater 1998); Sparsholt, 30.9 (RB); Woolston, 26.9 (Goater 1998); NORTH HAMPSHIRE (12): Farnborough, 21.8 (RWP); Selborne, 16.8 (AA); WEST SUSSEX (13): Walberton, 19.8;

21.9; 24.9; 28.9; 30.9; 6.10; 7.10 (JTR per CRP); EAST KENT (15): Kingsgate, 8.8 - 2 (Solly 1998); Lydd, 31.8 (KR per SPC); New Romney, 2.9 (SPC); CHANNEL ISLANDS (113): La Broderie, Guernsey, 17.9; 26.9 (PC per Austin (1998a)) (as 18.9 & 27.9 in Austin (1998b)); Le Chene, Guernsey, 11.6; 22.8; 26.8 (TNDP per Austin (1998a)); St Martin's, Guernsey, 17.8 (WA per Austin (1998b)).
Summary: (1): approx. 22; (2): 1; (3): 6; (6): 1; (8): 4; (9): 4; (10): 4; (11): 4; (12): 2; (13): 7; (15): 4; (113): 6.

The Gem *Orthonama obstipata* (Fabricius) [I]
WEST CORNWALL (1): Church Cove, 16.9; 27.9; 15.10 - 2; 19.10; 4.11; 6.11 - 5; 10.11; 11.11 - 5; 19.11; 26.11 - 8; 28.11; 30.11 (MT); Coverack, 5.10 (DB); 5.10 (possibly same as previous record); 17.10 (MT); Kynance, 18.10 - 2; 19.10 (MT); St. Agnes, Isles of Scilly, 14.8; 21.9 - 4; 24.9; 1.10 - 2; 4.10; 17.10; 31.10; 25.11; 26.11 - 5 (MEH); 24.10 - 4; 29.10; 30.10 (Hicks & Hale 1998); Porthloo, St. Mary's, Isles of Scilly, 17.10 - 2; 18.10; 22.10 - 4 (JPM); The Lizard, autumn - 28 (inc. 11 - 23 & 30.11) (Tunmore 1998e) (probably includes some of preceding records); The Lizard, 18.10 - 2 (Tunmore 1998c); SOUTH DEVON (3): Churston Court Farm (SX905564), 5.10; 26.11 (DSF per RFM); Exeter, undated (P. Butter per RFM); DORSET (9): Dawlish Warren, 1.8 (JPM); Portland Bird Observatory, 16.9 to 6.11 - 9 (Cade 1998); Studland, 19.10 - 2 (DB); ISLE OF WIGHT (10): Binstead, 28.8; 15.9; 20.9; 18.11; 19.11; 25.11; 26.11 - 2 (Goater 1998); (as 23.5; 28.9; 15.10; 20.10 (BJW)); Freshwater, 20.11; 25.11; 26.11; 27.11 - 2 (SAKJ); Hacketts Land, Branstone, 21.5 - 2; 25.11 (Goater 1998); no locality given, undated - 15 (Knill-Jones 1998c) (probably includes all of previous records); SOUTH HAMPSHIRE (11): Brockenhurst, 1.8 (Goater 1998); Linford, 2.9 (Goater 1998); Milkham Bottom, 6.9 (Goater 1998); Sparsholt, 16.5 (RB); NORTH HAMPSHIRE (12): Frith End, 14.6 (Goater 1998); Selborne, 25.8 - male; 26.8 - female; 27.11 - male (AA); WEST SUSSEX (13): Atherington, 16.11 - 1 female (MSP & JEC); Walberton, 17.5; 22.8; 23.8; 24.8 - 2; 27.8; 30.8 - 2; 3.9; 18.10; 16.11; 18.11 - 3; 19.11; 21.11; 23.11; 25.11; 26.11; 27.11; 28.11 - 2; 29.11 (JTR per CRP); EAST SUSSEX (14): Hastings, 16.8 (PT per CRP); Peacehaven, 17.8; 18.8; 19.8; 19.10; 27.11 - 2 (CRP): Rye Harbour, 18.5 (DJF per CRP); 17.8 (DJF & PP per CRP); 18.10 (as 2 in Funnell (1998)); 19.10 (PP per CRP); Rye Harbour, 20.11; 21.11; 22.11; 25.11 (PP per CRP); EAST KENT (15): Densole, 4.9 - 1 male; 24.9 - 1 female; 26.11 - 1 female (TR); Dungeness, 10.8 - 2 males (TR); 11.8 - 2 (Tunmore (1998a), also given as DW per SPC (possibly same as previous record); 30.8; 18.10 - 2 (DW per SPC); 16.9 (KR per SPC); 5.10 - 2 males; 17.10 - 1 female (TR); Folkestone Warren, 27.11 - 3 male (TR); Greatstone, 16.5 (Hill (1997), given as BB per SPC); 15.7; 19.8 (BB per SPC); Kingsdown, 11.7 (DB); Kingsgate, 22.8; 8.10 (Solly 1998); Littlestone, 15.5; 6.10 - 2 (KR per SPC); Lydd, 10.9; 11.9; 11.10 (KR per SPC); New Romney, 11.8; 21.8; 15.11 (SPC); Ramsgate, 17.8; 24.9; 26.9; 15.11 (Solly 1998); Sandwich Bay, 9 - 1 (Game & Lycett 1998); WEST KENT (16): Dartford, 19.9 (BKW); SURREY (17): Lingfield, 25.11 - 1 female; 28.11 - 1 female (JHC); SOUTH ESSEX (18): Bradwell-on-Sea, 24.9 to 27.11 - 12 (inc. 11 - 9) (Dewick 1998); 26.9 (DB); Maldon Memory Close, 6.6 (S.D. Wood per BG); NORTH ESSEX (19): Dovercourt, 27.9; 18.10 (CG per BG); Kirby-le-Soken, undated (PB per BG); St Osyth, 8.10 (RWA per BG); EAST SUFFOLK (25): Languard Bird Observatory, undated - 5 (Odin 1998); EAST NORFOLK (27): Lound, 25.11 (R. Murray per Hipperson (1998)); WEST NORFOLK (28): Holkham NNR, 9.8 (MT per Hipperson (1997)); EAST GLOUCESTERSHIRE (33): The Apiary (SO9424), 19.5 (R. Homan per RG); Cheltenham, undated (per RG) (possibly same as previous record); CHANNEL ISLANDS (113): L'Ancresse, Guernsey, 3.10 (RA per Austin (1998a)); La Broderie, Guernsey, 26.11 (PC per Austin (1998b)); Le Chene, Guernsey, 19.10 (TNDP per Austin (1998a)); St Martin's, Guernsey, 19.10 (WA per Austin (1998b)).
Summary: (1): approx. 61; (3): 3; (9): 12; (10): 16; (11): 4; (12): 4; (13): 24; (14): 15(or 16); (15): approx. 35; (16): 1; (17): 2; (18): 14; (19): 4; (25): 5; (27): 1; (28): 1; (33): 1(?2): (113): 4.

Rannoch Looper *Itame brunneata* (Thunberg) [I]
ISLE OF WIGHT (10): near Shalfleet, 18.6 (Waring 1997b); WEST NORFOLK (28): Docking, 12.6 (A. Pettigrew per Hipperson (1997)) (correctly given as 11.6 in Waring (1997b) and Anon (1998b)); Holkham NNR, 11.6 (MT per Hipperson (1997)).

Feathered Beauty *Peribatodes secundaria* ([Denis & Schiffermüller]) [I?]
NORTH ESSEX (19): Kirby-le-Soken, 27.7 (PB per Anon (1998b)).

Barred Red *Hylaea fasciaria* (Linnaeus) [I?]
DORSET (9): Portland Bird Observatory, 25.7 (Cade 1998); EAST SUSSEX (14): Houghton Green, Rye, 11.9 - 2 (inc. 1 ab. *prasinaria*) (GAC); EAST SUFFOLK (25): Languard Bird Observatory, undated - 2 (Odin 1998).

SPHINGIDAE

Convolvulus Hawk-moth *Agrius convolvuli* (Linnaeus) [I]
WEST CORNWALL (1): Church Cove, 6.9; 7.9; 11.9 (P. Sharpe per MT); 16.9 - 2; 29.9 (MT); Coverack, 6.10 (DB); Higher Moors, Isles of Scilly, 18.10 (JPM); Isles of Scilly, 9 - 5 or 6 per night (R. Edmonson per Barnett, Edmonson & Evans (1997a)); Kynance, 18.9 - 4; 19.10 (MT); Longrack, nr. Penzance, 9 (S. Barron per L. Rogers); Porthloo, St. Mary's, Isles of Scilly, 22.10 (JPM); St. Agnes, Isles of Scilly, 10.8 - 3 (Hicks & Hale 1998); 14.8 - 2; 16.8 - 3; 20.8 - 2; 22.8 - 4; 24.8 - 6; 1.9 - 5; 3.9 - 2; 4.9 - 5; 6.9 - 2; 8.9 - 2; 10.9 - 4; 13.9; 15.9; 18.9; 20.9 - 2; 21.9 - 7; 22.9 - 2; 23.9; 24.9; 30.9; 19.10 - 2 (MEH); The Lizard, autumn - 12 (Tunmore 1998e); EAST CORNWALL (2): Welcombe, 22.9 (GEH); SOUTH DEVON (3): Abbotskerswell, 27.8 (BPH); Churston Court Farm (SX905564), 3.9 (DSF per RFM); Dawlish Warren, 8.9 to 14.9 - larvae (I. Lakin per RFM); Plymouth, 15.9 (P.G. Sutton per RFM); Thorverton, 11.9 (K. Bailey per RFM); Winkleigh, nr. Okehampton, 16.9 (per RFM); DORSET (9): Abbotsbury, early 9 (G. Hibberd-Jones per MSP); Durlston Head, 24.8 (RB); 30.9 (GAC); Portland Bird Observatory, 8.8 to 23.9 - 25 (inc. 7.9 - 5) (Cade 1998); Studland, 19.10 (DB); ISLE OF WIGHT (10): Binstead 15.8; 22.8; 6.9 - 2; 18.9; 19.9; 18.10 (BJW); Freshwater, 18.9 (SAKJ); no locality given, undated - 20 (Knill-Jones 1998c) (presumably includes previously listed records); WEST SUSSEX (13): Hassocks, 2.10 (G. Jerry per CRP); Hove, 5.9 (per Booth Museum of Natural History per CRP); near Pagham Harbour, 31.8 (SP per CRP); Portslade 9.9 (per Booth Museum of Natural History per CRP); Southwick, 17.9 (C. Rhodes per CRP); Walberton, 30.8; 2.9; 10.9; 27.9 (JTR per CRP); EAST SUSSEX (14): Crowborough, 21.9 - 1 larva (MJS per CRP): Hastings, undated (Mr Joy per CRP); Pett Levels, 31.8 (PT per CRP); Ringmer, 25.8 - 2 larvae (Mrs Hoskin per CRP); Rye Harbour, 25.8 (DJF per CRP); 4.9; 9.9 (DJF & PP per CRP); EAST KENT (15): Densole, near Folkestone, 28.8 - 1 male; 7.10 - 1 male; 8.10 - 1 female (TR); Folkestone, 7.10 - 1 male (TR); Greatstone, 10.9 (BB per SPC); Kingsgate, 23.8; 5.9 - 3; 10.9; 14.10 (Solly 1998); Littlestone, 30.8 (KR per SPC); Lydd, 9.10 (KR per SPC); WEST KENT (16): Allhallows, 11.9 (Mrs G. Salmon per JM[2]); SOUTH ESSEX (18): Bradwell-on-Sea, 21.8 to 6.10 - 11 (inc. 6.9 - 2) (Dewick 1998) (given as a total of 13 by BG); 25.9 (DB); Ingatestone, 10 - 2 (GS per BG); NORTH ESSEX (19): Bulmer, 10.9 (D. Sears per BG); Clacton-on-Sea, 7.8 (I. Fox per BG); Debden Green, 7.8 (RM per BG); Dovercourt, 15.9 (CG per BG); Kirby-le-Soken, undated - 2 (PB per BG); Mashbury, 27.9 (M. Tarrant per BG); Mersea Island, 4.9 (D. Nicholls per BG); Stanway, 22.8 (N. Cuming per BG); MIDDLESEX (21): Bedfort, 29.9 (W.H. Chester per CWP); EAST SUFFOLK (25): Languard, 9 (Waring 1997c); EAST NORFOLK (27): Cromer, 14.8 (G. Lee per Hipperson (1997)); East Tuddenham, 5.9 (A. Bull per Hipperson (1997)); Eccles, 11.6; 27.9; 28.9; 30.9 (NB per Hipperson (1997)) (16.6 - 2 in Bowman (1998), no mention of 11.6 record); Hempstead, 11.9 (D. Russell per Hipperson (1997)); Sea Palling, 11.6 - 2 (Hill 1997); WEST NORFOLK (28): Hindringham, 31.8 (GS per Hipperson (1997)); Holkham NNR, 31.8; 1.9 (MT per Hipperson (1997)); Scolt Head Island, 8.8 (N. Lawton per Tunmore (1998a));

CAMBRIDGESHIRE (29): Trumpington, Cambridge, mid 6 - 1 brought in by a cat (per Dr. I. Kitching); WEST GLOUCESTERSHIRE (34): St Briavels, 29.8 (RG); CARMARTHENSHIRE (44): Betws, 15.9 (Morgan & Lucas 1997); Ffairfach, 1.9 (Morgan & Lucas 1997); PEMBROKESHIRE (45): Skomer Island, 27.9; 30.9 (NL); CAERNARVONSHIRE (49): Cors Bodgynydd, 9.8 (Waring 1997c); NORTH LINCOLNSHIRE (54): Dalby, 25.8 (Mrs M.E. Dawson per RJ); Gibraltar Point, 19.9; 24.9; 27.9 (Wilson, K. 1998); Roughton Moor, 30.8; 5.9 (JJ per RJ); NOTTINGHAMSHIRE (56): Cotgrave, 20.9 (M. Musgrove per SW); SOUTH-EAST YORKSHIRE (61): Spurn Bird Observatory, 10.8; 31.8; 9.9; 14.9 (Spence 1998); Filey Country Park, 9 (Waring 1997c); ISLE OF MAN (71): Calf of Man Bird Observatory, 3.9 (TB); Dhoon Maughold, 4.9 (LK per GDC); "THE BORDERS": no locality given, 9 - 2 (Waring 1997c); DUMFRIESSHIRE (72): 2 localities, details not given, 5.10 – 2 (Patterson 2000); WIGTOWNSHIRE (74): near Newton Stewart, 7.8 (A. Davis per Waring (1997c)); BERWICKSHIRE (81): Eyemouth, 5.10 – 3, to *Nicotiana* (Patterson 2000); MAIN ARGYLL (98): Oban, 8 or 9.9 (reported as *Agrius cingulata* but almost certainly refers to *A. convolvuli*) (per JM[2]); ORKNEY ISLANDS (111): 28.8 to 7.9 - 8 (Gould 1998); SHETLAND ISLANDS (112): 22.8 to 5.9 - almost 30, including 6 in one garden at North Roe and 4 within 50m of each other at Baltasound (Penington 1998); CHANNEL ISLANDS (113): L'Ancresse, Guernsey, 17.10 (RA per Austin (1998a)); La Broderie, Guernsey, 5.8 - 2; 7.8; 4.9; 7.9; 23.9; 24.9 (PC per Austin (1998a)) (as 6.8; 8.8; 5.9; 8.9; 24.9 & 25.9 in Austin (1998b)); Le Gouffre, Guernsey, 28.9 (JB per Austin (1998a)) .
Summary: (1): approx. 79; (2): 1; (3): 5 + larvae; (9): 29; (10): approx. 20; (13): 9; (14): 5 + 3 larvae; (15): 13; (16): 1; (18); 14; (19): 9; (21): 1; (25): 1; (27): 9; (28): 4; (29): 1; (34): 1; (44); 2; (45): 2; (49); 1; (54): 6; (56): 1; (61):5; (71): 2; (72): 2; The Borders: 2; (74): 1; (81): 3; (98): 1; (111): 8; (112): almost 30; (113): 9.

Death's-head Hawk-moth *Acherontia atropos* (Linnaeus) [I]
WEST SUSSEX (13): Littlehampton, early 9 - 1 pupa (R. Feist per CRP); NORTH ESSEX (19): Cressin Tye green, 9.6 - 1 pair in cop. (L. Wenlock per BG); Cutlers Green, 10 - 3 larvae (RM per BG); Wimbish, 10 - 1 larva (RM per BG); CHANNEL ISLANDS (113): La Broderie, Guernsey, 22.9 (PC per Austin (1998a)) (as 23.9 in Austin (1998b)).

Pine Hawk-moth *Hyloicus pinastri* (Linnaeus) [I?]
CHANNEL ISLANDS (113): La Broderie, Guernsey, 13.7 (PC per Austin (1998b)).

Humming-bird Hawk-moth *Macroglossum stellatarum* (Linnaeus) [I/R(t)?/R?]
WEST CORNWALL (1): Church Cove, 6.9; 8.9 (P. Sharpe per MT); 29.9 - 1 to light (MT); 10.10 (I. Reid per MT); Lizard village, 23.11 (Tunmore (1998e), C. Wills per MT); St Agnes, Isles of Scilly, 13.3; 20.3; 21.3; 29.3; 10.4; 5.5; 11.5; 25.7 - 2; 22.8; 25.8; 1.9; 2.9; 4.9 - 2; 5.9; 18.9; 26.9 (MEH); SOUTH DEVON (3): Buckfastleigh, 5.7 to 31.7 (J. Waters per RFM); Churston Court Farm (SX905564) (DSF per RFM); Honiton, 8.3 (P. Hurst per RFM); Plymouth, undated, (P.G. Sutton per RFM); Sampford Spinney, 7 (M. D'Oyly per RFM); Teignmouth, 21.10 (R. & L. Normand per RFM); SOUTH WILTSHIRE (8): Coombe Bisset Down, 31.7 (GRE); DORSET (9): Portland Bird Observatory, 6 to 10 - less than 20 (Cade 1998); ISLE OF WIGHT (10): Binstead 12.5; 23.5; 17.9 (BJW); Freshwater, 20.3 (Knill-Jones 1998a); Wooton, 12.5 (Hill 1997); SOUTH HAMPSHIRE (11): Chandlers Ford, 11.3 (Goater 1998); NORTH HAMPSHIRE (12): Yateley, 4.4 (Goater 1998); WEST SUSSEX (13): Hove, 3.5 - 2 (R.M. Craske per CRP); Littlehampton, 21.8 (SP per CRP); West Chiltington, 21.6 (F. Dougharty per CRP); EAST SUSSEX (14): Beachy Head, 6.10 (R. Charlwood per CRP); Peacehaven, 14.5; 19.5; 20.5; 30.5; 31.5; 1.6 - 2; 3.6; 5.6; 2.8 (CRP); Rottingdean, 18.3 (M. Ruff per CRP); EAST KENT (15): Dungeness, 11.5; 31.5 (per DW per SPC); Kingsgate, 14.7 (Solly 1998); Newington, 16.3 (R. Lane); New Romney, early 3 (K. Redshaw per Tunmore (1997)); Sandwich, 18.6 - 1 found at rest at dusk (TR); SURREY (17): Croydon, 19.5 (Mrs L. Pitkin); Tooting, 3 or 4 (BFS per Waring (1997a)); Warlingham, 18.10 (M. Kerley);

Walthamstow, 3 or 4 (BFS per Waring (1997a)); SOUTH ESSEX (18): Bradwell-on-Sea, 22.9 (S. Dewick per Dewick (1998)); Brentwood, 29.7 (B. Wilkens per BG); NORTH ESSEX (19): St Osyth, 4.9 (RWA per BG); HERTFORDSHIRE (20): Hemel Hempstead, 21.3 (M. Newland per CWP); EAST NORFOLK (27): Cromer, 28.8 (G. Lee per Hipperson (1997)); Norwich, 7.1 (Tunmore 1997); Sheringham, 13.6 (F. Farrow per Hipperson (1998)); WEST GLOUCESTERSHIRE (34): Wotton-under-Edge, 12.3 (B.P.S. Cleal per RG); CARMARTHENSHIRE (44): Maesycrugiau, 10.4 (Morgan & Lucas 1997); ISLE OF MAN (71): Douglas, 19.5 (J. Rogers per GDC); Glen Maye Patrick, 16.5 (R. Walker per GDC); CHANNEL ISLANDS (113): L'Ancresse, Guernsey, 22.3 (IH per Austin (1998a)); La Broderie, Guernsey, 14.10 - 1 at mv light (PC per Austin (1998a)) (as 15.10 in Austin (1998b)); Le Chene, Guernsey, 1.5 (TNDP per Austin (1998a)); Les Amarreurs, Guernsey, 15.6 (IH per Austin (1998a)); Les Terres, Guernsey, 2.4 (IH per Austin (1998b)); Rue Marquand, St. Andrew's, Guernsey, 9.4; 12.4 (J. Le Huquet per Austin (1998a)); St. Peter Port, Guernsey, 22.3 (IH per Austin (1998a)).
Summary: (1): 23; (3): approx. 6; (8): 1; (9); approx. 20; (10): 5; (11): 1; (12): 1; (13): 4; (14): 12; (15): 6; (17): 8; (18): 2; (19): 1; (20): 1; (27): 3; (34): 1; (44): 1; (71): 2; (113): 8.

Oleander Hawk-moth *Daphnis nerii* (Linnaeus) [I]
EAST KENT (15): Densole, near Folkestone, 1.9 - 1 male (TR); SHETLAND ISLANDS (112): Baltasound, 2.9 (Pennington 1998).

Spurge Hawk-moth *Hyles euphorbiae* (Linnaeus) [I]
EAST KENT (15): Dungeness, 12.6 - 1 male (SPC).

Bedstraw Hawk-moth *Hyles gallii* (Rottemburg) [I]
ISLE OF WIGHT (10): Bonchurch, 16.7 (Knill-Jones 1998c); SOUTH HAMPSHIRE (11): Southsea, 20.7 (Langmaid 1998a); EAST SUSSEX (14): Rye Harbour, 5.7 (DJF per CRP); NORTH ESSEX (19): Lamarsh, 17.7 (IG per BG); EAST SUFFOLK (25): Dunwich Forest, 24.5 - flying by day (Hill 1997); Minsmere, 1.6 (Hill 1997) (as 2.6 in Anderson & Wilson (1998)); EAST NORFOLK (27): Edgefield, 29.6 (A. Starling per Hipperson (1998)); Kelling, 7.6 (Hill 1997); Morton, 8.8 (T. Crafer per Tunmore (1998a)); WEST NORFOLK (28): Holkham NNR, 11.8; 22.8 (MT per Hipperson (1997)); NORTH LINCOLNSHIRE (54): Grebby, 22.7 (W.G. Hoff per RJ); Scotton Common, 16.8 (K. Skelton per RJ); 17.8 (RJ); WESTMORLAND (69): South Walney N.R., 21.7; 22.7; autumn - at least 4 larvae (Makin 1998); ISLE OF MAN (71): Kirk Michael, 30.8 - 1 larva (D. & E. Ford per GDC).
Summary: (10): 1; (11): 1; (14): 1; (19): 1; (25): 2; (27): 3; (28): 2; (54): 3; (69): 2 + 4 larvae; (71): 1 larva.

Striped Hawk-moth *Hyles livornica* (Esper) [I]
EAST KENT (15): Dungeness, 12.6 (Hill 1997); Kingsgate, 26.8 (Solly 1998); NORTHAMPTONSHIRE (32): Daventry area, 14.11 (Williams 1998).

NOTODONTIDAE

Scarce Chocolate-tip *Clostera anachoreta* ([Denis & Schiffermüller]) [I?/V?/R?]
EAST KENT (15): New Romney, 5.8 (Clancy & Walker 1998); SOUTH ESSEX (18): Bradwell-on-Sea, 5.8 (AJD per Dewick (1999)).

THAUMETOPOEIDAE

Oak Processionary *Thaumetopoea processionea* (Linnaeus) [I]
CHANNEL ISLANDS (113): Le Chene, Guernsey, 17.8 (TNDP per Austin (1998a)) (as DJLA in Austin (1998b)).

LYMANTRIIDAE

Brown-tail *Euproctis chrysorrhoea* (Linnaeus) [I?]
WEST CORNWALL (1): St Agnes, Isles of Scilly, 21.7 (MEH).

Gypsy Moth *Lymantria dispar* (Linnaeus) [I]
CHANNEL ISLANDS (113): Le Chene, Guernsey, 16.8 (TNDP per Austin (1998a)).

ARCTIIDAE

Dotted Footman *Pelosia muscerda* (Hufnagel) [I]
WEST SUSSEX (13): Walberton, 11.8 (JTR per CRP); EAST SUSSEX (14): Icklesham, 11.8 (IDH per CRP); Winchelsea Beach, 5.8 (DB) (as Rye Harbour in Funnell (1998)); EAST KENT (15): Sandwich Bay, 19.8 (Game & Lycett 1998); SOUTH ESSEX (18): Beaumont, 8.8 (J.B. Fisher per Anon (1998b)).

Hoary Footman *Eilema caniola* (Hübner) [I?/V?]
DORSET (9): Portland Bird Observatory, 11.8; 1.9 (Cade 1998); ISLE OF WIGHT (10): Bonchurch, 7.9 (J. Halsey per Knill-Jones (1998b)) (as 9.9 in Knill-Jones (1998c)); SOUTH HAMPSHIRE (11): Brockenhurst, 19.10 (Goater 1998).

Pigmy Footman *Eilema pygmaeola* (Doubleday) [I?]
NORTH ESSEX (19): Tollesbury, 18.7 - 1 ssp. *pallifrons* (JF & BG per BG); CHANNEL ISLANDS (113): St Martin's, Guernsey, 6.7 (WA per Austin (1998b)).

Four-spotted Footman *Lithosia quadra* (Linnaeus) [I?]
WEST CORNWALL (1): Coverack, 5.10; 7.10 (DB); The Lizard, 5.10; 18.10 (Tunmore 1998e) (given as Church Cove per MT).

Speckled Footman *Coscinia cribraria* (Linnaeus) [I]
EAST KENT (15): Kingsgate, 8.8 (Solly 1998).

Crimson Speckled *Utetheisa pulchella* (Linnaeus) [I]
WEST CORNWALL (1): Carlyon Bay Beach, 20.9 (P. Boggis per Anon (1998b)); Lower Lanner, The Lizard, 2.9 (R. Howard per Tunmore (1998e)); St Marys, Isles of Scilly, 19.10 (reported to be almost certainly this species) (A. Harding per JPM).

Jersey Tiger *Euplagia quadrpunctaria* (Poda) [I?/R(t)?/V?]
EAST SUSSEX (14): Rye Harbour, 12.8; 20.8 (DJF & PP per CRP).

NOLIDAE

Kent Black Arches *Meganola albula* ([Denis & Schiffermüller]) [I?/V?/R?]
NORTH LINCOLNSHIRE (54): Gibraltar Point, 19.7 (D. Brown per RJ); Saltfleetby-Theddlethorpe, 12.7 (JJ & G. Wright per R.J.).

NOCTUIDAE

Coast Dart *Euxoa cursoria* (Hufnagel) [I]
EAST KENT (15): Ramsgate, 27.7 (Solly 1998); NORTH ESSEX (19): St Osyth Lane, 2.8; 6.8 (RWA per BG).

Great Dart *Agrotis crassa* (Hübner) [I]
WEST CORNWALL (1): St. Agnes, Isles of Scilly, 10.8 - 3 (Hicks & Hale 1998); DORSET (9): Portland, 11.8 (also what was considered to be same individual on 14.8 & 15.8 (Cade 1998)).

Portland Moth *Actebia praecox* (Linnaeus) [R?/I?]
EAST SUSSEX (14): Rye Harbour, 17.8; 21.8 (DJF per Tunmore (1998a)); EAST KENT (15): Dungeness, 12.8 - 2 (DW per Tunmore (1998a)); Greatstone, 11.8 (BB per Tunmore (1998a));

Littlestone, 5.8 (KR per Tunmore (1998a)); New Romney, 31.8 (KR per Tunmore (1998a)); EAST NORFOLK (27): Edgefield, 8.8 (S. Harrap & A. Starling per Tunmore (1998a)).
Summary: (14): 2; (15): 5; (27): 1.

Black Collar *Ochropleura flammatra* ([Denis & Schiffermüller]) [I]
SHETLAND ISLANDS (112): Eswick, 28.6 (Rogers 1998).

Radford's Flame Shoulder *Ochropleura leucogaster* (Freyer) [I]
WEST CORNWALL (1): St. Agnes, Isles of Scilly, 30.10; 21.11 (Hicks & Hale 1998).

Great Brocade *Eurois occulta* (Linnaeus) [I]
WEST SUSSEX (13): Walberton, 26.7 (JTR per CRP); EAST KENT (15): Kingston, Canterbury, 15 to 18.7 - 1 roosting among curtains (KE); SOUTH ESSEX (18): Bradwell-on-Sea, 22.7 - 1 at *Buddleia* blossom (Dewick 1998) (given as 3 by BG); NORTH LINCOLNSHIRE (54): Dalby, 24.7; 8.8 (Mrs M.E. Dawson per RJ); Grebby, 21.7 (W.G. Hoff per RJ); Wragby, 8 (C. Smith per RJ); NOTTINGHAMSHIRE (56): Wollaton Park, 6.8 (per SW); SOUTH-EAST YORKSHIRE (61): Spurn Bird Observatory, 23.7 (Spence 1998); NORTH ABERDEENSHIRE (93): Oldmeldrum, 25.7 and several subsequently (MY per Waring (1997c)); BANFFSHIRE (94): Ordiquhill, 5.8; 11.8 - 2; 13.8 (RL); SHETLAND ISLANDS (112): 20.7 to 2.9 - 60 (Penington 1998).
Summary: (13): 1; (15): 1; (18): 1; (54): 4; (56): 1; (61): 1; (93): 1+; (94): 4; (113): 60.

Pale Shining Brown *Polia bombycina* (Hufnagel) [I]
EAST KENT (15): Lydd, 13.6 - grey, continental form (Clancy & Walker 1998) (1 female, KR per SPC).

Beautiful Brocade *Lacanobia contigua* ([Denis & Schiffermüller]) [I?]
EAST KENT (15): Dungeness, 11.6 - 1 male (DW per SPC).

White-point *Mythimna albipuncta* ([Denis & Schiffermüller]) [I/R(t)?]
WEST CORNWALL (1): St. Agnes, Isles of Scilly, 10.8; 11.8; 14.8; 22.8 (MEH); SOUTH DEVON (3): Churston Court Farm (SX905564), 19.10 (DSF per RFM); DORSET (9): Durlston Head, Swanage 24.8 - 2 (RB); 2.10 (JHC); Portland Bird Observatory, 23.6 to 19.10 - 38 (Cade 1998) (given as 3.6 to 19.10 - 38 (MC)); Studland, 19.10 (DB); ISLE OF WIGHT (10): Binstead, 20.10 (BJW); Freshwater, 23.6 to 17.11 - 11 (considered "now resident") (SAKJ); no locality given, undated - 40 (Knill-Jones 1998c) (presumably includes previous records); SOUTH HAMPSHIRE (11): Linford, 14.8 (Goater 1998); Woolston, 19.8; 26.8 (Goater 1998); WEST SUSSEX (13): Climping, 15.8 (JTR per CRP); Littlehampton, 3.9 (REP per CRP); Middleton-on-Sea, 31.5 - 1 to actinic light (RJB); Walberton, 10.8; 20.8; 22.8; 30.10; 17.11 (JTR per CRP); EAST SUSSEX (14): Beachy Head, 12.8 (JS per CRP); 22.8 - 2 (J. Platts per CRP); Crowborough, 22.8 (MJS per CRP); Fairlight, 9.8 (DJF, BFS & MSP); Icklesham, 14.6 - 2; 8.7; 12.8 - 3 (IDH per CRP); Peacehaven, 8.8 - 2; 11.8 - 2; 15.8; 16.8; 21.8; 22.8; 23.8; 24.8 - 3; 5.9 (CRP); Pett Levels, 31.8 (PT per CRP); Rye Harbour, 5.6; 6.6; 14.6; 16.6; 24.6; 7.7; 8.8 - 4; 11.8; 12.8; 31.8 (DJF per CRP); 10.8; 14.8; 23.8; 27.8; 30.8; 1.9; 4.9; 6.9 - 2; 7.9 - 3 (DJF & PP per CRP); 10.9 (PP per CRP); 11.9 (DB); Woodingdean, 10.8 (JS per CRP); EAST KENT (15): Densole, 8.6; 8.8; 9.8; 11.8; 18.8; 14.9; 19.9; 17.10 (TR); Dungeness, 6.6; 11.6 - 3 (Hill 1997); 6.6 (DB); 10.8; 18.8 - 6; 2.9 (TR); 11.9 (GAC); 26.8 (MT); 11.8; 15.8; 25.8; 30.8 - 3; 1.9; 4.9 - 2; 5.9 (KR per SPC); 6.6; 7.6; 10.8 - 3; 11.8 - 4; 12.8; 24.8; 6.9 (DW & SPC); Folkestone Warren, 8.8; 17.10 (TR); Greatstone, 30.5; 10.8; 11.8 - 5; 12.8 - 3; 13.8 - 2; 15.8; 19.8; 20.8 - 2; 26.8 - 2; 1.9; 4.9; 5.9 (BB per SPC); Littlestone, 16.5; 5.6; 11.6; 11.8 - 6; 13.8; 15.8; 17.8 - 2; 30.8 - 3; 31.8 (KR per SPC); Lydd, 15.8; 16.8; 20.8; 25.8 - 2; 27.8; 28.8 (KR per SPC); Lydd-on-Sea, 12.8 (SPC); New Romney, 12.8; 15.8; 16.8 - 2; 18.8; 22.8; 23.8; 31.8 (KR per SPC); 10.8; 16.8; 17.8; 24.8 - 3; 25.8; 5.9 (SPC);

Sandwich Bay, 8 - 7 (Game & Lycett 1998); Stoneleigh (probably refers to Stonelees), 6.6 (Hill 1997); SOUTH ESSEX (18): Bradwell-on-Sea, 6.6; 7.6; 23.6; 10.8 to 3.9 - 24; 1.10 (Dewick 1998); Theydon Bois, 7.7 (J.G. Green per BG); West Tilbury, 3.8 (DGD); NORTH ESSEX (19): Dovercourt, 13.6 (CG per BG); Jaywick, 18.7 (JY per BG); St Osyth, 16.8 (RWA per BG); EAST SUFFOLK (25): Languard Bird Observatory, undated - 8 (Odin 1998); EAST NORFOLK (27): Eccles, 18.8; 20.8 (NB per Hipperson (1997); Hainford, 21.8 (Hipperson 1997); WEST NORFOLK (28): Holkham NNR, 22.8 (MT per Hipperson (1997)); SOUTH-EAST YORKSHIRE (61): Spurn Bird Observatory, 10.6 (Spence 1998); CHANNEL ISLANDS (113): small nos. between 17.5 and 18.10, "probably resident as well as a migrant" (Austin 1998a); "Small numbers to light on 43 nights at eight sites" 3.5 to 7.11 (Austin 1998b)
Summary: (1): 4; (3): 1; (9): 42; (10): 40; (11): 3; (13): 8; (14): 53; (15): 117; (18): 30; (19): 3; (25): 8; (27): 3; (28): 1; (61): 1; (113): at least 43, "probably resident".

The Delicate *Mythimna vitellina* (Hübner) [I/R(t)?]
WEST CORNWALL (1): Church Cove, 25.3 (Hill 1997); 7.7; 11.7; 15.9; 16.9; 27.9 - 3; 30.9; 1.10; 3.10; 6.10; 12.10; 14.10; 30.10 (MT); Coverack, 5.10 - 2; 16.10 (DB); 5.10 - 2 (possibly same as previous); 6.10 (MT); Kynance, 18.9; 18.10 - 2; 19.10 (MT); St. Agnes, Isles of Scilly, 12.5; 3.5 - 2; 22.5 - 2; 29.5 - 2; 3.6 - 2; 9.6 - 5; 11.6 - 7; 14.6 - 7; 16.6 - 4; 21.6 - 5; 23.6 - 5; 28.6 - 3; 30.6 - 4; 3.7 - 2; 5.7; 14.8 - 2; 15.8 - 2; 16.8; 24.8 - 2; 1.9 - 8; 3.9; 4.9 - 7; 6.9; 8.9 - 8; 10.9 - 14; 13.9 - 8; 15.9 - 5; 17.9 - 8; 18.9 - 7; 20.9 - 4; 21.9 - 5; 22.9 - 5; 23.9 - 3; 24.9 - 5; 25.9 - 13; 30.9 - 6; 1.10 - 5; 2.10 - 7; 4.10 - 8; 10.10 - 4; 15.10 - 2; 17.10; 18.10 - 4; 19.10 - 3; 22.10 - 2; 23.10 - 2; 24.10 - 2; 29.10; 30.10; 31.10; (MEH); Porthloo, St. Mary's, Isles of Scilly, 17.10 - 2; 18.10; 19.10 - 2; 22.10 - 5; 23.10 - 3 (JPM); The Lizard, autumn - 14 (Tunmore 1998e) (possibly includes previous records); Tremelethen Farm, St. Mary's, Isles of Scilly, 12.10 - 3; 13.10; 14.10 - 2; 16.10; 17.10 (JPM); EAST CORNWALL (2): Kilkhampton, 23.9 (GEH); SOUTH DEVON (3): Churston Court Farm (SX905564), 29.9 (DSF per RFM); Tuckermarsh, Bere Alston, 30.9 (Bogue 1998); NORTH DEVON (4): Abbotsham, Bideford, 25.9 (A.S. Henderson per RFM); DORSET (9): Durlston, 18.10 (DB); Durlston Head, Swanage, 30.9 (GAC); 2.10 (JHC); Portland Bird Observatory, 14.5 to 19.10 - 36 (inc. 1.9 - 3) (Cade 1998); ISLE OF WIGHT (10): Binstead, 6.9 (Goater 1998) (as 7.9 (BJW)); Freshwater, 28.8 - 3; 14.9; 17.9; 18.9; 20.10 (SAKJ); no locality given, undated - 15 (inc. 11.5) (Knill-Jones 1998c) (probably includes previous records); SOUTH HAMPSHIRE (11): Brockenhurst, 30.8 (Goater 1998); Sparsholt, 17.5; 31.5 (RB); NORTH HAMPSHIRE (12): Selborne, 31.8; 6.9 (AA); WEST SUSSEX (13): Littlehampton, 6.9 (SP per CRP); Walberton, 9.5; 30.8; 3.9 - 3; 4.9; 9.9; 11.10 - 2; 17.10; 25.11 (JTR per CRP); EAST SUSSEX (14): Hastings, 3.9 (PT per CRP); Peacehaven, 1.9; 3.9 - 2; 6.9; 18.9 (CRP); Pett Levels, 31.8 (PT per CRP); Rye Harbour, 24.7 (K. Palmer per CRP); 24.8; 30.8; 6.9; 8.9 (DJF & PP per CRP); 4.9 - 3 (DJF per CRP); 9.9; 10.10; 11.10 (PP per CRP); 14.11 (PP per CRP); EAST KENT (15): Dungeness, 30.9 (DW per SPC); 29.8; 30.8 - 2; 5.9 - 2 (KR per SPC); Herne Bay, 12.5 (Hill 1997); Lydd, 11.10 (KR per SPC); Nagden, Faversham, 23.8 (GAC); New Romney, 19.5 (KR per SPC); SOUTH ESSEX (18): Bradwell-on-Sea, 18.9 (Dewick 1998); NORTH ESSEX (19): St Osyth, 3.9 (RWA per BG); EAST SUFFOLK (25): Languard Bird Observatory, undated - 2 (Odin 1998); GLAMORGAN: Black Hope 7.6 (Hill 1997); CHANNEL ISLANDS (113): small nos. between 9.6 and 2.11, "probably resident as well as a migrant "(Austin 1998a); "Ones and twos to light on 34 nights at seven sites" 10.6 to 2.11 (Austin 1998b).
Summary: (1): 254 (or 256); (2): 1; (3): 2; (4): 1; (9): 39; (10): 15(?); (11): 3; (12): 2; (13): 12; (14): 19; (15): 10; (18): 1; (19): 1; (25): 2; Glamorgan: 1; (113): at least 34, "probably resident".

White-speck *Mythimna unipuncta* (Haworth) [I]
WEST CORNWALL (1): Church Cove, 5.3 - 2; 25.3; 27.9; 11.11; 18.11; 21.11; 22.11; 23.11; 25.11 - 6; 27.11 - 3; 28.11 - 3; 29.11 - 3; 30.11; 1.12 - 2; 3.12 (MT); Peninnis Head, Isles of Scilly, 19.10 (JPM); Porthloo, St. Mary's, Isles of Scilly, 17.10 - 4; 18.10 - 2; 19.10; 22.10 - 38; 23.10 - 3 (JPM); St. Agnes, Isles of Scilly, 2.3 - 2; 9.3; 16.5; 21.5; 30.5; 3.6; 5.7; 6.8; 14.8;

15.8; 18.8 - 2; 20.8; 22.8 - 3; 24.8 - 2; 3.9 - 2; 4.9 - 4; 6.9; 8.9 - 3; 10.9 - 2; 13.9 - 2; 18.9 - 4; 20.9; 24.9 - 2; 25.9 - 3; 30.9; 2.10; 4.10; 10.10 - 4; 15.10; 17.10 - 4; 18.10 - 16; 19.10 - 5; 22.10 - 16; 23.10 - 4; 24.10 - 5; 29.10 - 13; 30.10 - 14; 31.10 - 5; 1.11 - 16; 2.11 - 6; 12.10 - 7; 13.10 - 2; 21.11 - 9; 25.11 - 23; 26.11 - 22; 28.11 - 6; 3.12 - 2; 12.12 - 5; 19.12 - 3; 20.12 - 8 (MEH); The Lizard, autumn - 28 (inc. 11 - 25) (probably includes previous records); 5.12 (Tunmore 1998e); Tremelethen Farm, St. Mary's, Isles of Scilly, 12.10; 13.10 - 6; 14.10 - 2 (JPM); SOUTH DEVON (3): Teignmouth, 17.11 (RFM); DORSET (9): Portland Bird Observatory, 14.11 to 18.12 - 11 (MC); ISLE OF WIGHT (10): Arreton, 11.3 (D. Peach per Knill-Jones (1998b)); Freshwater, 9.3 (Knill-Jones 1998a); 31.8; 18.11 (SAKJ); Hacketts Land, Branstone, 11.3 (Goater 1998); no locality given, undated - 4 (Knill-Jones 1998c) (probably includes previous records); WEST SUSSEX (13): Walberton, 25.11; 29.11 (JTR per CRP); EAST KENT (15): Densole, 26.11 (TR); Newington, 12.7 (R. Lane); SOUTH ESSEX (18): Bradwell-on-Sea, 19.11 (Dewick 1998); EAST NORFOLK (27): Eccles, 13.6 (NB per Hipperson (1998)) (Bowman (1998) gives a single record on 27.11); CARMARTHENSHIRE (44): Trawsmawr, 24.7 (Morgan & Lucas 1997); ISLE OF MAN (71): Andreas, 19.10 (T. Callister per GDC).
Summary: (1): 332; (3): 1; (9): 11; (10): 5; (13): 2; (15): 2; (18): 1; (27): 1(?2); (44): 1; (71): 1.

The Cosmopolitan *Mythimna loreyi* (Duponchel) [I]
WEST CORNWALL (1): The Lizard, 29.9 (Tunmore 1998e) (given as Church Cove per MT); EAST KENT (15): New Romney, 23.7 (Clancy & Walker 1998) (1 female, KR per SPC); SOUTH ESSEX (18): Bradwell-on-Sea, 30.8 (Dewick 1998) (as 31.8 per BG); EAST NORFOLK (27): Eccles, 4.9 (NB per Hipperson (1997)).

Golden-rod Brindle *Lithomoia solidaginis* (Hübner) [I?/V?]
SHROPSHIRE (40): Preston Montford, 16.8 (DB); SHETLAND ISLANDS (112): Eswick, 28.8 - 2 (T. Rogers per Waring (1997c)).

Red Sword-grass *Xylena vetusta* (Hübner) [I?]
NORTH ESSEX (19): Copperas Wood, 27.9 (P. Smith per BG).

Sword-grass *Xylena exsoleta* (Linnaeus) [I?]
EAST KENT (15): Herne Bay, 18.1 (B. Matlock per Anon (1998b)); SHETLAND ISLANDS (112): Eswick, 15.5; 26.9 (Penington 1998).

Flame Brocade *Trigonophora flammea* (Esper) [I]
Note: Does not include Channel Islands where the species is resident.
DORSET (9): Durlston Country Park, 17.10; 18.10 (DB & RB per Anon (1998b)) (given as Durlston Country Park, 18.10 & Studland, 18.10 (DB)); West Bexington, 17.10 (R. Eden per Anon (1998b); EAST SUSSEX (14): Hastings, 10.10 (S. Richardson per Anon (1998b)); Rye Harbour, 10.10 (PP per CRP); EAST KENT (15): Dungeness, 15.10 (Clancy & Walker 1998) (1 male, S. Busulti per SPC); Lydd, 21.10 (Clancy & Walker 1998) (1 male, KR per SPC).
Summary: (9): 3; (14): 2; (15): 2.

Red-headed Chestnut *Conistra erythrocephala* ([Denis & Schiffermüller)] [I]
DORSET (9): Portland Bird Observatory, 27.11 (Cade 1998).

Pale-lemon Sallow *Xanthia ocellaris* (Borkhausen) [I?]
DORSET (9): Wareham, 5.10 (B. Withers per Tunmore (1998d)); ISLE OF WHITE (10): Wootton, 5.10 (T. Redfern per Tunmore (1998d)); EAST KENT (15): Dungeness, 20.9 (F. Butcher per BFS); 1.10 (DW per Tunmore (1998d)) (1 male, per SPC); NORTH ESSEX (19): Lamarsh, 3.10 (IG per Tunmore (1998d)); WEST NORFOLK (28): Stiffkey, 17.10 (C. Gambrill per Tunmore (1998d)).
Summary: (9): 1; (10): 1; (15): 2; (19): 1; (28): 1.

Tree-lichen Beauty *Cryphia algae* (Fabricius) [I]
ISLE OF WIGHT (10): Freshwater, 21.8 (Knill-Jones 1998b); WEST SUSSEX (14): Middleton-on-Sea, 6.8 - 2; 7.8 - 3 (all to 40w actinic light) (RJB).

Orache *Trachea atriplicis* (Linnaeus) [I?]
Note: Does not include Channel Islands record.
EAST KENT (15): Greatstone, 24.7 (Clancy & Walker 1998) (1 female, BB per SPC); EAST SUFFOLK (25): Languard Bird Observatory, 1.7 (Odin 1998).

Purple Cloud *Actinotia polyodon* (Clerck) [I]
EAST KENT (15): Whiteness, 20.5 (Hill 1997) (as Kingsgate, 26.8 (in Solly 1998)); EAST NORFOLK (27): Eccles, 7.8 (NB per Hipperson (1997)).

Angle-striped Sallow *Enargia paleacea* (Esper) [I/V?]
EAST KENT (15): Orlestone Forest, 14.7 - 1 male (TR); EAST NORFOLK (27): Cawston, 22.9 (J. Sutton per Hipperson (1997)).

Concolorous *Chortodes extrema* (Hübner) [I]
EAST KENT (15): Greatstone, 5.6 - 1 male (BB per SPC, see also Hill (1997)); Kingsgate, 13.6 (Solly 1998).

Dumeril's Luperina *Luperina dumerilii* (Duponchel) [I]
EAST SUSSEX (14): Peacehaven, 3.9 (CRP, conf. MSP).

Small Mottled Willow *Spodoptera exigua* (Hübner) [I]
WEST CORNWALL (1): St. Agnes, Isles of Scilly, 22.10 (Hicks & Hale 1998); SOUTH HAMPSHIRE (11): Chandlers Ford, 14.3 (Goater 1998); EAST KENT (15): Ramsgate, 24.9 (Solly 1998); Sandwich Bay, 10 - 2 (Game & Lycett 1998); CHANNEL ISLANDS (113): Le Gouffre, Guernsey, 5.7 (JB per Austin (1998a)).

Scarce Bordered Straw *Heliocoverpa armigera* (Hübner) [I]
WEST CORNWALL (1): Porthloo, St. Mary's, Isles of Scilly, 22.10 - 2 (JPM); Scilly Isles, 23.10 (JS per CRP); St. Agnes, Isles of Scilly, 20.9 (MEH); 22.10 - 3; 30.10 (Hicks & Hale 1998); The Lizard, autumn - 3 (Tunmore 1998e); EAST CORNWALL (2): Kilkhampton, 25.9 (GEH); SOUTH DEVON (3): Abbotskerswell, 18.9 (BPH); DORSET (9): Durlston Head, Swanage, 1.10; 2.10 - 2 (JHC); Portland Bird Observatory, 24.9; 19.10 (Cade 1998); ISLE OF WIGHT (10): Binstead, undated - 5 larvae on red geranium in garden (Goater 1998); no locality given, undated - 2 (Knill-Jones 1998c); SOUTH HAMPSHIRE (11): Woolston, 27.6 (Goater 1998); WEST SUSSEX (13): Walberton, 9.10 (JTR per CRP); EAST SUSSEX (14): Peacehaven, 23.8 (CRP); Rye Harbour, 8.8 (DJF per CRP); 25.9 (DJF & PP per CRP); EAST KENT (15): Dungeness, 12.8 (DW per SPC); Greatstone, 7.9 (BB per SPC); Kingsgate, 23.8 (Solly 1998); Lydd, 19.10; 20.10 (KR per SPC); New Romney, 16.8 (KR per SPC); Ramsgate, 14.8; 16.8 (Solly 1998); SURREY (17): Lingfield, 19.10 (JHC); SOUTH ESSEX (18): Bradwell-on-Sea, 3.10 (Dewick 1998); PEMBROKESHIRE (45): Skomer Island, 25.9 (NL); SOUTH-EAST YORKSHIRE (61): Spurn Head, 23.8 (P.A. Crowther per BRS); SHETLAND ISLANDS (112): Fair Isle, 28.8 (Penington 1998); CHANNEL ISLANDS (113): La Broderie, Guernsey, 22.9 (PC per Austin (1998a)) (as 23.9 in Austin (1998b)); Le Chene, Guernsey, 28.8; 26.9; 28.9 - 3 (TNDP per Austin (1998a)); Le Gouffre, Guernsey, 28.9 (JB per Austin (1998a)).
Summary: (1): 8(or 9); (2); 1; (3): 1; (9): 5; (10): 2 (+ 5 larvae); (11); 1; (13): 1; (14); 3; (15): 8; (17): 1; (18): 1; (45): 1; (61): 1; (112): 1; (113); 7.

Marbled Clover *Heliothis viriplaca* (Hufnagel) [I?/V?]
SOUTH WILTSHIRE (8): Figheldean Down, 2.8 - 1 female (GRE); NORTH HAMPSHIRE (12): Magdalen Hill Down, 22.8 - 1 fresh example seen by day (Goater 1998).

Bordered Straw *Heliothis peltigera* ([Denis & Schiffermüller]) [I]
WEST CORNWALL (1): St. Agnes, Isles of Scilly, 9.6 - 7 (Hale & Hicks 1998) (as 11.6 per MEH); SOUTH DEVON (3): Berry Head, Brixham, 22.10 - 1 by day (A. Rosier per RFM); Churston Court Farm (SX905564), 9 (DSF per RFM); DORSET (9): Portland Bird Observatory, 17.7 (Cade 1998); EAST KENT (15): Kingsgate, 8.8 - 2 (Solly 1998); EAST NORFOLK (27): Norwich, 17.8 (S. Paston per Hipperson (1998)).
Summary: (1): 7; (3): 2; (9): 1; (15): 2; (27); 1.

Small Marbled *Eublemma parva* (Hübner) [I]
SOUTH DEVON (3): Heybrook Bay, 17.8 - 2 dead larvae in flowers of *Pulicaria dysenterica*; 20.8 - 2 live larvae (later died) (RJH).

Golden Twin-spot *Chrysodeixis chalcites* [I/E]
SOUTH HAMPSHIRE (11): Milton-on-Sea, 1.11 (B. Elliott per Anon (1998b); EAST KENT (15): Kingsgate, 10.10 (Solly 1998); SOUTH ESSEX (18): Bradwell-on-Sea, 5.6 (Dewick 1998) (as 6.6 per BG); Thundersley, 24.9 (DGD); NORTH ESSEX (19): Jaywick, 25.9 (JY per BG); [NORTHAMPTONSHIRE (32): Sywell, 25.11, pupal case later found in a rose which had been purchased from a local supermarket (Dunkley 1998)].
Summary: (11): 1; (15): 1; (18): 2; (19): 1; [(32): 1]

Scar Bank Gem *Ctenoplusia limbirena* (Guenée) [I]
WEST CORNWALL (1): St. Agnes, Isles of Scilly, 13.9 (Hicks & Hale 1998); DORSET (9): Portland Bird Observatory, 29.7 (Cade 1998); SOUTH HAMPSHIRE (11): Southsea, 10.6 (Langmaid 1998b); CHANNEL ISLANDS (113): St. Ouen's Pond, 30.8 (R.V. Burrows per Anon (1998c)).

The Ni Moth *Trichoplusia ni* (Hübner) [I]
WEST SUSSEX (13): Walberton, 8.9 (JTR per CRP).

Dewick's Plusia *Macdunnoughia confusa* (Stephens) [I]
SOUTH ESSEX (18): Bradwell-on-Sea, 1.10 - 1 at *Buddleia* blossom (S. Dewick per Dewick (1998)) (As AJD per BG); EAST SUFFOLK (25): Languard Bird Observatory, 7.8 (Odin 1998); CHANNEL ISLANDS (113): Le Gouffre, Guernsey, 19.10 (JB per Austin (1998a)).

Scarce Silver Y *Syngrapha interrogationis* (Linnaeus) [I/V?]
EAST KENT (15): Lydd, 21.7 (Clancy & Walker 1998) (1 male, KR per SPC); EAST NORFOLK (27): Eccles, 21.7 (NB per Hipperson (1997)); SHETLAND ISLANDS (112): Burrafirth, 14.7 (Penington 1998); Eswick, 14.7 (Penington 1998).

Clifden Nonpareil *Catocala fraxini* (Linnaeus) [I]
EAST KENT (15): Kingston, Canterbury, 19.9 (KE); Reculver, 3.10 - by day (M. Lawson per Anon (1998b)); SHETLAND ISLANDS (112): Eswick, 28.8 (T. Rogers per Waring (1997c)); Ocraquoy, 28.8 (Waring 1997c).

Lunar Double-stripe *Minucia lunaris* ([Denis & Shiffermüller]) [I]
EAST KENT (15): Littlestone, 4.6 - 1 male (KR per SPC, see also Hill (1997)).

The Passenger *Dysgonia algira* (Linnaeus) [I]
DORSET (9): West Bexington, 10.9 (R. & S. Eden per Waring (1997d)).

Four-spotted *Tyta luctuosa* ([Denis & Schiffermüller]) [I?]
SOUTH ESSEX (18): Bradwell St Peters, 20.7 (GS per BG); NORTH ESSEX (19): Lamarsh, 1.7 (IG & BG per BG); Layer Marney, 6.7 (JF per BG); Witham, 11.6 (R. Gerussi per BG).

Waved Black *Parascotia fuliginaria* (Linnaeus) [I?]
EAST KENT (15): Lydd, 11.8 (BB per SPC, see also Clancy & Walker (1998)).

Bloxworth Snout *Hypena obsitalis* (Hübner) [I?/V?]
WEST SUSSEX (13): Atherington, 16.11 - 1 to ivy blossom (MSP & JEC); OXFORDSHIRE (23): Henley, 27.8 (slight possibility that it was a descendant of an escapee from a captive population) (D. Wedd per Waring (1998)).

Plumed Fan-foot *Pechipogo plumigeralis* (Hübner) [I?/R?]
EAST SUSSEX (14): Rye Harbour, 25.8 (Funnell 1998); EAST KENT (15): Dungeness, 9.8 - 1 male (TR).

ANNEX 2: SELECTED RECORDS OF "COMMONER" SPECIES

This annex gives a very brief summary of the abundance over the year as well as the earliest and latest date for the more frequent immigrant species which are not covered in Annex 1. Other significant records or observations for 1997 which have been received and were not covered in Annex 1, such as large numbers of an individual species, are also given.

YPONOMEUTIDAE

***Plutella xylostella* (Linnaeus)**
An average year, widely reported in southern England. DORSET (9): Portland Bird Observatory, a total of 932 recorded over the year (MC); EAST SUSSEX (14): Peacehaven; a total of 309 recorded over the year (CRP); Rye Harbour, a total of 877 recorded over the year (Funnell 1998).
Earliest dates: WEST CORNWALL (1): St Agnes, Isles of Scilly, 15.3 (MEH); CHANNEL ISLANDS (113): Guernsey, 5.5 (Austin 1998a); DORSET (9): Portland Bird Observatory, 22.5 (Cade 1998);
Latest dates: DORSET (9): Portland Bird Observatory, 19.12 (MC); ISLE OF WIGHT (10): Freshwater, 28.11 (SAKJ); WEST CORNWALL (1): St Agnes, Isles of Scilly, 26.11 (MEH); EAST SUSSEX (14): Peacehaven, 26.11 - 3 (CRP); CHANNEL ISLANDS (113): Guernsey, 26.11 (Austin 1998b).
Other significant records: WEST CORNWALL (1): St. Agnes, Isles of Scilly, 10.8 - 100 (Hicks & Hale 1998); 20.9 - 59; 24.9 - 47; 24.10 - 49; 30.10 - 46 (MEH); DORSET (9): Portland Bird Observatory, 10.8 - 214 (Cade 1998); EAST SUSSEX (14): Peacehaven, 7.8 - 22; 9.8 - 28; 11.8 - 38 (CRP); Rye Harbour, 16.8 - 121 (Funnell 1998); EAST NORFOLK (27): Eccles-on-Sea, 23.8 - 67 (Bowman 1998); EAST SUFFOLK (25): Languard Bird Observatory, 12.8 - 1570 (Odin 1998); NORTH LINCOLNSHIRE (54): Gibraltar Point, 8.8 - 140 (Wilson, K. 1998); SOUTH-EAST YORKSHIRE (61): Spurn, 22.7 - 755 in two traps plus "hundreds of thousands along the peninsula" (Spence 1998); NORTH ABERDEENSHIRE (93): Oldmeldrum, 12.8 - 50 (MY per Waring (1997c)).

PYRALIDAE

***Udea ferrugalis* (Hübner)**
An average year, widely reported in southern England. DORSET (9): Portland Bird Observatory, a total of 237 recorded over the year (MC); EAST SUSSEX (14): Peacehaven; a total of 20 recorded over the year (CRP); Rye Harbour, a total of 60 recorded over the year (Funnell 1998); SOUTH ESSEX (18): Bradwell-on-Sea; a total of 23 recorded over the year (Dewick 1998).
Earliest dates: CHANNEL ISLANDS (113): Guernsey, 11.4 (Austin 1998a) (as 12.4 in Austin 1998b); DORSET (9): Portland Bird Observatory, 3.5 (Cade 1998).

Latest dates: DORSET (9): Portland Bird Observatory, 21.12 (MC); WEST CORNWALL (1): St Agnes, Isles of Scilly, 20.12 (MEH); The Lizard, 1.12 (Tunmore 1998e) (given as Church Cove per MT); NORTH HAMPSHIRE (12): Selborne, 20.12 (AA); CHANNEL ISLANDS (113): Guernsey, 14.12 (Austin 1998b).
Other significant records: WEST CORNWALL (1): Porthloo, St. Mary's, Isles of Scilly, 22.10 - 17 (JPM); St. Agnes, Isles of Scilly, 24.10 - 29 (Hicks & Hale 1998); 15.8 - 17; 16.8 - 25; 20.8 - 25; 24.8 - 39; 29.10 - 29; 25.11 - 11 (MEH); DORSET (9): Portland Bird Observatory, 6.11 - 35 (Cade 1998).

***Nomophila noctuella* ([Denis & Schiffermüller])**
A very poor year, relatively few records received and unrecorded in some areas. DORSET (9): Portland Bird Observatory, a total of 9 recorded over the year (Cade 1998); EAST SUSSEX (14): Peacehaven; a total of 1 recorded over the year (CRP); Rye Harbour, a total of 3 recorded over the year (Funnell 1998).
Earliest dates: CHANNEL ISLANDS (113): Le Gouffre, Guernsey, 8.3 (JB per Austin (1998a)); WEST CORNWALL (1): St Agnes, Isles of Scilly, 12.3; 15.3 (MEH); WEST SUSSEX (13): Nymans Garden, Handcross, 20.3 (JHC); SOUTH DEVON (3): Abbotskerswell, 25.3 (BPH per RFM).
Latest dates: WEST CORNWALL (1): St Agnes, Isles of Scilly, several records in 10, last on 22.10 (MEH); DORSET (9): Canford, 1.10 - 1 dead (JHC).

PIERIDAE

Small White *Pieris rapae* (Linnaeus)
Possibly significant record only: WEST NORFOLK (28): Scolt Head, 26.8 - 5000 (Tunmore 1998b).

NYMPHALIDAE

Red Admiral *Vanessa atalanta* (Linnaeus)
An average year, widely reported.
Earliest dates: CHANNEL ISLANDS (113): Guernsey, 13.1(Austin 1998b); SOUTH HAMPSHIRE (11): Hayling Island, 16.1 (Taverner 1998c); Southbourne 24.1 (Taverner 1998c); Acres Down, 26.1 (Taverner 1998c); EAST KENT (15): Sandwich Bay, 15.2 (Game & Lycett 1998); BUCKINGHAMSHIRE (24): Gussett Wood, 6.3 (DB); PEMBROKESHIRE (45): Skomer Island, 11.3 (NL).
Latest date: SOUTH HAMPSHIRE (11): Boldre 31.12 (Taverner 1998c); ISLE OF WIGHT (10): Binstead, 28.12 (Taverner 1998c); 29.11 - 4; 13.12; 21.12; 30.12 (Warne 1998) (see Warne (1998) for a summary of the records over the winter of 1997/98 on the Isle of Wight); Arreton, 16.12 - 1 "hibernating in a wood pile" (Taverner 1998c); EAST SUSSEX (14): Peacehaven, 29.11 (CRP); DORSET (9): Portland Bird Observatory, 27.11 (Cade 1998).
Other significant records: WEST CORNWALL (1): The Lizard, 19.3 - 1 at light (Tunmore 1998e); DORSET (9): Portland Bird Observatory, 6.8 to 10.8 - 8 recorded at mv light, including 6 on 7.8; 23.9 to 5.10 - 8 recorded at mv light (Cade 1998); NORTH HAMPSHIRE (12): Selborne, 29.8 - 1 at mv light (AA); EAST KENT (15): Sandwich Bay, 9.8 - 19 (Game & Lycett 1998); SURREY (17): Lingfield, 6.9 - 12 (JHC); Wildhern, 7.9 - 35 (Taverner 1998c); SOUTH ESSEX (18): Bradwell-on-Sea; 16.5 - 16; 4.7 - 17; 20.7 - 20; 27.7 - 26; 8.9 - 12; 16.9 - 18; 17.10 - 10 (Dewick 1998); EAST SUFFOLK (25): Languard Bird Observatory, 6.9 - 96 moving south (Odin 1998); ANGLESEY (52): Llanfoes, 16.8 - 1 to mv light (JHC); SOUTH-EAST YORKSHIRE (61): Spurn Head, 8.6 - 23 (BRS); WESTMORLAND (69): South Walney N.R., 2.8 - 500 (Makin 1998); BANFFSHIRE (94): Ordiquhill, 29.8 - 60 (RL); SHETLAND ISLANDS (112): 28.8 - "hundreds in the islands" (Penington 1998).

Painted Lady *Vanessa cardui* (Linnaeus)
A poor year, few records received, but widely reported (at least in southern England).
Earliest dates: SOUTH HAMPSHIRE (11): Purbrook, 24.1 - 1 fluttered to ground when an allotment shed was being dismantled (Bloss 1998); EAST SUSSEX (14): Peacehaven, 6.3 (CRP); DORSET (9): no locality given, 8.3 (Bowles 1997a).
Latest dates: PEMBROKESHIRE (45): Skomer Island, 1.11 (NL); CHANNEL ISLANDS (113): Guernsey, 26.10 (Austin 1998b); WEST CORNWALL (1): Hayle, 23.10 (Wacher 1998).
Other significant records: DORSET (9): Portland Bird Observatory, 7.8 - 1 recorded at mv light (Cade 1998); NORTH ESSEX (19): Dovercourt, 17.9 - 11 (CG per BG).

Small Tortoiseshell *Aglais urticae* (Linnaeus)
The influx of this butterfly is covered by Tunmore (1998b), some of the more significant records are given here: WEST NORFOLK (28): Scolt Head NNR, 16.8 - c.50; 21.8 - "2500 present . . . . and 1000s more arriving from the east"; 26.8 - 231,000 estimated have arrived off the sea during the course of the day; 31.8 - estimated 1000 per hour moving west (Tunmore 1998b); "several fisherman reported clouds of Small Tortoiseshell moving west up to 15 miles off the north Norfolk coast" - late 8 (Tunmore 1998b); EAST NORFOLK (27): Winterton NNR, 24.8 - 20,000 (Tunmore 1998b); NORTH LINCOLNSHIRE (54): Gibraltar Point, 2.9 - estimated 1000 moving north (Tunmore 1998b); SOUTH-EAST YORKSHIRE (61): Spurn Point, 21.8 - over 1000; 26.8 - estimated 5000 flew north; 2.9 - 3000 moving north (Tunmore 1998b); WESTMORLAND (69): South Walney NR, 20.7 - 1000, 2.8 - 500 (Makin 1998).

Peacock *Inachis io* (Linnaeus)
NORTH LINCOLNSHIRE (54): Gibraltar Point, 14.8 - 100+ per hour arriving off the sea (Wilson, K.1998).

NOCTUIDAE

Dark Sword-grass *Agrotis ipsilon* (Hufnagel)
An below average year, widely reported. DORSET (9): Portland Bird Observatory, a total of 116 recorded over the year (MC); EAST SUSSEX (14): Peacehaven; a total of 15 recorded over the year (CRP); Rye Harbour, a total of 217 recorded over the year (Funnell 1998); SOUTH ESSEX (18): Bradwell-on-Sea; a total of 124 recorded over the year (Dewick 1998).
Earliest dates: ISLE OF WIGHT (10): Binstead, 3.3 (BJW); Freshwater, 6.3 (SAKJ); SOUTH ESSEX (18): Bradwell-on-Sea; 5.3 (Dewick 1998); SOUTH DEVON (3): Abbotskerswell, 8.3; 11.3 (BPH); DORSET (9): Portland Bird Observatory, 8.3 (Cade 1998); EAST KENT (15): Densole, 8.3 (TR); PEMBROKESHIRE (45): Skomer Island, 8.3 (NL); CHANNEL ISLANDS (113): Guernsey, 8.3 (Austin 1998b); EAST SUSSEX (14): Rye Harbour, 10.3 (Funnell 1998); WEST CORNWALL (1): Church Cove, 13.3 (MT); St Agnes, Isles of Scilly, 12.3 (MEH); SOUTH HAMPSHIRE (11): Chandlers Ford, 13.3; 14.3 (Goater 1998); NORTH HAMPSHIRE (12): Selborne, 16.3 (AA).
Latest dates: DORSET (9): Portland Bird Observatory, 21.12 (MC); NORTH HAMPSHIRE (12): Selborne, 10.12 (AA).
Other significant record: Rye Harbour, 30.8 - 14 (Funnell 1998).

Pearly Underwing *Peridroma saucia* (Hübner)
An average year, widely reported. DORSET (9): Portland Bird Observatory, a total of 59 recorded over the year (Cade 1998); EAST SUSSEX (14): Peacehaven; a total of 3 recorded over the year (CRP); Rye Harbour, a total of 36 recorded over the year (Funnell 1998); SOUTH ESSEX (18): Bradwell-on-Sea; a total of 14 recorded over the year (Dewick 1998).
Earliest dates: WEST SUSSEX (13): Turners Hill, 1.3 - 1 dead (JHC); ISLE OF WIGHT (10): Freshwater, 9.3 (Knill-Jones 1998b); SOUTH DEVON (3): Abbotskerswell, 11.3 (BPH); WEST CORNWALL (1): The Lizard, 13.3 (Tunmore 1998e) (given as Church Cove per MT); CHANNEL ISLANDS (113): La Broderie, Guernsey, 15.3 (PC per Austin (1998b)).

Latest dates: WEST SUSSEX (13): Walberton, 29.12 (JTR per CRP); WEST CORNWALL (1): St Agnes, Isles of Scilly, several late 11 records and 20.12 - 6 (MEH); The Lizard, 1.12 (Tunmore 1998e) (given as Church Cove per MT); SOUTH ESSEX (18): Bradwell-on-Sea; 28.11 (Dewick 1998); ISLE OF WIGHT (10): Binstead 14.11 (Goater 1998); Freshwater, 26.11 (SAKJ); DORSET (9): Portland Bird Observatory, 25.11 (Cade 1998); CHANNEL ISLANDS (113): La Broderie, Guernsey, 22.12 (PC per Austin (1998b)).
Other significant records: WEST CORNWALL (1): Porthloo, St. Mary's, Isles of Scilly, 22.10 - 9 (JPM); St Agnes, Isles of Scilly, 19.10 - 9; 22.10 - 11 (MEH); DORSET (9): Portland Bird Observatory, 7.9 - 10 (Cade 1998).

Silver Y *Autographa gamma* (Linnaeus)
A below average year, widely reported. DORSET (9): Portland Bird Observatory, a total of 1216 recorded over the year (MC); EAST SUSSEX (14): Peacehaven; a total of 433 recorded over the year (CRP); Rye Harbour, a total of 956 recorded over the year (Funnell 1998); SOUTH ESSEX (18): Bradwell-on-Sea; a total of 959 recorded over the year (Dewick 1998).
Earliest dates: EAST KENT (15): Densole, 9.3 (TR); ISLE OF WIGHT (10): Freshwater, 11.3 (Knill-Jones 1998a); SOUTH LINCOLNSHIRE (53): Bourne, 13.3 (Mrs A. Faulkner per RJ); DORSET (9): Portland Bird Observatory, 14.3 (Cade 1998).
Latest date: WEST SUSSEX (13): Walberton, 30.12 (JTR per CRP); WEST CORNWALL (1): St Agnes, Isles of Scilly, 26.11; 28.11 - 2 by day; 20.12 (MEH); The Lizard, 28.11 (Tunmore 1998e) (given as Church Cove per MT); DORSET (9): Portland Bird Observatory, 20.12 (MC); ISLE OF WIGHT (10): Freshwater, 28.11 (SAKJ); locality not given, 10.12 (Knill-Jones 1998c); SOUTH DEVON (3): Churston Court Farm (SX905564), 2.12 (DSF per RFM).
Selected significant records only: WEST CORNWALL (1): St Agnes, Isles of Scilly, 21.9 - 68 (MEH); DORSET (9): Portland Bird Observatory, 7.8 - 173 (Cade 1998); EAST SUSSEX (14): Peacehaven, 8.8 - 37; 30.9 - 28 (CRP); Rye Harbour, 8.8 - 98 (Funnell 1998); SOUTH ESSEX (18): Bradwell-on-Sea; 11.7 - 54 (Dewick 1998); WEST NORFOLK (28): Scolt Head NNR, 16.8 - 300 (Tunmore 1998b); SOUTH-EAST YORKSHIRE (61): Spurn Head, 29.7 - 70; 7.8 - 60; 8.8 - 150 (all records by day) (BRS); Spurn Point, 21.8 - 60 (Tunmore 1998b).

Initials of recorders

The recorders initials are listed alphabetically so that records can be extracted with relative ease.

AA	A. Aston	DJF	D.J. Funnell	JF	J. Firmin
AJD	A.J. Dewick	DJLA	D.J.L. Agassiz	JF[2]	J. Franks
BB	B. Banson	DSF	D.S. Fish	JHC	J.H. Clarke
BFS	B.F. Skinner	DW	D. Walker	JJ	J. Jaines
BG	B. Goodey	GAC	G.A. Collins	JM	J. Maddocks
BJW	B.J. Warne	GDC	G.D. Craine	JM[2]	J. Muggleton
BKW	B.K. West	GEH	G.E. Higgs	JO	J. Owen
BPH	B.P. Henwood	GRE	G.R. Else	JPM	J.P. Martin
BRS	B.R. Spence	GS	G. Smith	JS	J. Shaugnessy
CG	C. Gibson	IDH	I.D. Hunter	JTR	J.T. Radford
CRP	C.R. Pratt	IG	I. Grahame	JY	J. Young
CWP	C.W. Plant	IH	I. Hall	KE	K. Elks
DB	D. Brown	JB	J. Brehaut	KJO	K.J. Orpe
DGD	D.G. Down	JEC	J.E. Chainey	KR	K. Redshaw

LK	L. Kneale	PP	P. Philpot	RM	R. Mays
MC	M. Cade	PT	P. Troake	RWA	R.W. Arthur
MRH	M.R. Honey	RA	R. Austin	RWP	R.W. Parfitt
MJS	M.J. Simmons	RB	R. Bell	SAKJ	S.A. Knill-Jones
MSP	M.S. Parsons	REP	Mrs R.E. Pratt	SP	S. Patten
MT	M. Tunmore	RFM	R.F. McCormick	SPC	S.P. Clancy
MY	M. Young	RG	R. Gaunt	SW	Dr S. Wright
NB	N. Bowman	RJ	R. Johnson	TB	T. Bagworth
NL	N. Littlewood	RJB	R.J. Brooker	TNDP	T.N.D. Peet
PB	P. Bergdahl	RJH	R.J. Heckford	TR	T. Rouse
PC	P. Costen	RL	R. Leverton	WA	W. Angell

Other contributors

P. Ackery; T.G. Benyon; Ms M. Broomfield; R.W. Jones; M. Kerley; Dr. I. Kitching; R. Lane; J. McGill; Mrs L. Pitkin; T. Prichard; L. Rogers; E.G. & M.H. Smith; R.A. Softly; J.W. Ward; Mrs W. & K. Wheatley

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A large second brood of Heath Fritillary *Mellitaea athalia* (Rott.) (Lep.: Nymphalidae) in Essex

The Heath Fritillary is probably one of the easiest butterflies to re-introduce to woodlands where it once occurred, provided that the food plant remains available, and that the coppicing regime is both suitable and carried out correctly. These butterflies were re-introduced to Hockley Wood, South Essex, a few years ago and during 1999 I was delighted to discover a large second brood of adults. After many years studying butterflies, this is the first time I have ever seen such large numbers of a second brood; whether this is a consequence of global warming or due to some local phenomenon remains to be seen. Several mating pairs were seen, though no egg-laying has so far been observed. The eggs generally take about two weeks to hatch and the small larvae then feed for several weeks before over-wintering in communal tents spun of silk amongst curled-up leaves. The fact that most of the food plant had dried up or else was in poor condition on 22 September, when butterflies were still appearing, may well limit the survival of the larvae that arise from this second generation of adults and it will be most interesting to see what effect, if any, this unusually large second brood in 1999 has on the first brood in 2000.– Don Down, "Aegeria", 16 Woodend Close, Thundersley, Benfleet, Essex SS7 3YA.

New Vice-county records of Lepidoptera for the Isle of Wight during 1999

On 15 October 1999, Terry Rogers, on holiday here from the Shetland Islands, captured the first example of the noctuid *Dryobota labecula* (Esper) for mainland Britain at Freshwater; I was fortunate enough to take a second on 22 October in my garden, also at Freshwater. This species has evidently spread northwards in mainland Europe in the past few years and its arrival in Britain was perhaps predictable, having been added to the list for the Channel Islands in 1991 and now clearly resident there (see Burrow, 1996. *Ent. Rec.* **108**: 136-137).

On 8 January, a micro-moth emerged from a box containing various pupae and this was later identified by Dr John Langmaid as *Niditinea fuscella* (L.) – another new Isle of Wight record. On 14 June, Dr David Biggs found a pupa in a galled twig of *Salix cinerea* at Shide Chalk Pit. This transpired to be *Cydia servillana* (Dup.) and is also new to the Island list. Later, on 7 July, Dr Biggs found an adult *Elachista* at Luccombe, which was subsequently identified as *Elachista luticomella* (Zell.) by Dr Langmaid and is yet another new record for the Isle of Wight. Finally, on 14 November, I recorded an example of *Blastobasis decolorella* (Woll.) at Freshwater, and took another two weeks later on 26 November - another new Vice-county record.– S. A. Knill-Jones, Roundstone, 2 School Green Road, Freshwater, Isle of Wight PO40 9AL.

REDISCOVERY OF THE NARROW-BORDERED BEE HAWK-MOTH (*HEMARIS TITYUS*) (L.) (LEP.: SPHINGIDAE) IN BRECKLAND

ANDREW J. MUSGROVE & MICHAEL ARMITAGE

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ON 21 MAY 1999, at around 13.00 hours, AJM and MA were birding/insecting in an area of the Brecks. The first Marbled Clover *Heliothis viriplaca* (Hufn.) of the year had been recorded, as well as several Mother Shipton *Callistege mi* (Clerck). Whilst returning to the car, an odd-looking bee flew past which on further observation soon resolved itself as being a bee hawk-moth (*Hemaris* sp.). The moth was frequenting an extensive patch (approximately 30 x 20 metres at its widest) of ground ivy *Glechoma hederacea* in dappled shade on the edge of some open woodland (an area which appeared to have been recently cleared). It was soon joined by at least one more bee hawk-moth.

It was immediately assumed that these were Broad-bordered Bee Hawk-moths *H. fuciformis* (L.), a species which occurs widely (although not commonly), in the Brecks. We netted one of the moths and took it back to The Nunnery to photograph. However, upon checking the few moth books we had in the BTO library, it soon became apparent that the moth we had netted looked far more like a Narrow-bordered Bee Hawk-moth *H. tityus*. The relatively narrow dark borders to the wings (particularly the hindwing), were apparent, but this obviously seemed to be a feature which was subject to wear and thus not completely reliable on a single individual. However, of far more interest was a feature mentioned in Pittaway (1993) which was that *H. fuciformis* has a forewing discal cell that is longitudinally dissected by a fold whereas *H. tityus* has an undivided forewing discal cell. This separating feature is clearly visible in the plates of that book, as well as in Skinner (1984), Brooks (1991) and the painted plates in Chinery (1991). The moth we had in front of us had an undivided discal cell and was therefore clearly *H. tityus*. It seemed likely that this feature should be 100% reliable. In addition, the dark band on the abdomen appeared more diffuse than on plates of *H. fuciformis*.

After cooling the moth in the fridge, AJM took a series of photographs in the office. AJM returned to the site at around 16.00 hours that afternoon and saw two more bee hawk-moths around the same patch of ground ivy, although neither could be netted. The sun soon went in and the hawk-moths disappeared. Further sightings were made at the site the following week, with one at noon on 24 May, at least three (and probably five) on 25 May and one in a spider's web (and released!) on 26 May. Photographs in the field were taken by Richard Bashford. All of the bee hawk-moths caught and released showed the same distinguishing features of *H. tityus*, i.e. the undivided discal cell in the forewing, narrow dark borders to the wings and a diffuse abdominal band.

We also notified the Norfolk and Suffolk Moth Groups. Tony Prichard of the SMG immediately phoned back and confirmed that this was an extremely rare insect in eastern England. He did (quite sensibly) express the view that it was more likely

to be *H. fuciformis*, given the relative abundance of each species in the Brecks, and asked us to keep the specimen. Despite our certainty that the moth was *H. tityus*, inspection by several members of the Suffolk Moth Group proved inconclusive.

AJM spoke soon after to Paul Waring who expressed great interest and asked for larval searches to be carried out on devil's-bit scabious *Succisa pratensis* at the site. Since the scabious was not in flower, and we had fairly modest botanical abilities, this proved difficult and many fruitless hours were spent searching through the vegetation. The searches were initially unsuccessful, partly due to uncertainty about which was the correct plant and also probably due to searching a little too early. However, Tony Prichard visited the site on 19 June and after much searching found a single small larva of *H. tityus*, about 500 metres away from where the adult moths had been seen. Following this success, AJM, MA and Richard Bashford went to the same area at lunchtime on 21 June and located two small larvae of *H. tityus* on devil's-bit scabious, which were retained to rear in captivity. MA, PW and TP also spent over two hours searching on 25 June and located just one *H. tityus* larva. Photographic records and habitat details were taken by PW. One of the retained larvae didn't survive for long, but the other did well and devoured large amounts of devil's-bit scabious that were provided, before pupating on 14 July 1999.

The site will be monitored again during spring 2000 to try to establish the local abundance and range of the species. Although we would like other observers to be able to come and enjoy watching the moths, we feel it is prudent for the moment at least that the location of the site is not published, given the apparently exceedingly rare nature of this species in the east and the greater risk of over-collecting for a day-flying moth which congregates at discreet nectaring sites. We would urge any readers who do become aware of the site to keep it quiet for the time being, until the population can be properly assessed.

However, it seems possible that the species may well be present at a low level in other parts of the Brecks and we would urge other observers to try to get a good look at any other bee hawk-moths in the region. In particular, the value of the discal cell feature seems not to have been emphasised enough in the literature and, if the moth is netted, is relatively easy to observe. It should therefore be straightforward to identify the moth with confidence.

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Reminder: The Orange Upperwing *Jodia croceago* (D. & S.) survey

The Orange Upperwing survey – autumn 1999/spring 2000 was detailed in *Ent. Rec.* **111**: 244-247. Please remember to forward any data referring to searches for this species (including any negative results), to Adrian Spalding at Tremayne Farm Cottage, Tremayne, Praze-an-Beeble, Cambourne, Cornwall TR14 9PH.

A CENTURY AND A HALF OF PEPPERED MOTHS

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IN PARTS OF Britain, the frequency of melanic forms of the Peppered Moth *Biston betularia* (L.) experienced a spectacular increase during the 19th century when melanic frequencies in other moths also increased. However, the species have responded in different ways to recent environmental changes, with the melanic form *carbonaria* Jordan of *B. betularia* undergoing a striking decline over the last two decades. Contributions to the entomological literature played a major part in demonstrating the patterns of change in both periods.

During the nineteenth century observations by various collectors were published independently (e.g. Stephenson, 1858; Edelston, 1864; Cooke, 1877; Chappell, 1886). Tutt (1891) noted the association of melanics with more humid regions and the possible advantage conferred by camouflage in the presence of visual predation. Bateson (1900) requested current and historical information from collectors in order that the pattern of change could be pieced together. The results were published by Barrett (1901) and by Doncaster (1906). These reveal increasing frequencies of melanics in towns and cities of the north of England from the middle to the end of the 19th century, by which time populations comprised over 90 per cent *carbonaria*. South of this industrial heartland, melanic forms increased in frequency at a later date, although they never rose in the rural West and Southwest. Steward (1977) mapped the dates of first records, which seem to show a migration into the more polluted regions south of the Severn-Wash line in the late 19th and early 20th century. The pattern of change was largely achieved by then.

Although the evidence showed some clear trends it was incomplete and patchy. There were very few quantitative records of early changes, partly because little attention was then paid to numbers. H.B.D. Kettlewell provided a quantitative picture by coordinating national surveys in the 1950s to the 1970s (Kettlewell, 1958, 1965, 1973). Kettlewell (1973) listed 175 recorders who contributed to his Appendix C, and these surveys revealed an essentially unchanging pattern.

Over the last two decades industrial environments have become cleaner and melanic frequency has declined. An invaluable record of the change was made by Sir Cyril and Lady Clarke at a site in north-west England (Clarke *et al.*, 1990, 1994; Grant *et al.*, 1996). This consists of yearly estimates of melanic frequencies based on large samples examined from 1959 to the present. Less complete series have been obtained for other parts of the country (Mani and Majerus, 1993; West, 1994; Grant *et al.*, 1998; Cook *et al.*, 1999). The increase and decrease in *carbonaria* frequency in the Manchester area over one and a half centuries is shown in Figure 1. Declines have also been observed in the Netherlands (Brakefield, 1990) and in the United States (in *B. b. cognataria*, Grant *et al.*, 1998). The recorded changes clearly demonstrate the selective process in action (Grant, 1999). Where figures from 25 years ago can be compared with those from the last few years, a striking pattern emerges. Cook (*in press*) analyses these changes in more detail. Figure 2 gives a

general indication of the trend. The points would lie along the diagonal line if there had been no change. The line through them has a slope of 0.257, indicating that on average frequencies are now only a quarter of what they were. Where *carbonaria* was already rare it has declined little, but where it was at high frequency the change has been as rapid and extreme as any that occurred during the nineteenth century. Industrial melanism in the Peppered Moth is coming to an end.

The Peppered Moth story is a celebrated example of a change in gene frequency under selection, that is, of the raw material of evolution. Two points cannot be stressed enough. First, our knowledge of the changes has, and will continue, to depend significantly on the work of those who record local occurrences. All information obtained is worth publishing, as individual records which apparently contribute nothing may illustrate patterns when combined with others. Second, the precise reasons for changes are not fully understood. The story has been recently discussed by Majerus (1998), who points out the gaps in our knowledge. Selective predation by birds is probably the most important cause of change, but just how selection relates to the moths' resting background (Mikkola, 1984; Howlett and Majerus, 1987) needs further investigation, as do factors unrelated to appearance, such as differential pre-adult survival (Creed *et al.*, 1980) which may also influence gene frequency.

In trying to unravel the causative agents we are hampered by the fact that even the ecology of the species is incompletely known. Models which predict the patterns reasonably well assume low population densities and high migration rates (Cook and Mani, 1980; Mani, 1990). More observations relating to numbers and movement would be of great value. In this context, it is worth reporting some data on trapping

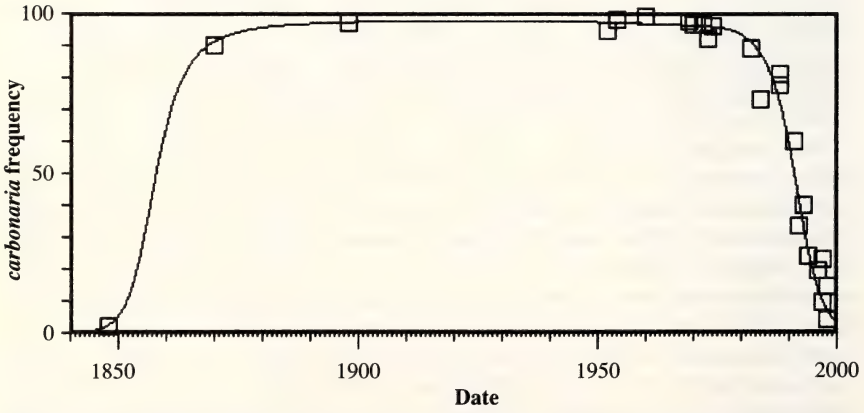

Figure 1. The apparent change in frequency of the *carbonaria* form of the peppered moth in the Manchester area. Data taken from a variety of sources summarised in Kettlewell (1973), Bishop *et al.* (1978) and Cook *et al.* (1999). The first three points are based on impressions by contemporary writers, the rest on samples of varying sizes.

success by students with no special interest in Lepidoptera. In a survey run by Dr M.E. Varley for the Open University, students were provided with mercury vapour light traps, asked to run them over one or two periods of five nights each and to record the numbers and types of Peppered Moths caught. These records were then returned with information on locality. From 1983 to 1987 one specimen of each of the forms collected was supplied for verification (Cook, Mani and Varley, 1986). The survey provided a random sample from a broad range of sites in the United Kingdom. Overall catch rate was quite low, never exceeding 0.4 moths per night. The maximum number collected in a 5-night period was 40 and the most common non-zero value was 1 (Table 1). There was significant heterogeneity between years ($P<0.001$), with particularly low densities in 1984 and 1987. As a rule females fly only if they fail to mate where they emerge. About 4 per cent of the voucher specimens were female, suggesting that such failure is quite common, which would be consistent with low average densities.

Table 1. Trapping success in Open University survey. Peppered moths caught in five-night periods of m.v. trapping at sights picked at random in the UK.

Year	1983	1984	1985	1986	1987
Total five-night trapping periods	984	1043	276	526	1033
Total moths caught	1292	521	475	1016	385
Mean catch per night	0.26	0.09	0.34	0.39	0.07
Per cent female in voucher sample	4.1	4.1	5.1	2.4	4.3

Students were also asked to state whether their collecting area was urban or rural. This classification is highly subjective since one person's town may look rural to another, but it does provide some indication of the nature of a site. In 1983 there were 502 rural and 482 urban sites. Of the sites with 6 or more insects, 45 (9.0 per cent) were rural and 13 (2.7 per cent) were urban. This difference is significant ($P<0.001$) suggesting that good catches are more likely to be made in the country than in town. Experienced observers such as the Clarkes may obtain hundreds of moths in a season (e.g. see Clarke *et al.*, 1990a, 1990b, 1994). Their daily records can now be consulted through the Manchester Museum. Over 35 years, their catch was more than 17,000 insects, less than 0.5 per cent of which were females (C. A. Clarke, personal communication). Traps are run for longer periods, however, sometimes with the added attraction of assembling females, and high densities probably indicate fortunate trapping locations. The general picture is of low densities, fluctuating from year to year with lower averages in urban areas and occasional localities of high abundance.

Almost all the work referred to above has benefited in some way from data provided by lepidopterists. This includes the early development of the pattern, the period of stability examined by Kettlewell and much of the evidence for decline. The evidence that different genotypes may have different survival rates (Creed *et al.*, 1980) comes from analysing published breeding results dating back as far as Greening (1863), before the birth of Mendelian genetics. Owen (1996) referred to the declining frequency and requested data on catches. The response allowed the change over the last 25 years in many parts of the country to be recorded (Grant *et al.*, 1998) and provides the majority of the points in Figure 2. The address for further data is given by Owen (1997). As the rise and fall of the melanic forms in the

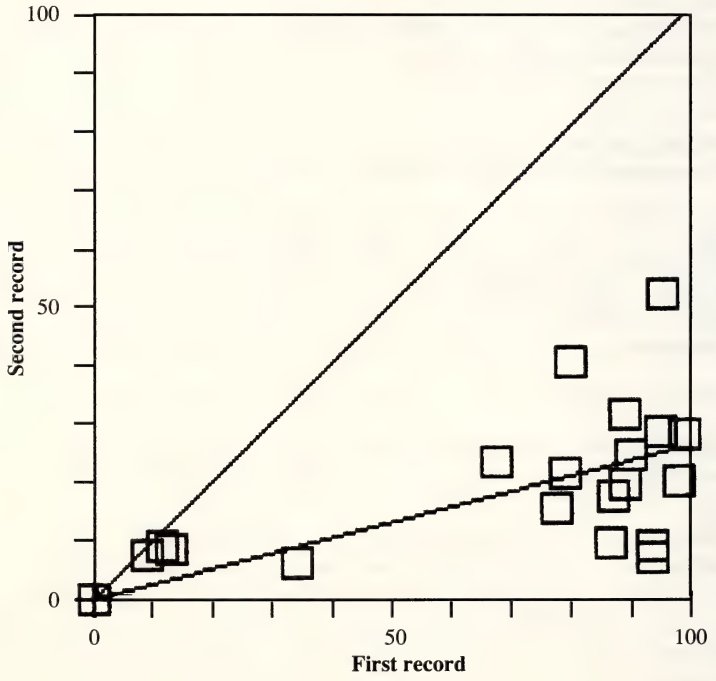

Figure 2. Frequency of *carbonaria* in *Biston betularia* about 25 years ago compared with recent frequencies for a range of British localities. Data from Mani and Majerus (1993), West (1994), Grant *et al.* (1998) and Cook *et al. 1999).*

peppered moth comes to its conclusion, records continue to be invaluable, either sent to a coordinator or published separately. Equally important are data from other species with melanic forms, which may or may not show parallel changes in frequency. The Scalloped Hazel *Odontoptera bidentata* Clerck and the Pale Brindled

Beauty *Phigalia pilosaria* ([D.& S.]) are of particular interest, because records exist of distribution of melanics at earlier periods. In both *P. pilosaria* (Lees, 1981) and *O. bidentata* (Cook and Jacobs, 1983 and personal observation) the response to changing conditions has been less marked than in the peppered moth. For all the species involved we still know too little about larval and adult ecology, adult resting positions, dispersal patterns and population density. Some years ago Majerus (1990) pleaded for data to be published. As he says in his book on melanism (Majerus, 1998), "There is, perhaps, no other field in which the amateur lepidopterist can contribute more usefully to scientific research with so little effort beyond that which they normally devote to their hobby".

Acknowledgements

I am grateful to R. L. H Dennis for helpful comments.

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Apeira syringaria (L.) (Lep.: Geometridae): a second generation specimen at Dartford, Kent in 1999

On 31 August 1999, a somewhat smaller than normal male specimen of *A. syringaria,* in perfect condition, was recorded at my garden m.v. light. Although obtaining second generation specimens in captivity is relatively easy, it is evident that wild examples are rare. Chalmers-Hunt (*Butterflies and Moths of Kent,* 1975, Supplement in *Ent. Rec.* **88**) gives no examples, but Collins (*Larger Moths of Surrey,* 1997) quotes two records for the period 1976 to 1996, one of which refers also to the London area.

Although the reporting the "out of season" records has always been a feature of entomological journals, it has become a more prominent feature since the widespread use of m.v lights, and static ones in particular. Despite the use of such lights for some fifty years, reference to suspected second generation *A. syringaria* seems to have been confined to the last eleven years. Those records which I have been able to track down are as follows:

27.viii.1989	Wiltshire, P. Waring (*Ent. Rec.* **102**)
5.x.1989	Wiltshire, P. Waring (*Ent. Rec.* **102**)
29.viii.1989	Addington, Surrey, B. Skinner (Collins, *op. cit.*)
21.ix.1989	Long Wittingham, Oxfordshire, D. Owen (*Ent. Rec.* **102**)
4.ix.1992	Milford, Surrey, D. Baldock (Collins, *op. cit.*)
26.ix.1994	Rothampsted, Hertfordshire, A. Riley (*Ent. Rec.* **110**)
1.x.1995	Binstead, Isle of Wight, S. Knill-Jones (*Ent. Rec.* **108**)
31.viii.1999	Dartford, Kent, B.K. West

Such sporadic "out of season" specimens are worth recording. During the 1970s, three supposedly second generation specimens of the univoltine *Campaea margaritiata* (L.) attended my garden m.v. light; they were portents of change – in the 1990s, the light has attracted over seven hundred!– B.K. West, 36 Briar Road, Dartford, Kent DA5 2HN.

The Yellow-legged Clearwing _Synanthedon vespiformis_ (L.) (Lep.: Sesiidae) in Greenwich Park

As there appears to be only a record "prior to 1900" of *Synanthedon vespiformis* for the Greenwich area (Plant, 1993. *Larger Moths of the London Area.* LNHS), it is worth reporting that on 24 August 1980 I observed an example flying about the base of a rather old, but sound, sweet chestnut *Castanea sativa* in the "Wilderness" in Greenwich Park, south-east London. Most likely, this moth occurs widely in the locality where, besides rather few oaks *Quercus* spp., sweet chestnuts (some of very great age), are the principal tree. Doubtless, however, it generally prefers stumps in which to breed; these are scarcely to be found in the park, for the chestnuts are very wind-resistant and virtually never get blown down, or felled. Clearly this moth is by

far the most polyphagous of our clearwings, though oak is normally the preferred pabulum. At Blackheath, also in the Greenwich district, I found it breeding in woody cankers on the trunk of a wych elm *Ulmus glabra* in 1972 (Allen, 1975. *Ent. Rec.* **87**: 47 - 49).– A. A. ALLEN, 49 Montcalm Road, Charlton, London SE7 8QG.

Lasius brunneus (Latr.) (Hym.: Formicidae) in Hertfordshire and its occurrence on Norway Spruce *Picea abies*

The ant *Lasius brunneus*, known in Britain since 1923, was first recorded in Hertfordshire in 1971. By the end of 1999, a gathering stream of records, most of them originating from a few observers and often not the result of systematic searching, had brought the Hertfordshire total to nearly twenty discrete localities. Most reports have been from the expected semi-natural woodland, parkland or hedgerow sites, but also included records of domestic infestations at Berkhamsted and in the house of the present writer's parents at Garston, near Watford.

L. brunneus is known to utilise a wide variety of deciduous trees for nesting, at least eleven different genera being quoted in Donisthorpe (British Ants, 1927). In 1996, trails were discovered on the trunk of a mature *Picea abies* in Whippendell Wood, near Watford, and later in the same year I located further trails on a similar specimen at Bricket Wood. Both localities are ancient woodland sites graded as SSSI status, and in both cases apparently suitable mature deciduous timber was present nearby. On 5 May 1999, at the Bricket Wood site, workers were present on all the mature *P. abies* trees that I examined, either on trails on the trunk or beaten from foliage. It is likely, although not certain, that nesting was taking place in at least one tree.

There seem to be few records of *L. brunneus* utilising coniferous trees, despite the presence of both ant and spruce in the Scandinavian countries, where such an affiliation might be expected to occur: Collingwood (*Fauna Entomologica Scandinavica*. vol 8, 1979) reflects other sources in stating "old trees, chiefly oak". In view of the growth in records of *L. brunneus* recently, both in Hertfordshire and elsewhere in southern England, those interested in the species should not confine their attentions solely to deciduous trees, and mature *Picea* in suitable habitat should be searched for its presence.– C. M. EVERETT, Wolfson College, Cambridge CB3 9BB.

Steve Church

The entomological community was saddened to receive the news of the sudden death of Steve Church from a heart attack on 11 January 2000, at the age of only 51. Steve's endless optimism and positivity served as an inspiration to all who came into contact with him. Although he contributed little to this journal (he always said that writing was something he planned to do in retirement), he made an outstanding contribution to entomology through his field work. Almost never going to known sites to collect rare species, he made constant searches for such moths at new sites and was constantly seeking moths presumed to be extinct by visiting their former sites and similar habitats nearby. He will be greatly missed by all who knew him and our sympathies go to Lucy and other members of his close family.

Colin W. Plant

GENETICS OF DORSAL HAIR-TUFTS ON THE CATERPILLAR OF *ORGYIA ANTIQUA* (L.) (LEP.: LYMANTRIIDAE)

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THE CATERPILLAR of the vapourer moth *Orgyia antiqua* has four distinct tufts of hairs on its body. These are located dorsally on segments IV to VII. The coloration of these tufts is usually yellow (Porter, 1997), but has been found to vary, showing shades of yellow, white, ochre and brown. One of us (JBJ) found a normal (yellow) caterpillar of *O. antiqua* in his garden. This was fed up on garden *Bergenia* (the pabulum on which it was found) and, after pupation and subsequent emergence, the resulting wingless female was left outdoors for 24 hours in the hope that a wandering male would find it and impregnate it. This was successful, and an egg batch was obtained from her. Some of the resulting caterpillars were kept for rearing purposes and the rest were released back into the garden. At this stage it was planned to mate the siblings to see if any recessive varieties of the moth would ensue. After the first couple of instars, however, it was apparent that there were varieties aplenty in the larvae themselves; this variation being in the coloration of the hair tufts for which this species is noted. It was decided to record the colours of the four main tufts which are placed dorsally on segments IV to VII and then to mate some of these varieties in order to disentangle the underlying genetics. It was apparent that the colours of the two tufts on segments IV and V segregate separately from the other two tufts. These pairs are shown as S and R diagrammatically on figure 1.

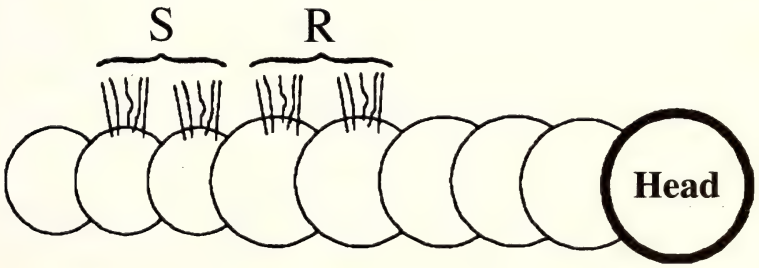

Figure 1. Hair tuft groups R and S of the caterpillar of *Orgyia antiqua* (L.).

In normal individuals, all four tufts are bright yellow, but we found four main colour types in this sample - yellow, ochre, brown and white. Ochre varied in shading from near-white to near- brown and yellow occurred in various shades also. As a first approximation, these shades were scored as near as possible to the four colours mentioned above. The four main colours segregated as follows :

Colour of hair tuft group R	Colour of hair tuft group S	Number with this combination (total = 77)
Y	Y	18
O	O	10
B	B	5
W	W	9
W	Y	1
B	Y	8
O	Y	18
B	W	1
Y	O	1
W	O	1
B	O	5

Figure 2. Colour patterns in hair group tufts of larvae of *Orgyia antiqua* (L.). Y = yellow, O = ochre, B = brown, W = white. The larva of the female parent had both tuft groups yellow; the larva of the male parent is unknown.

Thus, of the seventy-seven individuals in this analysis, 42 were unicoloured (tuft groups R and S the same colour) and thirty-five were bicoloured (tuft groups R and S of different colours).

In addition, there were two teratological specimens - one with five tufts and one in which the tufts on segments V and VII were reduced in size and laterally displaced.

Successful matings were obtained from selected combinations when imagines subsequently emerged and the resulting egg batches were kept over the following winter. Most of these hatched, but disease struck early on. It became obvious that all of the stock would be lost and so the survivors were reluctantly released in the hope (vain, so far) of finding more descendants at a future date.

Those adults which did emerge showed no obvious morphological variation.

Discussion

The results obtained appear to be an example of multifactorial inheritance with possibly as few as two loci, though probably more, being involved in the production of hair tuft colour. Using standard biometrical analysis, we have attempted to force the data to fit the patterns obtained, but the assumptions made have relied too heavily on highly improbable combinations of genotypes for both parents to be given much credence. The final analysis must wait until more stocks can be obtained to generate more detailed data. It may well be that what we observed involves the break-up of a supergene in a local population which controls the colours of all the hair tufts on the caterpillars.

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LIPOSTHENUS LATREILLEI (KIEFFER) (HYM.: CYNIPIDAE) AND *TORYMUS CINGULATUS* NEES (HYM.: TORYMIDAE): INSECTS NEW TO IRELAND

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ON 4 JUNE 1999, the author visited the Burren, Co. Clare, to search for gall insects and mites. This is one of the most interesting areas in Ireland for the botanist. The Burren is an enigma for at first glance, there appears to be nothing but a barren expanse of limestone. However, it harbours wonderful plants. There is a juxtaposing of species which frequent lands within the Arctic Circle and others that are of southern extraction (Webb and Scannell, 1983; Nelson, 1991). These include mountain avens *Dryas octopetela* and dense-flowered orchids *Neotinea maculata*. Despite this richness, little work has been done on the plant galls. One of the best places to enjoy the Burren flora is the 10 kilometre coastal strip meandering from Black Head to Poulsallagh (Cabot, 1999). The author concentrated his efforts in this area where he had already discovered other rare Irish insects (e.g. O'Connor and O'Connor, 1982).

Along the roadside near Black Head (Irish grid reference M1410), the galls of the cynipid *Liposthenus latreillei* (Kieffer) were discovered on ground ivy *Glechoma hederacea* L. This species is new to Ireland. The abundant galls were in varying stages of development ranging in size from 4 mm to 18 mm. The plants were growing on both sides of the base of a stone wall and were mixed in amongst brambles *Rubus fruticosus* L. The discovery of *L. latreillei* was surprising, for the author had searched for this species in various other parts of Ireland with no success, despite examining thousands of plants. The distinctive galls were identified using Eady and Quinlan (1963) and Dauphin and Aniotsbehere (1993). Subsequent dissection of one of the larger galls revealed a cynipid pupa and a selection of the more mature galls were placed in plastic bags in an attempt to rear the causers, although the adults are known to fly in March and April. According to Darlington (1975), *L. latreillei* is a widespread species which is common locally in Britain.

On 21 July, a chalcid emerged from the largest gall. Using Graham and Gijswijt (1998), it was identified as a male torymid belonging to the species *Torymus cingulatus* Nees, an insect new to Ireland. This is a known parasitoid of *L. latreillei* and the only torymid known to attack that species. *T. cingulatus* has only been previously recorded from Austria, Czech Republic, Great Britain, Italy and the Netherlands.

In Askew's (1961) key to the Chalcidoidea associated with oak galls in Britain, *T. cingulatus* is included as a parasitoid of the galls of *Cynips divisa* Hartig, *C. longiventris* Hartig, *Biorhiza pallida* (Olivier), *Andricus anthracina* (Curtis), *A. curvator* Hartig and *A. kollari* (Hartig) (Hym.: Cynipidae). However this is a misidentification of the relevant torymid which is not referable to the true *T. cingulatus*. Instead, the correct taxon is *Torymus geranii* (Walker) (Graham & Gijswijt, 1998).

Voucher specimens have been deposited in the National Museum of Ireland.

Acknowledgements

The author is grateful to John, Ann and Kevin O'Connor for their assistance.

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The proboscis: the "Achilles heel" of hawk-moths in southern Africa

In the early months of 1950, whilst employed in Bulawayo, southern Rhodesia (now Zimbabwe), each evening I passed some large yellow tubular-flowered ornamental shrubs. Several large species of hawk-moth spent the short twilight hovering at the flowers to imbibe nectar; they included *Agrius convolvuli* (L.), *Daphnis nerii* (L.) and *Hippotion celerio* (L.) – well-known as immigrants to Britain. Commonly, when near a bush, a persistent fluttering noise, which did not abate upon approach, was found to emanate from a hawk-moth which had been entrapped by its proboscis, courtesy of a large praying mantis (Dictyoptera: Mantodea). This occurred almost every evening and in the morning a scattering of tell-tale wings beneath the bush bore witness to the success of the mantids (although bats may also have taken advantage of the situation?).

I have looked for evidence of this phenomenon elsewhere, but without success. Nor did I encounter it at Nassau, Bahamas, where a frequent evening pastime was to make the round of accessible *Frangipani* and other flowering shrubs where feeding hawk-moths would be silhouetted against the night sky immediately after dusk. In 1992, I revisited Louis Trichardt, northern Transvaal, but although the flowering shrubs in the hotel gardens attracted hawk-moths each evening they remained unmolested. Under somewhat different circumstances in a garden near Kpalimé, Republic of Tongo, the previous year, were several large specimens of what were possibly the same species of shrub that I had found in Zimbabwe, or at least a close relative. These were attended by the large black-and-yellow butterfly *Papilio menestheus* Drury, which imbibed at the flowers with rapidly vibrating wings,

seemingly with impunity; hindwing tails were invariably intact, even with slightly worn specimens.

This rather bizarre mode of predation may or may not be common or widespread, but at the Bulawayo site it was a common and successful behavioural routine, made particularly interesting in view of the large size of the moths, the successful grasping of so tenuous a feature and the subsequent drawing in of the prey. I have not seen reference to this mode of behaviour before, although Kirkpatrick (1957. *Insect life in the tropics*) refers to a large hawk-moth being held and lifted by a leg more than twelve inches several times before being overpowered by a preying mantis.– B.K. WEST, 36 Briar Road, Dartford, Kent DA5 2HN.

Death-watch beetles *Xestobium rufovillosum* (Degeer) (Col.: Anobiidae) in the wild

Like A. A. Allen (1999, *Ent.Rec.* **111**: 222) I was surprised by Dr W. M. Blaney's (1998, *Antenna* **22**: 190-200) comments on the status of wild populations of death-watch beetle. The species is, in fact, pretty generally widespread through the lowlands of England, wherever there are large old open-grown oaks. I am aware of records from parkland and field oaks from as far north as Yorkshire, e.g., from Beningbrough Park (grid reference SE 516586) in 1999.

This ignorance of the ecology and distribution of wild populations appears to be widespread amongst pest entomologists. A recent paper by S. R. Belmain, W. M. Blaney and M. S. J. Simmonds (1998, *Ent. Exp. Appl.* **89**: 193-199) states that "The natural death-watch beetle habitat is hypothesised to be limited to dead and dying trees". This misconception that death-watch beetle needs unhealthy or dead trees has been drawn to the authors attention, but I received no response.

The key habitat requirement of death-watch beetle is for accessible heartwood – the dead woody tissues which form the core of the trunk of any *live* tree of any size – and the beetle is perfectly capable of running through its life cycle in a living healthy tree, provided that there is access to the disfunctional, ie. dead, heartwood within. I am aware of literally hundreds of living, *healthy*, ancient oak trees with exit-holes in exposed areas of heartwood. Hickin (1981, *The Woodworm Problem.* Rentokil Library) is much more accurate when he states that "Its outdoor habitats consist of dead wood in trees or dead branches of several hardwood species where fungal decay occurs".– K. N. A. ALEXANDER, The National Trust, 33 Sheep Street, Cirencester, Gloucestershire GL7 1RQ.

Hazards of butterfly collecting – the non-turbulent priest – Ghana 1994

We left on KLM as usual, on a trip to Ghana via Amsterdam; KLM gave us good service and cheap prices; their Ghana office had also waived restrictions and penalties on changing dates of return flights. My wife was also on the flight, but this was in the good old days of smoking on board, so I was down in smoking, and she was up in non-smoking. I settled down with a *Guardian*, just off the press.

Soon the seat next to me was occupied by one of those tropicalized Catholic priests who have seen it all, with a safari jacket above the clerical garb. He was

obviously also going on to Accra, like so many others on the first KL flight out of Heathrow. We bade each other good morning, and I got on with the *Guardian*. Less than an hour later we taxiing to the Schipol terminal, and that was when I realized that my travel companion was not all that tropicalized; he nudged me: "The big airplane there, with the bulge in front, is that what they call a jumbo-jet? Do you think we shall fly in one?". I told him that, yes, it was indeed a jumbo-jet, but that, no, we would be proceeding on a MD-11.

We exchanged greeting in the airport and on check-in and then did what one does on long rides in aeroplanes, including leaving the smoking sin-zone to talk to Nancy, having a chat with our priest on the way back from each visit.

On arrival in Accra, it was clear that the priest was NOT in his element, so we roped him in: "Do you have a passport?". A UK passport was produced. "Do you have a visa – let me have a look?". He did have a valid Ghana visa, though it must be said that there are few places in Africa which are more lenient on such issues than Ghana. "Do you think they will want to see it?". We thought they probably would.

He was to be met by representatives of the Ghana Catholic Archbishopric. We still suggested he change some money – tomorrow was Sunday and the luggage line was so long that there was plenty of time (changing money before getting the luggage is a highly recommended practice). He came back a few minutes later: "They wouldn't take my money". We inspected his money – they were Scottish bank notes (his monastery was in Scotland). You would be lucky to have them accepted back home in Brixton! We exchanged them for UK notes (no discount demanded) and he got a fistful of cedis. He thought the baggage carrousel a most amazing thing, but the luggage eventually arrived.

We took him through customs; the thought that someone might want to look at his luggage really fazed him. We assured him that his clerical garb would stand him in good stead and that we normally did not allow customs officers to look at ours.

We were gradually learning a bit more about our new friend. He was a monk in a contemplative order in Scotland. During the past 30 years, he had left his isolated monastery only for occasional dental work. Now he was sent to Ghana since one of their fellow monasteries was a monk short (apparently eight monks was the absolute minimum for the functioning of a monastery).

We exited to face the chaos that is common to airports in all developing countries. More than 40 relatives and friends are there to greet every passenger, together vast numbers of taxi-touts, hotel-touts, money-touts, and just touts. A few hand-signals established contact with our own people, so we thought we had better just check on the Archbishop's crowd. No sign of them. But our poor monk was being drowned a crowd of touts. We went to the rescue. Pretty soon we were at the home of our local host, a British military officer giving technical assistance to the Ghana Army.

A nice cup of tea was soon prepared, the Archbishopric was contacted, and our monk began to relax. He was very, very grateful: "Your husband is an angel", he kept telling Nancy, who had the grace to nod and only raise her eyebrows slightly. After a second cup of tea, our people dropped off the monk; there had been a mistake in reading the KLM time-table.

Three weeks later, butterfly collecting in the Boabeng-Fiema Nature Sanctuary took us to the small town near which the monastery was. We went to visit. The monastery was beautiful, with well-manicured lawns and gardens. No costs had been spared. It could have been converted into a country club during a week-end (with a extra week for the golf course). I was reminded of the old quip: "You have no idea how much it costs the Congress Party to keep Gandhijee in poverty!". We were well received by the Father Superior. The good Brother was located. We had a long chat, the upshot of which was: "You know, Ghana is very different from Scotland!".

We were invited for dinner, which turned out to be accompanied by the readings about the good work of devout Catholics. As two people who have devoted our lives to the promotion of family planning and the use of condoms to combat AIDS, we were somewhat taken aback at sitting through a dinner to the background of the praise anti-abortionists: "And a further tribute to Hank O'Grady who picketed an abortion clinic in Memphis, Tennessee for 32 consecutive days", and so on.

We left just before vespers on good terms. If I ever need a bed in the area, I shall be most welcome. Father Superior was grateful for our help, the good Brother even more so. And they now had all the essential eight Brothers in place. I hate to think what would have happened had he gone missing! The monastery might have survived on emergency measures; the good Brother might not!– TORBEN B. LARSEN, 5 Wilson Compound, 2811 Park Avenue, Pasay City, Metro-Manila, The Philippines.

BOOK REVIEWS

Grasshoppers and crickets of Surrey by **David W. Baldock**. 112 pp., 31 distribution maps, 14 pages of colour plates, 2 pages of monochrome plates. 156 x 218 mm, hardbound, ISBN 0 9526065 4 2. Surrey Wildlife Trust, 1999. Available at £12 plus £2 postage and packaging from the publishers at School Lane, Pirbright, Woking, Surrey GU24 0JN. E-mail surreywt@cix.co.uk

The Orthoptera now join Butterflies, Larger moths, Dragonflies and Hoverflies in this well-thought-out and highly commendable series of books on the fauna of Surrey, though the title is a little misleading since the work also includes native cockroaches (three species) and earwigs (four species). Almost everything that needs to be said about the series has, probably, already been said in earlier reviews (*Ent. Rec.* **108**: 97 (butterflies), **108**: 329 (dragonflies), **110**: 147 (larger moths) and **111**: 150 (hoverflies) and there is little point in repeating the praise here.

Surrey is fortunate in possessing 30 out of the possible 35 British species of Orthopteroid insects within its boundaries and David Baldock has spent some thirty years studying these in the county before combining his knowledge with that of others (who are all acknowledged) into this splendid book. The work is comprehensive. It opens with notes on the structure and life-history of the Orthoptera (technically this should read Orthopteroidea, but it matters little and the difference becomes clear on the next page where the higher taxonomic relationship between the components of the group are indicated). It includes drawings of a "typical" grasshopper, cricket and cockroach, carefully labelling the body parts that are later referred to in the text. The present status of each species is then summarised in a single statement, such as

"Widespread and abundant" or "Very local in the extreme east", against both English and scientific names, so forming a county check-list. Notes on migrant species (there are genuine Surrey records for immigrant *Schistocerca gregaria* (Forshål) and *Locusta migratoria* (L.)) and on alien species (there are thirteen) follow. The fossil record, a history of Orthoptera recording in Surrey and identification are also covered and there is a fascinating chapter concerned with locating and identifying grasshoppers and crickets through the use of electronic bat-detectors. The colour plates illustrate all the Surrey species and coverage is evidently sufficient to justify the distribution patterns obtained.

There is much talk these days about Biodiversity, Local Records Centres and a host of issues that relate to these topics. Whilst the rest are still talking about it, Surrey is quietly getting on with it, and is now on its fifth book which combines the raw data on biodiversity, provided by naturalists, with the conservation responsibilities of the county wildlife trust. All involved are to be most warmly commended. That it is hard to fault any aspect of the work should come as no surprise. The experience of the author is supported by a now established system within the Surrey Wildlife Trust and these have clearly combined most effectively to eliminate errors. I happen to know that David Baldock is already working on the distribution of the aculeate Hymenoptera in Surrey and I truly hope that it will not be too long before this information joins that on Orthoptera in print.

Colin W. Plant

Provisional atlas of the longhorn beetles (Coleoptera, Cerambycidae) of Britain by **P. F. G. Twinn and P. T. Harding**. 96 pp., 63 distribution maps (60 covering individual species). A5, paperback, ISBN 1 870393 43 0 (incorrectly cited as 1 870393 40 0 inside front cover). Biological Records Centre, 1999. £5 inclusive of postage from Institute of Terrestrial Ecology, Monks Wood, Abbots Ripton, Huntingdon PE17 2LS. E-mail K.Threlfall@ite.ac.uk

This book is, it would seem, the first ever attempt to document in the literature the status and distribution of Britain's longhorn beetles – something I find rather surprising in view of the attractive nature and often comparatively large size of the insects. A map of overall coverage suggests that the group is popular, though the records thin out in Scotland and there are none from the Outer Hebrides or Shetland. Ireland is excluded from the work. Interestingly, the map showing number of species recorded per ten-kilometre square is almost a double of the map of recording effort; surely this suggests that almost all areas, and many species, are under-recorded. Nevertheless, there are some interesting patterns – by way of example, *Judolia cerambyciformis* (Schrank) is shown to be decidedly western and *Phytoecia cylindrica* (L.) markedly south-eastern. Records are mapped for prior to 1970 and for 1970 to 1998.

Under each map is a list of references under the headings of Threat status, Illustration, Description/key, Distribution and Biology and habitat; the references are listed in full at the rear of the book along with a list of record sources and the species index. At the front, an introductory section summarises knowledge, presents a synonymic checklist and discusses apparently extinct species and doubtfully native species before introducing the distribution maps. The work is presumably based to some extent at least on the data submitted by amateur entomologists to the national recording scheme and although I feel sure that the authors probably did more fieldwork themselves than the rest put together it is a shame that these contributors are not listed.

This is a welcome addition to the series of provisional distribution atlases being produced from the Biological Records Centre and, at only £5 inclusive of postage, is sure to find a home on the bookshelves of most of Britain's many entomologists.

Colin W. Plant

LACEWINGS IN LIGHT TRAPS

REQUEST FOR SPECIMENS DURING 2000

There can be few people who operate moth traps who do not encounter green lacewings at some stage. Although there are several species in Britain, one, *Chrysoperla carnea*, stands out as being the most numerous – a bit like the Heart and Dart of the lacewing world.

Unfortunately, this super-abundant species has recently been split into three – and all of these have now been found in Britain. This has, effectively, invalidated all the existing records and we have, at present, no real idea of the distribution of each of the three species. The three species can not be separated without recourse to the microscope and the boiling tube, unfortunately!

During 2000, I plan to accumulate as much green lacewing material as possible for examination during the following winter. I therefore invite readers of this journal to collect and send to me **all** of the green lacewings from their moth traps during the year 2000. Specimens are likely to be encountered from March to October. I really do want **all** the material – I actually do want to receive several thousands of specimens and be confronted with a huge storage problem. Material from Ireland and Scotland is especially welcomed – Ireland is particularly under-recorded for all lacewing species.

Specimens can be sent in one of three ways – in alcohol (preferred), dry in paper triangles, or pinned and set. Please note that I will not return specimens unless specifically requested to do so and then only if return postage is enclosed. I will, however, provide each contributor with a list of names in due course, at no cost, provided that the sample is labelled with a locality name, a 10km grid reference and a date (or date band).

If sending material in alcohol or paper triangles, you can put all the catch together if you wish, since, unlike moths, there are no scales to rub off, and the bits that break off in the post are not needed for identification. Ideally each night's catch should be put in one tube/envelope, but weekly samples (or even monthly if you are really pushed for time) are better than nothing. Please put all of the lacewings in the tube/packet as the relative frequencies are also being examined. Don't forget to write the place, grid reference and date with the material. I am also interested in any brown lacewings, but these are an "optional extra" to the main project. You can send them to me at regular intervals or in one go at the end of the season. Please send to me at:

British Isles Lacewing Recording Scheme
14 West Road
Bishops Stortford
Hertfordshire CM23 3QP

AFRAID TO WRITE?

Have you discovered something that might be of interest to other entomologists, but are a little unsure if it is really worth printing? Or perhaps you think it is worth putting into print and are just not sure how to go about it?

If so, then this journal would like to hear from you. Almost all discoveries are of some interest – no matter how small. Very often an isolated observation can become more important when put with others.

In addition to the peer-reviewed papers, this journal also accepts shorter notes on the basis of their content, and has no interest whether the author is a professor of entomology or a road sweeper, nor in whether he or she can write perfect English. You do not have to have a computer to contribute – although we certainly do prefer contributions on disk or by e-mail. This should in no way put you off if all you have is an ancient typewriter. We even accept contributions that are hand-written if there is really no alternative. We will rewrite the note, if necessary, to conform to the house style. At present moment you will rarely have to wait for more than two months to see your name in print. If notes are not suitable for this journal, we can advise you of an alternative and forward them for you.

The main thrust of this journal is British moths (macro and micro) and butterflies, but we also carry material on beetles and other groups. European information of interest to British readers is also considered.

The Editor is always pleased to discuss potential contributions with first time authors and others and welcomes telephone calls on 01279 507697 (daytime or evenings up to about 10 pm). The editorial address is printed inside the front cover of this issue.

THE ENTOMOLOGIST'S RECORD

AND JOURNAL OF VARIATION

(Founded by J.W. TUTT on 15th April 1890)

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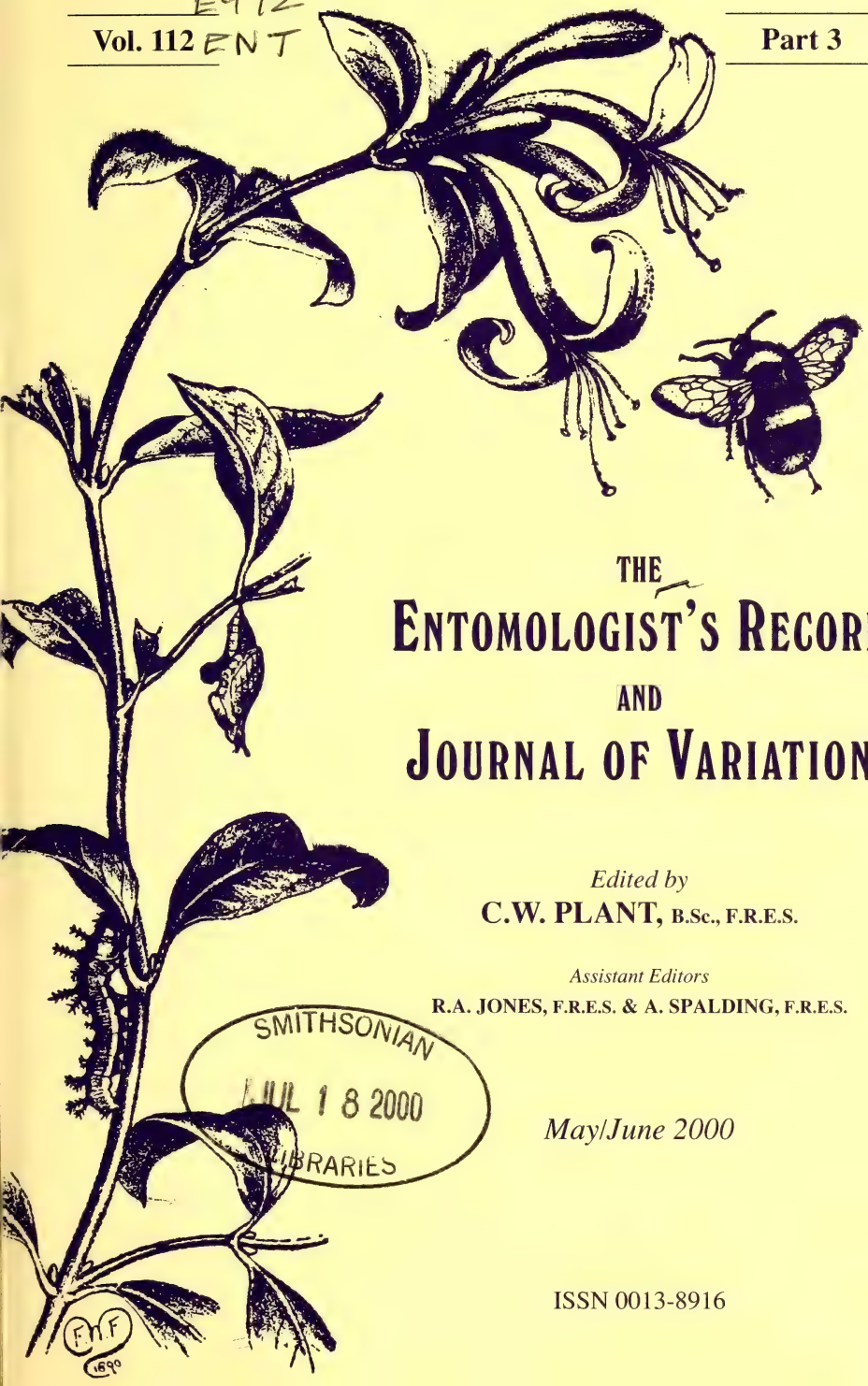

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A STUDY OF *GORTYNA BORELII LUNATA* FREYER (LEP.: NOCTUIDAE): RESULTS FROM THE FIRST SEASON OF BEHAVIOURAL OBSERVATION SESSIONS

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Introduction

FISHER'S ESTUARINE MOTH *Gortyna borelii* Pierret, 1837 ssp. *lunata* Freyer 1839 is a large noctuid moth, which has only ever been recorded in Britain from the North Essex coast, within the Walton Backwaters area (Skinner, 1998; Thompson and McClean, 1999; Hart, 1999). Subspecies *lunata* is darker in colour and larger in size than the nominate subspecies (Ippolito and Parenzan, 1978).

The genus *Gortyna* Ochsenheimer is closely related to *Hydraecia* Guenée (Heath and Emmet, 1983). *G. borelii* was initially identified as *Hydraecia leucographa* Borkhausen 1792, however, the name has since been found to be invalid due to an interpretation mistake (Ippolito and Parenzan, 1978).

G. borelii has a widespread, but very localised, European distribution, and is found at altitudes of up 1000m (Gyulai, 1987). It has been recorded from a number of locations in Southern and Central Europe, including central and southern France, Poland, Hungary, Germany and Portugal (Ippolito and Parenzan, 1978), whilst Karsholt & Razowski (1996) also list Italy, Hugary, Yugoslavia, Romania and Bulgaria. Populations in Central Europe are the subspecies *lunata* (Gyulai, 1987).

In Britain, *G. borelii lunata* is included in the *British Red Data Book* (Shirt, 1987) and protected under Schedule 5 of the Wildlife and Countryside Act 1981 (*vide* Thompson and McClean, 1999; Gibson, 2000). The moth's larval foodplant, Hog's Fennel *Peucedanum officinale*, is also listed in a UK Red Data Book. *Peucedanum officinale* is a rare and local species with a British distribution limited to only two main areas: the North Essex and northern Kent coasts (Randall and Thornton, 1996).

Gortyna borelii lunata was first discovered in Britain in 1968 when Mr J. B. Fisher took a specimen at a lighted window and, subsequently, two more specimens at a mercury-vapour light trap (Fisher, 1971). It has since been reported that, although this species can be found at mercury-vapour light, it has a particularly strong attraction for actinic light (Heath and Emmet, 1983). However, there have also been reports that this species is not drawn to light (Kovács, 1955).

Although there has been much interest in *G. borelii lunata* in Britain since it was discovered in 1968, there is still much to learn about the moth's basic biology. For example, where exactly does the *G. borelii lunata* lay its eggs in the wild? Why are there such high mortality rates between the small and large larval stages? Does the adult moth actually feed? And, what are the behavioural characteristics of the larval stages and the adult moth?

If answers are found to questions such as these then we will be in a much better position to secure the future of *G. borelii lunata* in Britain. The moth and its foodplant are both under threat from sea level rise, because the majority of the Essex

population of *P. officinale* grows below the two-metre contour line. Indeed, to secure the long term future of *G. borelii lunata* in Britain, the moth and its host plant will need to be established at sites further inland. To successfully establish new colonies we need to acquire a lot more information on the habitat requirements of both *G. borelii lunata* and *P. officinale*.

In September 1999, a three-year PhD study of *G. borelii* was commenced at Writtle College, Chelmsford, Essex. The study is partially funded by English Nature as part of their Species Recovery Programme, the Essex and Cambridgeshire Branch of Butterfly Conservation and the Environment Agency. The main aims of the project are to carry out a life history study on *G. borelii lunata* and to determine the moth's habitat requirements. The results obtained should enable recommendations for habitat management to be made for the existing colonies, and will enable us to be in a better position to establish new colonies successfully.

As the study was commenced in September 1999, it has as yet only been possible to observe the flight period of the adult moth. This paper presents the results from behavioural observations carried out in September and October 1999.

Methodology

G. borelii lunata was observed in the wild at a site within the Walton Backwaters area. Behavioural observations were carried out by observing the moth using torchlight (the behaviour of this species does not appear to be affected by torchlight). On sighting and identifying *G. borelii lunata*, the sex was established and it was then observed for a period of approximately two hours, or as long as it was possible to keep sight of the specimen.

A total of eight behavioural observation sessions were carried out during the flight period (mid-September to mid-October). Males were observed on three of these sessions and females on five. Each of the observation sessions was carried out at a different time between dusk and dawn, and over the course of the eight sessions, every hour between 19.00 hours and 07.00 hours had been covered.

At the beginning and end of each behavioural observation session, details of the weather conditions (temperature, wind direction and speed, and cloud cover), were recorded to enable an assessment of the impact of differing conditions on the behaviour of the moth to be made. The behavioural observation sessions involved recording the behaviour of the moth at one minute intervals, noting any changes in behaviour between these intervals.

The behavioural acts observed were categorised into the following specified groups: resting, wing movement, grooming, crawling, flying, and oviposition (see Table 1 for details). The duration of each behavioural category interval was calculated as a proportion of the observation period, and the results from observation sessions were presented graphically.

Results

The results illustrate that the male and female adult moth both have quite different behavioural characteristics. The behaviour of males tends to consist of resting until

approximately 23.00 – 24.00 hours BST, followed by wing movement and grooming before taking flight and being lost from sight (Fig. 1). A male was observed crawling on only one occasion.

Categorised behavioural act	Behaviour observed
Resting	Stationary: wings closed
Wing movement	Stationary; wings open (either still or flapping)
Grooming	Stationary; moving legs or antennae, or defecating
Crawling	Crawling only (wings may be still or flapping); not probing with ovipositor
Flying	Flight; completely airborne
Oviposition	Probing with ovipositor; eggs may or may not be being laid

Table 1. Explanation of categorised behavioural acts.

The behaviour of females was considerably more varied than that of the males and they also tended to be active much earlier in the night, from as early as 20.00 hours. Females were then active for intermittent periods of varying lengths right through the night until about 05.00 hours. After this time they crawled down amongst the vegetation and rested close to ground level. During the course of the night, females tended to be quite erratic in their behaviour, which was characterised by resting, crawling and oviposition bouts (Fig. 2).

When active, the behaviour of females consisted predominantly of crawling up and down vegetation, particularly grass, sometimes probing the grass with their ovipositor and frequently falling from the grass to the ground, making no attempt to fly. However, they were observed flying on two occasions, both of which were quite poor attempts, when they flapped around erratically and covered a distance of just one metre or so. Crawling behaviour was generally observed preceding and subsequent to oviposition bouts (Fig. 2).

Egg-laying was observed on five occasions, and on each occasion the eggs were deposited on Sea Couch Grass *Elytrigia atherica*. Females laid their eggs by probing between the grass stem and the outer leaf sheath of the grass (Plate A), and laying the eggs in a line tucked beneath the outer leaf sheath (Plate B). The eggs were laid at heights of between seven and fifty-five centimetres from ground level. The duration of egg-laying bouts varied from just five minutes to forty-eight minutes in length. The number of eggs laid per bout varied quite considerably; on one occasion at least one hundred eggs were laid.

The impact of weather conditions on the behavioural activity of the moth is difficult to assess, due to the small number of observation sessions carried out. *Gortyna borelii lunata* was, however, more active on nights when the temperature was above 10°C. Indeed, the moth remained almost completely stationary during observation sessions when the temperature was below 8°C.

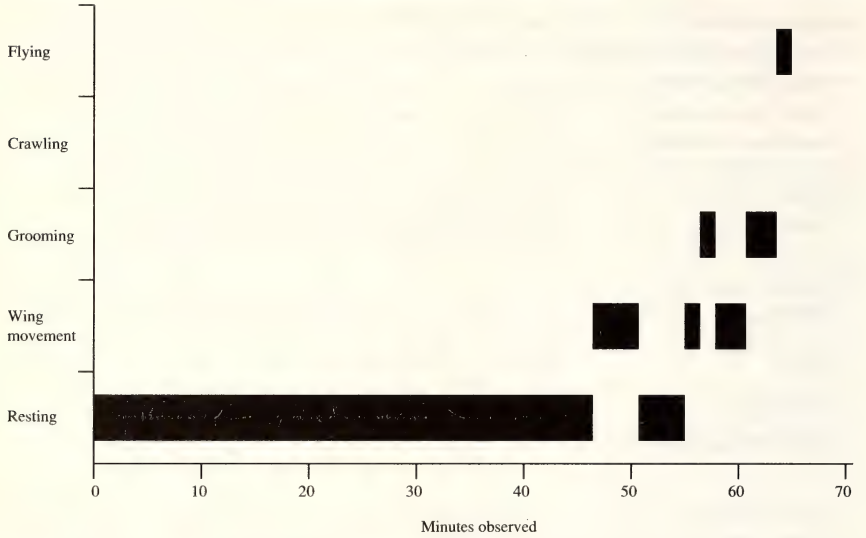

Figure 1. Male behavioural observation session. Observations were carried out on 29 September 1999 between 22.52 hours and 23.59 hours.

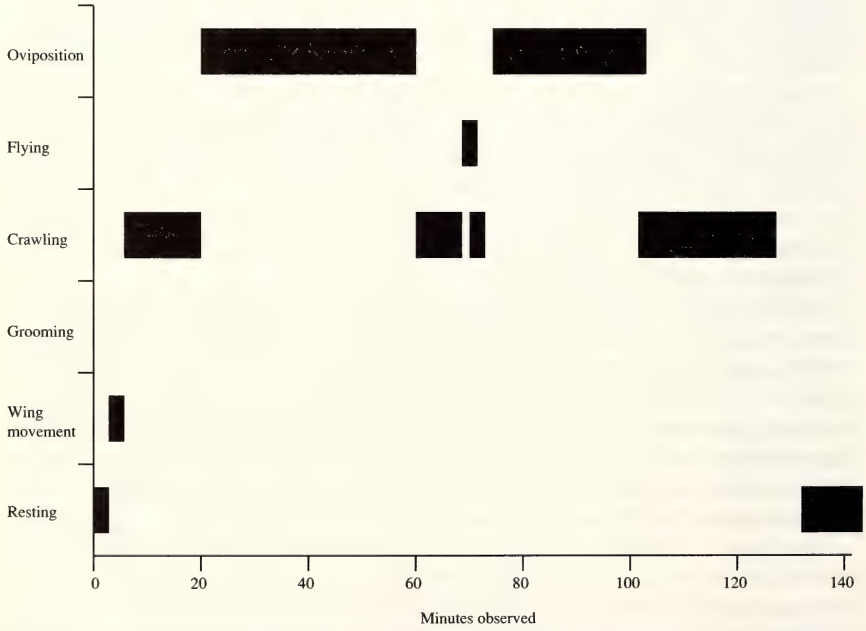

Figure 2. Female behavioural observation session. Observations were carried out on 8 October 1999 between 19.40 hours and 22.03 hours.

Discussion

The behavioural observation sessions have provided some important information on a species that is very poorly understood. Knowledge of the behavioural characteristics of *G. borelii lunata* will provide information that is necessary in determining the habitat requirements of this species. Although the behavioural observation sessions have as yet involved observing only one of the life cycle stages for a relatively short period of time, some important preliminary observations have been made, the most notable of which are the differences between male and female behaviour and the oviposition observations.

The oviposition observations that were made have already provided information that is important to the conservation management of the moth. Many of the sites that support *G. borelii lunata* are currently being managed under mowing regimes and current recommendations are that if the sites must be mown, this should be carried out when the moth is feeding and pupating underground in the August to September period (Hart, 1999; C. Gibson pers. comm.). However, the fact that *G. borelii lunata* has been observed ovipositing on a long grass species, *Elytrigia atherica*, may alter this recommendation, since mowing in August may prevent the grass from growing to a sufficient height for oviposition by the moth in mid September to October. An experiment to determine the impact of different mowing regimes on the abundance of the moth at specific sites will be carried out as part of this PhD study.

Hart (1999) observed that the most favoured sites for *G. borelii lunata* larvae were where *P. officinale* grows amongst long rank grass. In this study it has also been observed that the adult moth is more abundant in areas where *P. officinale* is growing amongst long grass. Consequently, factors such as grazing may have a negative impact on the abundance of this species. The impacts of grazing on populations of *G. borelii lunata* will also be investigated over the three-year duration of this study in a series of exclusion experiments.

Previous observations of *G. borelii lunata* oviposition have suggested that the moth lays its eggs within the leaf axils of the host plant, *Peucedanum officinale* (J. Firmin pers comm.). There have also been observations of the moth laying its eggs on dead grass stems, between the stem and the outer sheathing (Platts, 1981; D. Down pers comm.). It may be that the moth lays its eggs on both the host plant and the surrounding grass species. Consequently, further investigation into the egg laying preferences of this species at different sites is required.

As mentioned above, the genus *Gortyna* is closely related to the genus *Hydraecia*. The species *Hydraecia immanis* and *Hydraecia micacea* are both known to lay their eggs between the stem and leaf sheath of various grass species, particularly *Elytrigia repens* (French *et al*, 1973; Deedat *et al*, 1983; Giebink *et al*, 1984; Levine, 1986). This oviposition behaviour is very similar to that observed for *G. borelii lunata* during the behavioural observation sessions.

Over the next three years, the behavioural observation sessions will be continued on a number of different sites, and further details of the behavioural characteristics of the moth will be acquired. There are still many questions to be answered, such as

where and how far do males fly? What is the mating behaviour of this species? And, more observations on oviposition behaviour are still required. The other life cycle stages will also be observed in the forthcoming season.

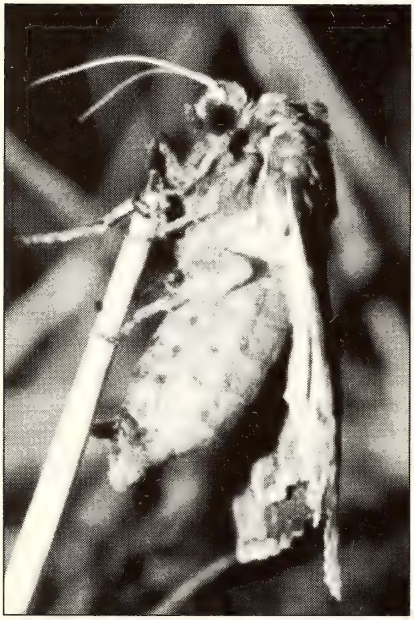

Plate A: *Gortyna borelii lunata* ovipositing on *Elytrigia atherica*

Photo credit: Micky Andrews

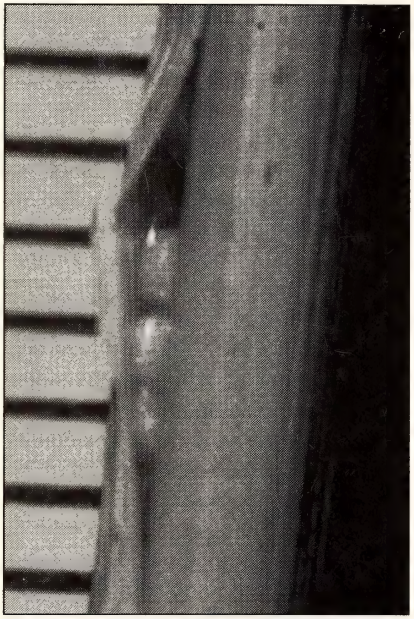

Plate B: *Gortyna borelii lunata* eggs laid on *Elytrigia atherica*. The horizontal lines on the left of the picture are at 1 millimetre intervals.

Photo credit: Micky Andrews

Advice requested concerning the breeding of captive stock

Part of the PhD study involves the establishment of a captive stock. This is to enable detailed life cycle observations to be carried out, and possibly to determine whether successive captive generations produce genetic differences in fertility, fecundity etc.

If you have had experience in rearing captive *Gortyna borelii* stock ZR would be very grateful if you could offer her some practical information and advice. It is important to note that the species has been protected since 1998 under Schedule 5 of the Wildlife and Countryside Act 1981, making it illegal, amongst other things to catch, kill or injure the moth in any of its stages, or to keep and rear specimens of wild origin, without a licence from English Nature. Any animal thus protected is deemed to be wild unless the contrary can be demonstrated. Captive-bred (not captive-reared) stock is not wild in this context. Thus, if anyone holds captive-bred stock, ZR would be pleased to hear from them. Experiences and observations will be of great value to further studies and, importantly, by registering details of the area of origin and dates of capture of the founder stock, the legality of your holding can be established as documentary evidence.

Acknowledgements

We would like to thank English Nature, the Essex and Cambridgeshire branch of Butterfly Conservation, the Environment Agency and Writtle College for providing funding for this study. We would also like to express our gratitude to the following individuals who have provided us with advice, information and help with fieldwork: Ian Black, Dr Malcolm Braithwaite, Duncan Bridges, Don Down, Robin Field, Joe Firmin, Ray Marsh, Gavin Sheill, Dr Paul Waring and Leon Woodrow. We are also grateful to an anonymous referee for suggesting various improvements to this paper.

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Unusual occurrences of the Orange ladybird *Halyzia sedecimguttata* (L.) (Col.: Coccinellidae) in the London Area, 1998-2000

In the afternoon of 7 March, 2000, Gill and Keith Walker noted large numbers of a "large, orange ladybird" while walking between Jack Hill and the Furze Ground, Epping Forest (grid reference TQ 4398). On the following day, Ken Hill verified the identification of large numbers of *Halyzia sedecimguttata*. Like most of central Epping Forest, the location consists primarily of large beech *Fagus sylvatica* trees with a few oak *Quercus* spp.; there is no under-storey and there are no sycamore *Acer pseudoplatanus* in the immediate vicinity. The beetles were mainly in clusters of up to a hundred, predominantly under branches, and in various concavities of the trunk and branch stumps. Only a few individuals were seen on oak trees. Subsequent examination of leaf litter revealed no ladybirds, but large numbers were found in deposits of beech mast often huddled together within the shells. No examples were seen on mouldering deadwood. On 8 March, many ladybirds were seen to take flight and numbers had reduced considerably, but by 11 March hundreds still remained, though with maximum cluster size around twenty-five. On that date, sunny but with a cool wind, flight started after 10.30 hours.

This incident was discussed amongst local naturalists and Jeremy Dagley, Ecologist for Epping Forest, noted that a similar large aggregation had been found by Amanda Samuels in the early spring of 1998 on old, pollarded beeches at High Beach (TQ 4097) about three kilometres to the east of the other find. This population has persisted, but the aggregations are largest and most notable during March-April. There have been several other finds this year, including one in Walthamstow Forest (TQ 3990) which was on oak, all other Epping Forest sightings being on beech.

This mycetophagous beetle was formerly considered uncommon, even nationally scarce although Majerus *et al* (1997. The geographic distributions of ladybirds (Coleoptera: Coccinellidae) in Britain (1984-1994). *Ent. mon. Mag.* **133**: 181-203), demonstrated that this was largely artefactual. There is a general consensus amongst coleopterists in the London area that *H. sedecimguttata* has become more frequent and numerous over the last decade. Nonetheless, it is still relatively less recorded than several other ladybirds. The current London and Essex ladybird surveys recorded eight reports in 1999, four of these were in Epping Forest and only one in urban London. Aggregation has been reported only rarely; Majerus & Williams (1989. The distribution and life history of the Orange ladybird, *Halyzia sedecimguttata* (L.) (Coleoptera: Coccinellidae) in Britain *Ent. Gaz.* **40**: 71-78) noted small, over-wintering clusters and only eight incidences of more than 100 individuals to a site, most of these being on sycamore from one area of Norfolk/Suffolk. The very large populations in Epping Forest therefore seem exceptional and are probably linked to the recent mild winters and wet summers. Buchsbaum (1999. Massenanflug von *Halycia sedecimguttata* (Linnaeus, 1761) in Istrien (Croatien) (Coleoptera, Coccinellidae). *Mitt. Thur. Entomologenverband.* **6**: 46-48), who points out that the species has Red Data Book status in some German states, regarded a large population in 1998 from Croatia as exceptional; he is not aware of any other large records from middle or southern Europe subsequent to his note.

My thanks to Gill & Keith Walker, Ken Hill, Jeremy Dagley and other Epping Forest staff for observations and information, to John Muggleton, Roger Hawkins and Ulf Buchsbaum for providing references and to these and several other coleopterists for their advice and opinions.– PAUL R MABBOTT, 49 Endowood Road, Millhouses, Sheffield S7 2LY.

Some autumn and winter observations of *Halyzia sedecimguttata* (L.) (Col.: Coccinellidae) with notes on a concentration of wintering ladybirds

On 24 October 1999 a concentration of ladybirds was discovered gathered upon fence posts along the margin of a small secondary wood near Whittlesford, Cambridgeshire. Present among them were at least 25 examples of the Orange Ladybird *Halyzia sedecimguttata*. The posts were beneath overhanging Sycamore *Acer pseudoplatanus*, a tree favoured by this species. Other familiar ladybirds were also present, notably large numbers of Sixteen-spot *Micraspis sedecimpunctata* (L.).

A return visit was made to the site on 6 February 2000, in an effort to arrive at a clear estimate of the number of wintering ladybirds present. The insects were found to be utilising some 400 metres of (mostly) wooden posts of varying diameter, and almost without exception were facing between north-east and south (the sides facing the wood). This observation parallels previous records reported by Adrian Fowles (Majerus, 1994. *Ladybirds*. New Naturalist's Series, HarperCollins, pp. 93-94). Fowles' interpretation, endorsed by Majerus, is that the ladybirds are taking up positions sheltered from prevailing south-west winds.

There were indications that wood which had been treated with timber preservative, as some of the larger posts had been, were unpopular. On this occasion only eight *H. sedecimguttata* were located. Most of these were on the posts themselves, either in exposed positions (but usually in company with other coccinellids), or in sheltered crevices, with one on the underside of a fence wire; one individual was active.

By far the most numerous species present was *M. sedecimpunctata*: extrapolating from a series of counts and estimates suggested that a total in excess of 50,000 were utilising the fence posts and the grass and other vegetation at their bases; it is likely that more were using this latter habitat than could be observed. Large aggregations of *M. sedecimpunctata* is not unusual – this species habitually forming large over-wintering aggregations (Majerus *op. cit.*). Also present were 20 Seven-spots *Coccinella septempunctata* (L.) in a variety of locations and positions, just one Two-spot *Adalia bipunctata* (L.), and a single Kidney-spot *Chilocorus renipustulatus* (L.) active on a fence in the wood itself.

On 16 January 2000, a single *H. sedecimguttata* was discovered wintering inside a telephone box, of the modern open design, at Bricket Wood, Hertfordshire, a semi-natural woodland locality where the species has previously been recorded. The individual had adopted an inverted position against the roof of the box, similar to that employed by this and other ladybirds when utilising natural wintering sites on the underside of tree branches. It may be speculated that the insect had originally been attracted by the light, as moths often are to this and other public telephones.

This suggestion is supported by previous records of ladybirds attracted to moth traps (Majerus, 1990. Ladybirds at light. *Bull. Amat. Ent. Soc.*, **49**: 197-199). Majerus notes that *Halyzia sedecimguttata* is more strongly attracted to light than other British ladybirds. I am grateful to Dr Mike Majerus for his helpful comments, via the Editor, on the initial draft of this note.– C. M. Everett, Wolfson College, Cambridge CB3 9BB.

The ladybird as a twinkle in the eye of an angel

The Orange Ladybird *Halyzia sedecimguttata* (L.) was once regarded as rather uncommon and, although it is now known to be quite widespread, it is nevertheless a handsome insect and not one to be come across every day. It is a striking yellowish orange, with pale creamy white spots and has a strange transparent rim at the sides and front of the thorax, extending out over the head.

Fowler (1889. *The Coleoptera of the British Islands* **3**: 166) and Joy (1932. *A practical handbook of British beetles*, p. 522) both describe the Orange Ladybird as "local", unusual for a ladybird since most species are very common and widespread. A tentative list of scarcity statuses put about by Hyman (1985. *A provisional review of the status of British Coleoptera.* Invertebrate Site Register Report **60**: NCC), suggested that it might even be considered as nationally scarce (Notable B, i.e., recorded from between 31 and 100 of the ten-kilometre squares of the National Grid). However, during the 1980s, *Halyzia* seems to have been recorded more often. Provisional Notable status was not confirmed when the final review of scarce and threatened beetles was produced by Hyman and Parsons (1992. *A review of the scarce and threatened Coleoptera of Great Britain.* UK Nature Conservation **3**: JNCC).

There is no doubt that some of this increased recording was due to the fact that a specific association with sycamore *Acer pseudoplatanus* trees was first noticed at this time. The Orange Ladybird is a mildew (mould) feeder, rather than an aphid predator, and sycamores seem to be particularly prone to mildew on their leaves. Once this fact was known the ladybird was much more often recorded.

The Orange Ladybird's over-wintering habits are usually described as in leaf litter, on tree trunks or in ivy clumps, especially near sycamores (Majerus, 1994. *Ladybirds*. New naturalist **81**: Harper Collins), and although small aggregations of over-wintering Orange Ladybirds are recorded they are not frequent. I was intrigued, therefore, to find several specimens huddled together on various gravestones and, in particular, on a stone angel, a delicately carved and gently lichen-encrusted Victorian headstone, in Nunhead Cemetery, south London, on 1 January 2000.

Six of them, together with a specimen of the Pine Ladybird *Exochomus quadripustulatus* (L.) were snuggled together in the angel's hairline, others were resting under her ear and on her neck, and one was tucked into her eye socket.

Ladybirds are steeped in myth and metaphor. From signs of good luck to omens of imminent matrimony, from the gardener's friend to the child's delight, these pretty beetles are welcomed and celebrated by all. But has anyone ever thought to describe a ladybird as a twinkle in the eye of an angel?– Richard A. Jones, 135 Friern Road, East Dulwich, London SE22 0AZ.

Over-wintering aggregations of the Orange Ladybird *Halyzia sedecimguttata* (L.) (Col.: Cocinellidae) on trees in the garden at Buckingham Palace

Just before Christmas 1999, staff in the garden at Buckingham Palace, London became aware of unusual concentrations of an unfamiliar ladybird on several trees within the boundary walls. These were brought to the attention of ML who made extensive notes on the phenomenon. Several examples were sent by him to CWP whereupon they were identified as *Halyzia 16-guttata* – the Orange Ladybird.

The ladybirds were gathered on six trees occupying an area of approximately 12 x 15 metres measured at trunk level. On three of these – a *Fagus sylvatica "Dawyk"*, a *Sorbus commixta* and a *Crataegus x mordensis "toba"*, the insects were distributed as singles or in pairs and widely scattered. Several examples of the Pine Ladybird *Exochomus quadripustulatus* (L.) were also found in association with these *Halyzia*. On a *Celtis pumila* tree, only six examples were found, but the remaining two trees in the group had much larger numbers. An *Ostrya carpinifolia* supported over a hundred Orange Ladybirds, scattered in ones, twos and groups of up to twelve over the whole tree, but mainly on the undersides of branch/stem axils. The final tree, a *Fagus sylvatica "rotundifolia"* had over 300 Orange Ladybirds scattered in groups all over the tree, from a few millimetres above the ground all the way up into the crown, and positioned towards all points of the compass. The insects were still on the trees on 9 February 2000, though they were not in a fixed place and occasionally moved around.

A tube of Orange Ladybirds passed by ML to CWP contained 98 examples. Although the release of live insects away from the area where they were captured is generally to be severely frowned upon, the mass murder of 98 ladybirds was not regarded as an option! Six vouchers specimens were retained and then, because the overnight temperature in CWP's garden was dipping to -5°C at the time, the remainder were placed, in the tube, inside a fridge at 4°C for a few days. As soon as the weather had improved, the cap was removed from the tube and the tube rested horizontally amongst the ivy growing up the wall by the back door. Daily examination showed that, apart from two examples that were evidently dead, the ladybirds remained as a loose group, moving around within a radius of about 0.25 metres of the tube, whilst overnight minimum temperature stayed at or below 1°C. As the temperature rose above this in February, to an overnight minimum of 2°C or above, the ladybirds started to disperse over a wider area. On the 8 February 2000, after an overnight minimum of 5°C, none could be found on the ivy and the insects are presumed to have dispersed during the day, which rose to a sweltering 13°C! All temperatures recorded here are shade temperatures.

The Orange Ladybird was considered a relatively scarce insect, though it appears to have become more numerous the last three or four years, if the records are anything to go by, and is now certainly well-represented in London. It has a known association with sycamore trees *Acer pseudoplatanus*, although it is frequently found on other trees (particularly smooth bark trees), during the winter (Majerus and Williams, 1989. The distribution and life-history of the orange ladybird (*Halyzia 16-guttata* L.) (Coleoptera: Coccinellidae) in Britain. *Ent. Gaz.*, **40**. 71-78; Majerus,

1994. *Ladybirds*. New Naturalist's Series, HarperCollins, p. 93). There are several sycamores in the vicinity. Unlike most other British ladybirds, it feeds on various mildews on the leaves.

We are most grateful to the gardening staff at Buckingham Palace for noting the ladybird aggregations and drawing them to our attention, as well as for ensuring that the aggregations were not disturbed during the course of various winter gardening works taking place. We are also indebted to Dr Mike Majerus for his most helpful comments on an earlier draft of this short note and we have incorporated all of his comments where the information was available.– MARK LANE, Buckingham Palace, London SW1A 1AA and COLIN W. PLANT, 14 West Road, Bishops Stortford, Hertfordshire CM23 3QP (E-mail: Colinwplant@compuserve.com).

A January Spruce Carpet *Thera britannica* (Turner) (Lep.: Geometridae)

On the morning of 19 January 2000, I arrived at Highgate Wood, Middlesex (grid reference TQ 283887) to inspect the first catch of the new millennium in the moth-trap which I have run there every year, if on a somewhat irregular basis, since 1984. The disappointment of finding only one specimen soon deteriorated to self-doubt at finding nothing comparable to it in the pages of *Skinner* except a Spruce Carpet *Thera britannica*.

Since the text-books assured me that this species flies in May-June and August-September, and the larva fed up on spruces and firs in the autumn, hibernated when small, and fed up the following spring, I apologetically sent it to Colin Plant, who both reassured and surprised me, and himself, by confirming that it was, indeed, *britannica*. However, when I was reminded by Dennis Fletcher, of the Wood staff, that the Wood had, for several years, run a popular Christmas-tree recycling facility, the inexplicable suddenly became possible.

Picture a young *britannica* larva, quietly feeding on a spruce in some Christmas tree plantation, and by November or early December in hibernation. The tree is felled, and transported through various stages to a warm Yuletide household in the Highgate area. The larva naturally mistakes the central heating for the advent of spring, resumes feeding and pupates in mid to late December. Around 6 January, conscientious householders take the tree, with its unseen resident, to Highgate Wood, where it will be destined for the shredding machine.

Fortunately for this particular *britannica*, the mild weather, together with its advanced state of pupation, fortuitously mean that the adult hatches out in the depot, near where a moth trap will shortly be set, before it can be turned into compost – and the rest, as the media assure us, is history. Alas, the origin of the tree will never be known; can I count it as a Highgate Wood record?– MICHAEL HAMMERSON, 4 Bramalea Close, Highgate, London N6 4QD.

MELANAGROMYZA DETTMERI HERING (DIP.: AGROMYZIDAE) NEW TO IRELAND AND A SECOND IRISH RECORD OF ITS PARASITOID *DIGLYPHOSEMA CONJUNGENS* KIEFFER (HYM.: EUCOILIDAE)

J.P. O'Connor

National Museum of Ireland, Kildare Street, Dublin 2, Ireland.

AS PART OF A study of the Irish cynipid fauna, the author has been collecting the stems of knapweed *Centaurea* in various parts of Ireland. Several species have been found living in the plant in Britain (Eady & Quinlan, 1963) but none of these have yet been discovered in Ireland. On 8.iv.1999, stems were obtained on the sand dunes at Woodstown strand, Co. Waterford (Irish grid reference S6905). After the winter storms, only a few were found in this very exposed locality and they were not identified to species. The material was placed in clear plastic bags and stored, hanging up, in an outdoor covered passage. This method has been very successful for rearing cynipids (e.g. O'Connor *et al.*, 1993; O'Connor & Bond, 1996).

On 18.v.1999, a cynipoid emerged but on close examination, it turned out to be a male eucoilid rather than a cynipid. The specimen was identified as *Diglyphosema conjungens* Kieffer using Quinlan (1978). This species is known from several localities in England and also from Dublin in Ireland. No further information is given by Quinlan (*op. cit.*) concerning the Irish record. *D. conjungens* is known to be a parasitoid of several species of *Melanagromyza* (Agromyzidae) whose larvae are internal stem-borers. On 25.v.1999, a small black fly emerged in the same bag as *D. conjungens*. The specimen was determined as a female *Melanagromyza dettmeri* Hering using Spencer (1972).

M. dettmeri is new to Ireland. The genus *Melanagromyza* is poorly known on the island. Although sixteen species have been recorded in Britain, only *M. aeneoventris* (Fallén) has been previously reported from Ireland (Spencer, 1972; Chandler, 1998). This record is based on a single female collected by A.H. Haliday and preserved in the National Museum of Ireland. It was identified by Griffiths (1968). Unfortunately like most of the Haliday Collection (O'Connor & Nash, 1982), the only data on the specimen consists of a green label stating "Ireland" and a white label with "Haliday 20.2.'82". The latter is the Museum's registration number. Haliday lived from 1806-1870 but it is probable that the specimen was collected before 1850.

M. dettmeri is widespread and common in Britain. The larvae are internal stem-borers, pupating in the stem. The host plants are yarrow *Achillea millefolium* L., mugwort *Artemisia vulgaris* L., common knapweed *Centaurea nigra* L., greater knapweed *C. scabiosa* L., hawkweed *Hieracium umbellatum* L. and common ragwort *Senecio jacobaea* L. *D. conjungens* is known to parasitize *M. dettmeri* (Quinlan, *op. cit.*). Since the latter's host plants are widely distributed in Ireland (Scannell & Synnott, 1987), both species are probably common Irish insects.

The specimens have been presented to the National Museum of Ireland.

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Is the Large Ear *Amphipoea lucens* (Freyer) (Lep.: Noctuidae) resident in south-east England?

On 9 August 1986, Mr A. Pearson boxed a noctuid he found resting on a light aboard the Hook of Holland to Harwich ferry, which had just docked at the Essex port, following an overnight crossing. Upon dissection I found this to be *A. lucens,* and at the time thought it may have been an example originating from stock resident along the coast of Holland, which had then hitched a lift on the ship. The species was hesitantly added to the Essex list as a Vagrant/Introduction.

Then, on 31 August 1997, Mr I. C. Rose at Mistley (14 kilometres to the west of Harwich) took an *Amphipoea* specimen, which he thought might be *A. fucosa* Freyer, but which proved to be a second *A. lucens.* I would urge recorders in East Anglia and south-east England to dissect any examples of *Amphipoea* adults which are found away from known *A. fucosa* and *A. oculea* L. colonies to help clarify its status in the area.– BRIAN GOODEY, 298 Ipswich Road, Colchester, Essex CO4 4ET.

Cypress Carpet *Thera cupressata* Geyer (Lep.: Geometridae) new to Devon

A single specimen of *Thera cupressata* was taken in the garden of Devon Moth Group member P. Franghiadi at Dawlish on 23 November 1999; the identity of the voucher specimen being verified by myself. This species was first discovered in Britain in the Swanage area of Dorset and it has since spread eastwards into Hampshire. The moth was in good condition and, in providing the first record of the species for Devon, its presence suggests that a westwards range expansion has also taken place.– ROY MCCORMICK, 36 Paradise Road, Teignmouth, Devon TQ14 8NR.

HOVERFLIES (DIP.: SYRPHIDAE) WITH A DRINKING HABIT

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Introduction

HAVING REPEATEDLY observed hoverflies drinking, I have attempted to put these observations together in this note, in the hope it may stimulate interest in this apparently neglected topic. Citation of individual observations has largely been avoided. Instead, an overview is provided of the circumstances in which drinking has been observed, with discussion of their potential implications. The note ends with a summary list of the 87 European species I have observed drinking.

Circumstances under which drinking occurs

Most of my observations have been made in forest habitats in southern Europe and should be considered in that context. It is a moot point whether they would relate equally to other habitat conditions or parts of the world.

Three factors may be identified which have a strong influence upon whether or no syrphids may be found drinking: weather conditions, type of location and time of day.

Weather conditions

In general, drinking by syrphids becomes noticeable when shade temperatures exceed 25°C, humidity is relatively low (I am not able to provide precise values), available sources of water are few and it is sunny. As the temperature mounts above 25°C drinking visits become progressively more frequent until temperatures exceed 32°C-33°C, when visits again diminish in frequency. The increase in drinking activity with temperature is due to both increase in numbers of individuals and increase in the number of species arriving to drink. Similarly, the decrease in drinking activity above 33°C involves diminution in both numbers of individuals and number of species.

Type of location

Use made of water sources varies according to whether they are running or standing water, easy of access by flight, in the sun and have an appropriate marginal zone. Edges of streams or rivers may be used, as may be the edges of pools or temporary puddles, patches of damp mud or sand, active sap runs or the wet surfaces of fresh cow dung.

In many instances it is difficult to observe drinking along the margins of streams or rivers, because the multiplicity of potentially appropriate drinking sites reduces the frequency with which any one site will be visited. However, experience, under conditions where appropriate drinking sites along streams are few and far between, suggests stream edges are perhaps the most favoured type of location (Table 1, st).

To generalise, stretches of stream that are for 2-3 metres in direct sunlight and have a mud, sand or gravel strip along the margin, receive maximal use. Characteristically, such stretches of water are only in the sun for limited periods of the day in forested conditions, going in and out of shadow as the angle of the sun's rays changes. When such a stretch of water passes into shadow its margin is hardly visited by drinking syrphids, even in periods when drinking activity might be expected to be maximal e.g. at mid-day. In instances where the water is in the sun but the margin is shaded, visits continue undiminished. I would postulate that the attraction of running water in the sun is due to the multiple reflections given off by its rippled surface, visible to syrphids which happen to fly above it. I did once attempt a rather primitive experiment to test this, using two trays containing water, one of them white and the other lined by crinkled, metallic cooking foil, laid on the ground, in the sun, on a track in alluvial softwood forest. The latter tray attracted *Ferdinandea cuprea* and *Helophilus pendulus,* while in the same time period the former attracted nothing (users of "water traps", please note!). I followed this up at a different location (in *Fagus/Abies* forest) by simply waiting beside a large (1.5 x 0.5m), crinkled piece of the same foil laid upon the ground, in the sun, to one side of a forest track. This piece of foil attracted *Eristalis similis*, *Meligramma cingulata* (Egg.), *Myathropa florea*, *Syrphus ribesii* and the stratiomyiid *Chloromyia speciosa* (Macquart.). The attractiveness of the roofs of parked cars to both syrphids and water beetles (!) on hot days is an analogous phenomenon with presumably a similar explanation.

The use made of any water source seems to be much influenced by whether or no it is in the sun, being visited for drinking purposes while the sunlight falls upon it, but not otherwise. This effect is particularly dramatic in the case of sap runs (Table 1, sa), which are often in the sun only briefly when the sun is at its zenith. During the course of 30 minutes to one hour, while a sap run is in the sun, it may be visited by a large number of individuals of a range of species, arriving in rapid succession – species rarely seen otherwise and not found drinking along stream margins. Some of the sap-run visitors seem to visit stream margins only under particular circumstances. *Sphegina* species provide an interesting example. I have not found this genus drinking along stream margins except where the water flows over a near-vertical surface, like a small waterfall. There, *Sphegina* may be found drinking at the edge of the water film, either on the wet rock surface or among wet moss.

The edges of pools or puddles seem to be visited by a narrower range of species than stream margins, and by the same species that visit patches of wet mud or sand (Table 1, d). However, under exceptional circumstances even patches of wet mud can prove highly attractive. The most extreme instance of this phenomenon I have experienced was on a hot day at c1400 metres, in forests in a part of the Swiss Jura which is entirely devoid of surface water except at the lowest altitudes (c700 metres). Two days after rain, one solitary section of a partially shaded track edge was still showing a feeble seepage of water, in the form of damp mud, for a distance of some 20 metres. Enormous numbers of syrphids accumulated along this stretch of track in the late afternoon and evening, attempting to drink. Visits continued until

the last vestiges of sunlight had passed from the track surface. Among the species which arrived were a number I have never seen coming to drink elsewhere.

Even small and extremely transitory patches of wet ground can prove attractive to syrphids. A bottle of mineral water, inadvertently spilt on leaf litter in an arid *Fagus* forest, very quickly attracted both *Heringia (Neocnemodon) latitarsis* and *Merodon avidus* on one occasion. This wet patch virtually disappeared within half an hour. *Heringia* species, in particular, seem adept at locating and using small patches of wet mud for drinking purposes. Wet cow dung (Table 1, c), another temporary source of moisture, which may be deposited far from stream margins or other water sources, would seem to have a small but rather particular fauna of syrphid visitors (excluding species which may arrive to oviposit), including *Ferdinandea aurea.*

The use made of all these sources of moisture is subject to accessibility. Without clear line of flight down to and away from a potential drinking site it is little used. Larger species, like those of *Milesia*, *Spilomyia* or *Volucella*, seem to require a sizeable atrium under the canopy, above drinking sites they frequent. This is also so for *Callicera* species, which seem to prefer an almost cathedralesque space above their drinking stations.

Time of day

Within the general framework provided by the times at which a site is in the sun and temperatures are appropriate, at a given season and place syrphids come to drink at times seemingly characteristic for the species involved. To give contrasting examples, although during July *Milesia semiluctifera* and *Spilomyia saltuum* may be found feeding together on the same flowers and drinking at the same streams in evergreen oak (*Quercus ilex*/*Q. suber*) forest in southern France, they do not drink at the same times. Both species feed at flowers in the morning, appearing at about 09.00 hours and disappearing by 11.00 hours. *S. saltuum* may from then on be found drinking at stream margins until the early afternoon, after which it again disappears. On the same day, *M.semiluctifera* does not arrive to drink until the early afternoon, whereafter it continues to visit stream margins until sunlight leaves them for good in the evening (here about 18.00 hours). Such "drinking hours" can clearly vary with season. Thus *Callicera* species appear to drink at stream margins at mid-day in July, but appear at both mid-day and early evening in September. Then there are those species which may be present in the vicinity of drinking stations but do not seem to visit them. In my experience, most *Eumerus* species fall into this category. One obvious example is *Eumerus flavitarsis*, the adults of which are characteristically found along stream margins. I have never seen this species engage in drinking behaviour.

Behaviour of the drinking fly

In a typical occurrence of drinking by a syrphid, as recognised in this article, the insect settles on a moist substrate onto/into which it extends its mouthparts, thereafter remaining motionless for a time interval of 30 seconds to five minutes. Following this it flies away from the drinking site entirely, without engaging in any

other activity there. Most syrphids flying down to drink do so without any apparent hesitation, or prolonged process of selecting a place to settle, and once settled they do remain almost entirely motionless. Essentially, they have to be observed as they arrive, because once in place drinking they are almost impossible to see – even the larger and more highly-coloured species. Exceptions to this typical drinking behaviour occur in genera like *Eupeodes, Platycheirus* and *Syrphus*, which tend to hover some centimetres above the surface for some seconds, before they settle. *Heringia* spends some seconds zig-zagging from side to side, very rapidly, just above the surface, before settling. The *Eumerus* species which do visit water sources tend to remain motionless for only a few seconds once settled, after which they move perhaps a metre before re-settling, a process repeated a number of times during one visit. And *Spilomyia* does not remain entirely motionless once settled, but instead often vibrates its wings, or waves them about slightly, in a fashion somewhat reminiscent of tephritids.

Syrphids do not occur by themselves at drinking stations, but are usually accompanied by other insects which have also arrived to drink and by representatives of the indigenous water edge fauna. A noticeable feature of the drinking assemblage is that syrphid mimics of aculeate Hymenoptera are frequently found drinking in the company of their putative models. Intriguingly, although model and mimic frequently drink within a metre of each other, they rarely actually drink together, seemingly having small, but distinct, differences in the preferred characteristics of the sites at which they settle. The various social wasps and the honey bee (*Apis*), in particular, arrive repeatedly on the same few square centimetres of surface used previously by their own species. *Apis*, *Vespa crabro, Vespula* species and *Pollistes* species are all frequent visitors to stream margins to drink. *V. crabro* is so similar to *Milesia crabroniformis* (in both appearance and sound) that where they both arrive to drink distinguishing them can be difficult, though the wasp carries its wings folded over its abdomen once settled, which is not so in *Milesia*. Even more difficult is detecting *Spilomyia* among a mixed bunch of *Pollistes* species. But *Pollistes* usually take a considerable time in selecting places to settle, swinging from side to side above the generally-preferred spot, and once settled they tend to pulse the abdomen and hold their wings steady, unlike *Spilomyia*.

Given that some of the insects found drinking can be predators of others accompanying them, it is perhaps surprising that there is an almost total lack of predatory behaviour among the drinkers. It would appear that aculeates which arrive to drink are there for that sole purpose. Indeed, syrphids which arrive to drink do so largely undisturbed. At stream edges there are occasional perturbations caused by patrolling dragonflies, notably *Calopteryx, Cordulegaster* or *Gomphus* species, but the only resident predators which seem to lie in wait for the unwary drinker are small lizards. A more bizarre interference originates with the conopids which characteristically station themselves along stream margins, awaiting the arrival of appropriate aculeate hosts to drink. These conopids (*Leopoldius* and small *Conops* species) may be numerous and not infrequently "attack" drinking syrphids, causing them to fly off.

Where standing or slowly-moving water is present, at least one further drinking technique may be observed among insect visitors. *Pollistes* wasps, especially, may alight directly onto the water surface, with all legs widely spread, so that they may drink while floating on the surface film. They then take flight directly from this floating position. This technique is not much used by syrphids in general, but may be employed at least by *Eupeodes corollae*, when visiting small bodies of still water, like garden ponds. A third technique, which may, however, not involve drinking at all, is very similar to the "dapping" activity of mayflies and tabanids. Dapping tabanids swoop down to the water surface of small streams, to briefly insert the tip of the abdomen into the water, for purposes of oviposition. This event is conducted very rapidly, and the insect flies up from the surface immediately afterwards. An egg-laying tabanid may touch the water surface in this way two or three times in quick succession, while flying over a stretch of stream surface, after which it zooms away from the stream. In some instances, it looks as though the fly inserts not the tip of the abdomen, but the mouthparts, into the water. But it would take high-speed photography to really establish what is taking place. On occasion, I have seen *Callicera* performing this same action over streams, but am unable to state whether oviposition or drinking was involved - I cannot even be sure whether the insects concerned were male or female because it was virtually impossible to capture them.

Discussion

That under certain circumstances adult syrphids visit sources of water in order to drink is indisputable. The extent to which access to water for drinking is a requirement for syrphids is less clear.

When conditions have been optimal for observing drinking by syrphids I have only exceptionally gained the impression that the entire local population of some species might be coming to drink. Without experimentation, discussion of this point must remain largely conjectural. However, my general assessment of the situation would be that only a subset of the individuals comprising the local population of a species visits drinking stations on any one day. An associated conclusion is that only individuals from habitats within c100 metres of a drinking station will visit it. If these deductions are correct, they might be taken to imply that access to water is not critical for adult syrphids. However, they might equally be used to argue that, in hotter, drier parts of southern Europe, at least, accessibility of water may well dictate the distribution of some forest species, restricting them to the vicinity of water sources which remain available during the largely arid months, even if appropriate larval habitat occurs throughout the surrounding forests. Certainly, the consistent and persistent use made of forest stream margins, for drinking purposes, would argue that access to such a source of water must confer some advantage on the local syrphid populations, at the very least.

The increased frequency of drinking activity under hot conditions might lead one to believe that the flies are drinking primarily to replace lost water and avoid desiccation. But other insects are known to drink not only to obtain water but also to

obtain necessary minerals. So far as I am aware, there has been no investigation of this aspect of drinking activity for European syrphids. Drinking from moist cow-dung or from sap runs, in particular, would undoubtedly lead to ingestion of a range of potential nutrients, either in solution or suspension, and it may be entirely inappropriate to view these activities as manifesting primarily a need for water.

Finally, there is the intriguing question of the potential role of mimicry in the drinking procedure. The theoretical advantages of mimicry are easy to understand, but specific circumstances in which mimicry may confer real advantage are less easy to identify. Motionless while drinking at a stream margin, large syrphids like *Milesia crabroniformis* and *Spilomyia* species are arguably at their most vulnerable. If the mimicry by these syrphids of *Vespa crabro* and *Pollistes* species, respectively, ever has any real significance, it must surely be an active force when they are drinking in the company of their models.

This short account is generously sprinkled with supposition and interpretation not backed by rigorous experimentation. For this I make no apology. As I see it, there is a need to show that syrphid drinking behaviour requires more rigorous investigation – the extent to which the adult fly's requirement for accessible water sources dictates either distribution or behaviour of a species is at the moment impossible to gauge. If this short essay precipitates some research on the topic it will have served its purpose. A second objective would be met if more of those interested in syrphids set out to observe syrphid drinking behaviour for themselves – they may well find that, on a hot afternoon, a rest beside a patch of sun reaching down to an otherwise shady forest stream can be transformed into a most productive experience!

Table 1: **syrphids observed drinking**. The species are listed in the left-hand column, the substrate(s) on which they have been observed drinking in the right-hand column.

c = cow-dung; d = damp mud/sand; sa = sap-run; st = stream edge

SPECIES	substrate
Anasimyia contracta Claussen & Torp, 1980	d
Baccha elongata (Fabricius), 1775	st
Brachyopa dorsata Zetterstedt, 1837	d
Brachyopa insensilis Collin, 1939	sa
Brachyopa panzeri Goffe, 1945	sa
Brachyopa pilosa Collin, 1939	sa
Brachyopa scutellaris Robineau-Desvoidy, 1843	sa, st
Brachyopa vittata Zetterstedt, 1843	d
Brachypalpus chrysites Egger, 1859	d
Callicera aurata (Rossi), 1790	st
Callicera fagesii Guerin-Meneville, 1844	st
Callicera macquarti Rondani, 1844	st
Callicera spinolae Rondani, 1844	st
Ceriana vespiformis (Latreille), 1804	st
Chalcosyrphus nemorum (Fabricius), 1805	st
Cheilosia aerea Dufour, 1848	st
Cheilosia albipila Meigen, 1838	d
Cheilosia chrysocoma (Meigen), 1822	d
Cheilosia faucis Becker, 1894	d
Cheilosia frontalis Loew, 1857	d
Cheilosia lasiopa Kowarz, 1885	d
Cheilosia mutabilis (Fallen), 1817	st
Cheilosia pubera (Zetterstedt), 1838	d
Cheilosia rhynchops Egger, 1860	d
Cheilosia scutellata (Fallen), 1817	d, st

SPECIES	substrate
Cheilosia soror (Zetterstedt), 1843	st
Cheilosia urbana (Meigen), 1822	d
Chrysogaster solstitialis (Fallen), 1817	st
Chrysogaster virescens Loew, 1854	st
Chrysotoxum octomaculatum Curtis, 1837	st
Criorhina berberina (Fabricius), 1805	st
Criorhina floccosa (Meigen), 1822	sa
Didea fasciata Macquart, 1834	st
Doros destillatorius Mik, 1885	st
Episyrphus balteatus (DeGeer), 1776	d, st
Eristalinus taeniops (Wiedemann), 1818	st
Eristalis arbustorum (L.), 1758	st
Eristalis interrupta (Poda), 1761	d
Eristalis pertinax (Scopoli), 1763	d, st
Eristalis similis (Fallen), 1817	d, st
Eristalis tenax (L.), 1758	d, st
Eumerus funeralis Meigen, 1822	st
Eumerus ornatus Meigen, 1822	st
Eumerus sabulonum (Fallen), 1817	st
Eupeodes corollae (Fabricius), 1794	d, st
Eupeodes lapponicus (Zetterstedt), 1838	st
Ferdinandea aurea Rondani, 1844	c
Ferdinandea cuprea (Scopoli), 1763	st
Helophilus pendulus (L.), 1758	st
Heringia latitarsis (Egger), 1865	d, st
Heringia pubescens (Delucchi & Pschorn-Walcher), 1955	d
Mallota cimbiciformis (Fallen), 1817	sa
Melanostoma mellinum (L.), 1758	st
Meliscaeva auricollis (Meigen), 1822	st
Merodon avidus (Rossi), 1790	d, st
Merodon elegans Hurkmans, 1993	st
Merodon geniculatus Strobl, 1909	st
Milesia crabroniformis (Fabricius), 1775	st
Milesia semiluctifera (Villers), 1798	st
Myathropa florea (L.), 1758	st
Myolepta dubia (Fabricius), 1803	sa, st
Myolepta vara (Panzer), 1798	c, st
Paragus majoranae Rondani, 1857	d, st
Parasyrphus lineolus (Zetterstedt), 1843	d
Parasyrphus macularis (Zetterstedt), 1843	d
Parasyrphus malinellus (Collin), 1952	d
Parasyrphus punctulatus (Verrall), 1873	d
Platycheirus albimanus (Fabricius), 1781	st
Platycheirus scutatus (Meigen), 1822	st
Psilota anthracina Meigen, 1822	st
Riponnensia splendens (Meigen), 1822	st
Scaeva pyrastri (L.), 1758	st
Sphaerophoria scripta (L.), 1758	st
Sphegina clunipes (Fallen), 1816	sa, st
Sphegina elegans Schummel, 1843	st
Sphegina limbipennis Strobl, 1909	st
Sphiximorpha subsessilis (Illiger in Rossi), 1807	sa
Spilomyia manicata (Rondani), 1865	st
Spilomyia saltuum (Fabricius), 1794	st
Syritta pipiens (L.), 1758	d, st
Syrphus ribesii (L.), 1758	st
Syrphus vitripennis Meigen, 1822	d, st
Temnostoma vespiforme (L.), 1758	st
Volucella bombylans (L.), 1758	st
Volucella inanis (L.), 1758	st
Volucella inflata (Fabricius), 1794	st
Volucella pellucens (L.), 1758	st
Volucella zonaria (Poda), 1761	st
Xanthogramma pedisequum (Harris), 1776	st
Xylota segnis (L.), 1758	st
Xylota sylvarum (L.), 1758	st

Acknowledgments

I am grateful to Pierre Goeldlin for his helpful comments on an earlier draft of this text, and in particular for his mention of butterflies drinking as a means of obtaining necessary minerals, rather than as a "thirst-quenching" exercise. Further, I would like to thank him for the opportunity to include records of his with my own, from a memorable day we spent collecting in the Swiss Jura, when we found apparently the entire local syrphid fauna visiting wet mud on a hot evening.

New vice-county records of microlepidoptera

I recommend recorders to consult me before claiming that a species is new to their county. I hold distribution maps for all our British Microlepidoptera. These are as complete as I can make them, though no doubt there are some records that have not come to my notice.

New records are frequently claimed incorrectly. For example, in the March-April issue of this journal (*antea*: 74), four records from the Isle of Wight were alleged to be new, but for two of them that was not the case. *Niditinea fuscella* (L.) and *Elachista luticomella* Zell. have both been recorded before and this is shown by dots on the distribution maps in *The Moths and Butterflies of Great Britain and Ireland* Volumes 2 and 3 respectively. The maps in question were prepared in the first instance by the late E.C. Pelham-Clinton and are now in my possession. In each case he used the symbol he reserved for records where he had seen a specimen and confirmed the determination. Unfortunately I do not hold his sources, but they are probably available amongst his papers at the National Museum of Scotland in Edinburgh. The other two species claimed, *Blastobasis decolorella* (Wollaston) and *Cydia servillana* (Duponchel) are indeed new to the Isle of Wight.

May I ask recorders to send me a list of species they think may be new, as several do already, so that I can keep my maps complete and up to date. There is only one species of microlepidoptera that has been reported from all 113 vice-counties in Britain and all 40 in Ireland. Can you guess which it is?– A.M. Emmet, Labrey Cottage, 14 Victoria Gardens, Saffron Walden, Essex CB11 3AF.

***Euzophera bigella* Zell. (Lep.: Pyralidae) new to Devon.**

On 6 September 1999 I purchased two pomegranates *Punica granatum* from a local greengrocer in Teignmouth; one of these was stuffed full of frass and silk in the hollow left by the flower whilst other had a smaller amount of silk and frass. After five specimens of *Cryptoblabes gnidiella* (Mill.) had emerged I noticed, in the fruit that had most frass, holes going down through the rind with larvae about a quarter to three eighths of an inch long (6-9mm) which disappeared down these holes when disturbed; there were three of these grey, almost colourless larvae. Two of these pupated (one spun up on the edge of the rind and the other left the fruit and spun up in the tissue in the container), though the third continued feeding. Two *Euzophera bigella* emerged on 3 and 8 October 1999 but, although I looked for it very carefully, the third larva could not be found.

This species normally prefers peaches *Prunus persica* (Goater, 1986. *British Pyralid Moths*: Harley books) and, as far as I know, this is the first time this species has been found in pomegranates. The larvae burrow through the rind to the fruit seeds inside, but do not seem to affect the edible parts, leaving no frass in this area. These examples of *E. bigella* are evidently the fourth and fifth British examples and are new for Devon.– Roy McCormick, 36 Paradise Road, Teignmouth, Devon TQ14 8NR.

THE DISTRIBUTION OF THE TOADFLAX BROCADE *CALOPHASIA LUNULA* (HUFN.) (LEP.: NOCTUIDAE) IN BRITAIN

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Historical background

THE HISTORY OF this moth, which was introduced as British in the nineteenth century, based on specimens said to have been caught at Woodside, North Essex, was reviewed by Bretherton et al (1983). The origin of these Essex specimens has been questioned. Bretherton et al (*op. cit.*) give the first authenticated British examples as being from Shoreham, West Sussex, in 1939, followed by Bexhill, East Sussex in 1950 and Bradwell-on-Sea, South Essex and Dungeness, East Kent in 1951. Larvae were first found at Dungeness and at Stone, West Kent, in 1952. Large numbers of larvae were subsequently found at suitable sites along the coasts of Kent, Sussex and Essex. The record of a moth near Southampton, South Hampshire, in 1971 is also given in their review of this species.

More recently, Skinner (1998) states that the species is "Well established and not uncommon at Dungeness, Kent, and found locally along the coast eastwards to Sandwich and westwards through East Sussex to Angmering, West Sussex" and cites additional records of larvae from Wakering, South Essex (1953 and 1954), Tonbridge, West Kent (1954) and Stone (1956), and of single adults from Pinden, West Kent (1953); Hamstreet, East Kent (1953 and 1996); Bookham Common, Surrey (1970); and Southsea (1992) and Gosport (1996), both South Hampshire.

Chalmers-Hunt (1960-1981) gives records of larvae being found at Folkestone (1955), Lydd-on-Sea (1960 and 1965) and Greatstone (1965), all East Kent. A single larva feeding on purple toadflax *Linaria purpurea* was found at Larkfield, 5 miles north-east of Maidstone, West Kent, in 1983 (Chambers, 1985). Further records from East Kent are of a single adult at Willesborough in 1957 (Chalmers-Hunt, 1960-1981), a single adult at Dover in 1976 (Youden, 1976), a single adult at Folkestone Warren in 1976 (Whitbread 1977), Kingsdown in 1980, two on flowers (Chalmers-Hunt, 1960-1981), and a single adult at Lade, Lydd-on-Sea in 1985 (Woiwod, 1985). In 1991, a single adult was recorded at Folkestone Warren (Julian Clarke pers. comm.). During the 1990s, the moth has been recorded regularly at Greatstone, Littlestone, Lydd and New Romney (Sean Clancy pers. comm.) and in the last three years larvae have been found in the Walmer area, East Kent, feeding on purple toadflax (Tony Harman pers. comm.). In 1996, a single adult was recorded at Sholden, East Kent by Lynn Hirst (pers. comm.).

Pratt (1999) gives records for Eastbourne (probably The Crumbles) in 1952, and in 1953 from The Crumbles, Hastings (dozens of larvae), Pett Levels (larvae), Pevensey to Bexhill (larvae) and Newhaven (larvae), all in East Sussex. Larvae were found during 1954 and 1955 from Shoreham Beach to Lancing and from Worthing in 1954, all West Sussex. An adult was recorded at Hailsham (1954), at least one

adult was seen at Camber in 1955 and in 1966 a single adult was seen at Patcham, all in East Sussex. During the 1970s, larvae were still to be found at Worthing, Lancing, Shoreham Beach and on The Crumbles. The species was also reported from Milton Street (1970), Ringmer (1972 and 1974), Houghton Green (1975), Peacehaven (1977) and Eastbourne (1978), in East Sussex and from Angmering, West Sussex (given as 1978 in Waring (in prep.)). A few larvae were found at Normans Bay, East Sussex, in 1979. The adult was first recorded at Pebsham in 1985, and has been seen there subsequently, and there have been records of the adult from Haywards Heath (1983), East Grinstead (1983) and Crowborough (1993), all East Sussex. Elsewhere during the 1980s, the moth was found at Hove (1983) and Storrington (1985), West Sussex and on The Crumbles (larvae). The moth was recorded at Worthing in 1981 but has not been seen in the area subsequently.

In the 1990s, single adults were seen at Rye Harbour in 1996 and 1997 (Barry Yates pers. comm.); Bulverhythe, near Hastings, in 1997 (two larvae) and in a Hastings garden in 1997 – one adult and larvae on purple toadflax (Paul Troake, pers. comm.), all East Sussex. Phil Budd found six larvae on common toadflax *Linaria vulgaris* on 1 July 1998 at Pagham Harbour, West Sussex. Other records for Sussex from 1990 to 1998, are from Guestling Thorn (1990, a pupa), The Crumbles (larvae), Normans Bay (single adults in 1995 and 1996), Brighton (1996 and 1997) all in East Sussex; and Hove (1996 and 1997, single larvae on purple toadflax) and Littlehampton marina (1996 and 1997), both in West Sussex (Pratt 1999).

Waring (in prep.) suggests that the species is confined as a breeding species to a few places on the south coasts of Kent and Sussex and also gives records from Portland, Dorset, in 1990 (M. Cade) and a pre-1980 record from near Penzance, Cornwall (BRC database), though this latter record is not listed in Smith (1997). There is an additional record from Dorset, that from Wareham in 1998 (Davey & Sterling, 1999). There are three further 10-kilometre squares given in Bretherton et al (1983) with records that could not be traced; these are TQ55, TQ66 and TQ64, although the latter may refer to the Tonbridge record. All three of these are pre-1960 records.

The species was listed as RDB 3 (Rare) in the insect *Red Data Book* (Shirt 1987), a status retained in Waring (in prep.). It was listed as a species on the *Middle List of Globally Threatened/Declining Species* (UK Biodiversity Group 1995) and was treated under a Species Statement in the *UK Biodiversity Group Tranche 2 Action Plans* (UK Biodiversity Group 1999).

The 1999 survey results

During 1999, an *ad hoc* survey was undertaken as part of Butterfly Conservation's *Action for Threatened Moths Project*. This was prompted by the discovery of two adults at Shoreham Beach, West Sussex, on 25 May 1999 by Simon Curson. Effort was concentrated on locating larvae, which are easily found by day in association with various species of toadflax.

Whilst visiting the Eastbourne area, on 1 July 1999, I surveyed part of what was left of The Crumbles, the coast at Pevensey Bay and an area of vegetated shingle at Normans Bay. Unfortunately the latter site did not appear to support any of the food

plants, but larvae were found on purple toadflax at both the former two sites (25 in half an hour and seven during a 20 minute search respectively). A subsequent, more thorough search of a small area of The Crumbles located 132 larvae, all associated with purple toadflax (David Burrows pers. comm.). Much of The Crumbles has been decimated by development and part of the remaining area supporting this species is destined to become housing. A small remnant is being conserved and has been recognised as a Site of Nature Conservation Importance.

On 2 July 1999 I found three larvae during a one-hour search of a thin strip of vegetated shingle at Shoreham Beach. All were feeding on purple toadflax. A brief search of sites around Lancing and Worthing in the adjacent western 10-kilometre square proved negative, despite the presence of both purple toadflax and common toadflax. Tide Mills, near Newhaven, East Sussex was also searched; this was found to have a profusion of common toadflax, but no larvae were found.

The following month, on 17 August 1999, I searched parts of the Hampshire and West Sussex coast. No larvae were found on Browndown, South Hampshire, but larvae were found at Pagham Harbour (17 in total, 15 on purple toadflax and two on common toadflax) confirming the continued presence of this species at this site. Six larvae, all on purple toadflax, were found in an adjacent 10-kilometre square on a small area of beach at Middleton-on-Sea. Brief searches in the Elmer, Felpham, Aldwick and Atherington areas of West Sussex all proved negative, with no toadflax to be found at these sites with the exception of two plants of purple toadflax at Aldwick.

A more extensive search was undertaken on the 19 August 1999. I surveyed a stretch of the coast from Deal, East Kent, to Newhaven, excluding Dungeness and The Crumbles area. The search route took in roads following the coast wherever possible and suitable sites spotted from the car in each of the 10-kilometre squares between these two points were searched. Larvae were found in East Kent at Kingsdown (two on common toadflax) and just to the east of Hythe Ranges (three all on purple toadflax). A previous search of the Ministry of Defence holdings at Hythe Ranges by Sean Clancy had proved negative. Two larvae were found at Bulverhythe on common toadflax. A search around Walmer Castle and Folkestone, East Kent, and Rye, Seaford and a further search of Tide Mills, all in East Sussex, on this date proved negative. On a later date, Paul Troake undertook a search of plants on Rye Harbour LNR, although toadflax is not well represented at the site; no larvae were found.

A search by myself around the Witterings in the extreme west of Sussex on 23 August 1999 proved negative for the food plants.

On 23 August 1999, Sean Clancy found larvae in both of the 10-kilometre squares that cover Dungeness. In the square TQ 01, all larvae were found on common toadflax, whereas in square TQ 02, larvae were found on both common toadflax and purple toadflax.

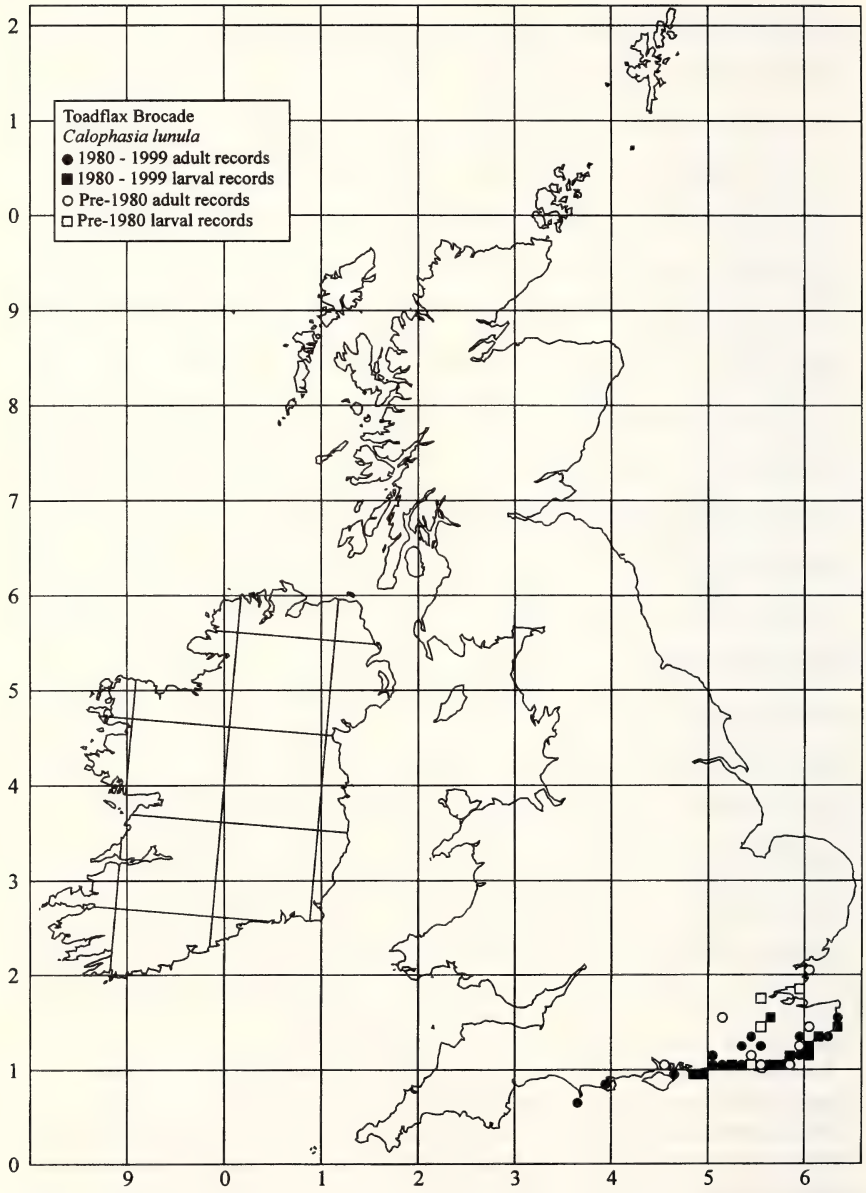

Figure 1. Distribution of Toadflax Brocade *Calophasia lunula*, by 10km squares.

Discussion and summary

Prior to the survey, records suggested a distribution between Sandwich, East Kent and Pagham, West Sussex, with few published larval records. Research for this paper gleaned recent (1980 onwards) larval records for nine 10-kilometre squares, two of which were from the Dungeness area and two of which were probably short-term establishments. No record has been found to substantiate the claim for Sandwich, although records have been found for nearby Walmer and Sholden.

As a result of the 1999 survey, larvae were found in nine 10-kilometre squares. There is a further 10-kilometre square with records of larvae since 1990, although this is unlikely to represent a long-term establishment. Figure 1 summarises the known distribution of the species. Away from Dungeness, the sites where larvae were found are typically thin strips of vegetated shingle that had previously been disturbed and with a high proportion of open shingle. All the sites where the species survives suggest a requirement for a warm and dry micro-climate.

It is still possible that some sites have been overlooked, for example time did not permit a survey of possible habitat between Littlehampton and Worthing (a further two potential 10-kilometre squares), a further site to the one searched at Normans Bay which supported the food plant at least as recently as 1998 (Colin Pratt pers. comm.) and the shingle beach at Cuckmere Haven (a further 10-kilometre square). Also, time did not permit the investigation of whether or not suitable habitat occurs at the base of cliffs, for example around Beachy Head and at Fairlight, East Sussex.

The food plants of the species are given by Skinner (1998) to be "mainly common toadflax [*Linaria vulgaris*], also occasionally on purple toadflax (*Linaria purpurea*) and pale toadflax (*L. repens*)". It is, therefore, interesting to note that, during the present survey, all but six larvae were found to be associated with purple toadflax.

The known range of this species in Britain has not greatly altered as a result of this rather piecemeal survey, but it may occur on other parts of the Kent and possibly Essex coast (these areas were not searched). However, we now have a far better understanding of the species' current distribution. It is apparent from the records that although it has been recorded inland as both larvae and adults on several occasions, it has still not been able to permanently establish itself away from the coast.

Bretherton *et al* (1983) stated that "since about 1960 it has become scarcer in some places and disappeared from others", although the 1971 record "may indicate either further extension westward or new immigration". The records researched, and undoubtedly some have been missed, do indicate a comparative paucity of records of the Toadflax Brocade during the 1960s. However, it is possible that an alternative explanation for this apparent decline may be a reduction in specific searches for the species during those years. Perhaps the only way to determine possible fluctuations in this species fortunes are to annually monitor populations at the edge of its range and to survey adjacent, but currently unoccupied, suitable habitat.

This summary, along with the present survey, demonstrates that the well known sites for scarce species are not always the only ones and effort concentrated on areas away from these well known sites could contribute greatly to our understanding of individual species. The Species Statement in the Biodiversity Action Plan (UK

Biodiversity Group 1999) advocates monitoring of this species. It is hoped that, with local co-operation, annual monitoring will be put in place at key sites for the species. As Butterfly Conservation is the Lead Partner to oversee action for this species, we would be pleased to hear of any additional records of the Toadflax Brocade.

Acknowledgements

The Action for Threatened Moths Project is funded by English Nature (Species Action Programmes) and Butterfly Conservation. I would like to take this opportunity to thank Phil Budd, David Burrows, Dr Julian Clarke, Simon Curson, Tony Harman, Lynn Hirst and Barry Yates for allowing the use of their records, Bernard Skinner for his comments, and Sean Clancy and Paul Troake for records and for assisting with the survey. I would especially like to thank Colin Pratt for providing a preview of the Toadflax Brocade text from Pratt (1999) and for comments on an early draft of the text; Dr Ian McLean, Joint Nature Conservation Committee, for allowing a preview of Dr Paul Waring's forthcoming review and David Green for preparing the map.

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DRYOCOETES AUTOGRAPHUS (RATZEBURG) (COL.: SCOLYTIDAE) IN SURREY, APPARENTLY NEW TO SOUTH-EAST ENGLAND, WITH A TAXONOMIC NOTE

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ON 3 SEPTEMBER 1999, at the edge of mixed woodland on Esher Common, Surrey, we chanced upon a fallen spruce *Picea abies* of no great size and were able to extract from the tough bark of the solid stump a few specimens of a scolytid beetle; its larvae also were present. To our surprise, the species turned out later to be *Dryocoetes autographus*. On a second visit to the spot on 8 September by JAO (accompanied by Martin Luff), further examples were found.

All published British records of *D. autographus* that we have managed to trace, including recent ones, are for the more northern and western parts of the country. The southernmost county from which it appears thus far to be reported is Gloucestershire, especially the Forest of Dean area. Northward from there, records become more and more frequent though hardly numerous until Scotland is reached, and there the beetle occurs widely. JAO, who has collected over much of that country, met with it between 1971 and 1985 in five more or less scattered localities, stretching as far to the north-west as Dunvegan on the Isle of Skye

Although the species is recorded from several coniferous host-trees, all British records except one – where the host-tree is specified – appear to be from spruce. Other hosts listed by authors, at all events pine and silver fir, are probably derived from experience on the continent where insects tend to be less restricted in their tastes and habits than in Britain. The exception just mentioned relates to the original British discovery of *D. autographus* near Scarborough in April 1869 by Lawson "in some young larch trees in a fir plantation" (Fowler, 1891: 437). Even there, it seems distinctly possible that the beetles had originally been attacking some of the "fir" trees (presumably spruce) in the plantation but, for some reason, found the young larches more to their liking and transferred their attention thereto.

While on the subject of *Dryocoetes*, we think it should be pointed out that Balachowsky's genus *Dryocoetinus*, used for two of our species in the current check-list (Pope, 1977), is taxonomically invalid, being based solely on a pronotal sculptural character of no more than specific value. Some time ago, one of us (AAA), being in touch with the scolytid specialist Dr R A. Beaver, put to him the question of its validity. He fully agreed that there was no basis for its retention. With so many needless (or at best dubious), generic names cluttering up the literature, the dropping of even one is a small positive gain.

Acknowledgements

We thank Miss Christine Tilbury and Dr Tim Winter for advising us that there are records of *D. autographus* in south-east England in the Forestry Commission records.

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AN UNUSUAL ABERRANT MALE OF *EREBIA RHODOPENSIS* NICHOLL (LEP.: NYMPHALIDAE: SATYRINAE)

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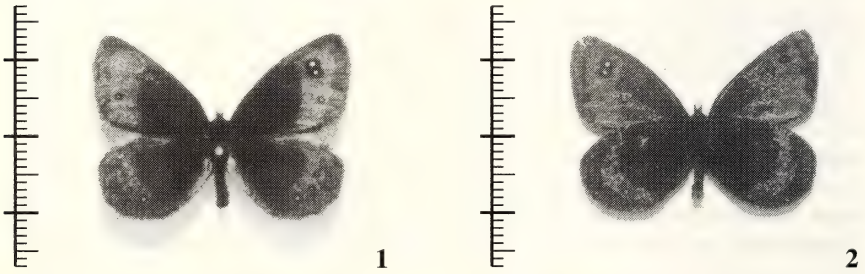
DURING MY summer visit to the Musala part of the Rila Mountains in south-west Bulgaria, an unusual somatic mosaic aberrant of *Erebia rhodopensis* Nicholl, 1900 was collected. This single specimen was caught together with a series of typical examples.

Erebia rhodopensis Nicholl, 1900 **ab. nov.**

Description: overall appearance asymmetric; right fore wing length 18mm, left–17mm; right fore and hind wings and left hind wing as in normal *rhodopensis;* left fore wing upper side without apical ocelli, under side only the first apical ocellus present, small ocellus in space 2 absent.



Figures 1, 2. *Erebia rhodopensis* Nicholl, 1900 **ab. nov.**: (1) upperside; (2) underside.

Labels: (1) printed (on white paper) "BULGARIA | Rila Mts | Markudzhika 2400 m | 23.VII.1999 | S. Abadjiev leg. | [line] | S. Abadjiev coll. 1505"; (2) printed (on red paper), double framed "HOLOTYPE ♂ | Erebia rhodopensis | Nicholl, 1900 | ab. nova | [line] | S. Abadjiev det. 2000".
Material: 1 ♂, in S. Abadjiev collection, Sofia.

The Pine Hawk-moth *Hyloicus pinastri* (L.) in Britain

I am currently researching the history of *H. pinastri* in this country and am, therefore, requesting any unpublished records from previously sterile 10-kilometre squares, especially those situated to the west of a line drawn from the Severn to the Wash.

All due acknowledgement will of course be given.– COLIN R. PRATT, 5 View Road, Peacehaven East Sussex BN10 8DE. (E-mail: colin.pratt@talk21.com)

SURVIVAL OF LADYBIRD HOSTS INFECTED WITH PHORID PARASITOIDS

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Introduction

THE SCUTTLE-FLIES *Phalacrotophora fasciata* (Fallén) and *Phalacrotophora berolinensis* Schmitz (Diptera: Phoridae), are well known parasitoids of ladybirds in Britain (Disney *et al.* 1994). Eggs are laid on, or in, ladybird pupae, usually during, or soon after, pupation. In previous reports of these flies, emergence of fly larva from a host has invariably been associated with the death of the host. We here wish to report two observations of pupae of the 2-spot ladybird *Adalia bipunctata* (L.) producing both phorids and adult ladybirds.

Methods

Between 24 and 29 June 1998, a sample of 730 *A. bipunctata* pupae were collected in the vicinity of Juniper Hall, Mickleham, Surrey (O.S. grid ref. TQ 173 527). The pupae were placed into individual Petri-dishes and retained in the laboratory until either phorids or adult ladybirds emerged. Phorid larvae were allowed to pupate and were weighed between 24 and 72 hours after pupation. The number of phorids from each host pupa was recorded. Thereafter, phorids were allowed to eclose and were identified as either *P. fasciata* or *P. berolinensis* (by R.H.L. Disney). Some *A. bipunctata* pupae failed to produce either adult ladybirds or phorids.

Results

Of the sample of pupae, 168 failed to produce either ladybirds or phorids. Of the remainder, 472 produced adult *A. bipunctata,* 88 produced phorids, with successful infection levels varying between one and seven phorids, while two pupae produced both single phorid larvae and healthy adult ladybirds. In both of these latter cases, the phorid larvae emerged before the ladybird pupae eclosed.

The weights of the phorid puparia produced in these two instances were 1.0mg and 1.1mg. The weights of these two compare with a mean weight of 1.74mg of phorids from pupae producing a single larvae, and were the lightest puparia from such hosts (n=14). The adult phorids which eclosed from the two puparia were both male *P. fasciata.* The adult ladybirds which emerged from the two pupae were a female, which subsequently laid fertile eggs after mating, and a male which was mated to a virgin female that subsequently laid eggs with normal fertility rates, indicating that the interaction with phorids had not obviously affected the reproductive potential of these two hosts. The two ladybirds were not obviously smaller than other same sex adults from the pupal sample.

Discussion

The low weight of the two phorids from host pupae which also produced adult ladybirds suggests that these phorids gained less resources than those phorids which killed their hosts. It is feasible that the ladybirds in question have some physiological mechanism which confers a degree of immunity against phorid infection by protection of nutrient resources. On the other hand, as only a single phorid emerged from each pupa, and in both cases the phorids were abnormally small, it is feasible that the drain on their hosts resources accruing from their presence was insufficient to prove fatal to their hosts.

The observations of phorid parasitisation failing to prove fatal to *A. bipunctata* pupae is unlikely to have significant consequences on the population demography of the host, because of the rarity of such events, unless novel immunity is involved and spreads. However, the observation may have importance in respect of the horizontal transmission of heritable cytoplasmic bacteria of ladybirds. These bacteria which are inherited only down the female line, kill male but not female host embryos. Phylogenetically similar bacteria have been found in different species of ladybirds. For example, similar *Rickettsia*-like bacteria have been found in both *A. bipunctata* (Werren *et al.* 1994) and in the closely related *A. decempunctata* (L.) (10-spot ladybird), the two bacteria showing over 99% sequence homology in the ITS gene (Schulenburg, *pers. comm.*). Similarly, *A. bipunctata* and *Harmonia axyrids* (Pallas), both harbour male-killing *Spiroplasmas* with >99% homology in the *wsp* gene (Hurst *et al.* 1999; Majerus, T. pers. comm.). The close homology of male-killing bacteria in different species suggests that horizontal transmission of the male-killers might occasionally occur, either via contagion or through some intermediate vector. The possibility that phorids might act as such a vector for male-killing bacteria has hitherto been disregarded as it was previously assumed, on the basis of literature reports and observation, that parasitisation by phorids was invariably fatal (Disney *et al.* 1994; Majerus, 1994). The observations described above make this assumption unsafe. It is possible that phorids could vector male-killing bacteria between host coccinellid species thereby causing novel invasions, as very rare events.

Acknowledgements

We are grateful to the staff of Juniper Hall Field Studies Centre for use of facilities and to Dr R.H.L. Disney for identifying phorids.

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ITHOSTYGNUS (METOPHTHALMUS) SERRIPENNIS BROUN (COL.: LATRIDIIDAE) FROM A LIVING BAT

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ON 15 MARCH1998, Mr and Mrs Nadin, the owners of a cottage in Routh, Humberside, found an injured bat lying on a gravel path in their garden. The bat, a specimen of the Common Pipistrelle *Pipistrellus pipistrellus*, was placed in a clean cardboard box lined with kitchen roll and brought the day it was found to ACL who noted small puncture wounds in a wing, together with a slightly inflated abdomen, features consistent with injury by a domestic cat. The bat was started on a course of an antibiotic and housed in a small plastic vivarium where it accepted a mealworm-based diet and water.

On the day after it was brought in, ACL carried out a routine examination of the bat for ectoparasites, putting the three specimens found into a tube. Thinking that they were fleas, he sent the tube to RSG who noticed, on close examination, that they were in fact small beetles. The latter were sent to JAO who identified them as examples of *L. serrripennis*.

L. serripennis is a native of New Zealand, first found in Britain in a cellar in Reigate, Surrey (Stott, 1928). Since then, it has been found in many locations throughout the British Isles. It has been recorded from four sites in Humberside (Bob Marsh, pers. comm.), of which the nearest to Routh is Elstronwick, only 11 kilometres distant. Most of the sites where the beetle has occurred, have been synanthropic situations, usually the site of mould infection, but they have included a house sparrow's nest and wasps' nests (Halstead, 1959). It has been recorded out of doors, but such occurrences have practically all been in, or near, man-made structures such as in a dovecote (Welch, 1985) or in a large heap of cut grass (Owen *et al*, 1997). Less explicit synanthropic habitats include grass tufts (Luff, 1965) and moss on a mountain (Luff, 1985) but both sites were quite close to buildings (Luff, pers. comm.). To the best of our knowledge, this is the first record of the beetle being associated with any mammal. Conversely, beetles are not held to have an association with live bats other, that is, than as dietary components (Hill & Smith, 1984).

The precise origin of the three specimens in this case is uncertain. Though contamination of entomological field collections with stray specimens is not entirely unknown, we have no good reason to believe that the specimens were not on the bat when it was found on the garden path. No other examples of the beetle were seen before, or have turned up since, in the room where injured bats were kept. ACL has been a bat-carer since 1994 and has never observed any small beetles associated with the mealworm-based diet.

We can only speculate, however, on whether the beetles were acquired by the bat before it reached the garden or afterwards. Published records cited above indicate

that the beetle occurs in a considerable variety of microhabitats, compatible with it breeding in or near the garden where the bat was found. If the animal was caught by a cat, as was suggested by its wounds, the bat might have picked up the beetles in the course of the cat playing with it.

Probably the most interesting possibility to be considered is that of the bat acquiring the beetles in its roost. This is presumably where bats usually acquire their fleas. Bat guano and other debris in the roost, such as might also occur in a dovecote, could provide conditions permitting the beetle to breed. In the roost, the beetles would probably meet up with the bat by chance. It is unlikely that the species has an in-built affinity for bats, for it lacks the specially morphology (usually of legs or tarsi) found in bat ectoparasites (fleas, bat flies, bed bugs, mites) giving them a secure hold on bats while they are flying. Moreover, these ectoparasites live on bat blood whereas the beetle and its relatives are mould feeders. Nevertheless, a limited ability of the beetle to hang on must exist if this is how the beetle reached the garden where it was found. Looking for the beetle in bat roosts might be a useful first approach in seeking support for this possibility (though readers are reminded that in view of the protected status of bats it would be necessary to obtain a licence before any such visit takes place).

We must thank Mr & Mrs Nadin, for rescuing the bat and bringing it to ACL and Bob Marsh for information on the occurrence of *L. serripennis* in Humberside.

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BRIAN BAKER

We were saddened to hear of the sudden and unexpected death of Brian Baker earlier this year. Brian was for many years at the Reading Museum and was a well known figure in entomological circles. He was President of the British Entomological and Natural History Society for 1983, but was perhaps best known for his expert knowledge of the clearwing moths (Sesiidae), contributing the chapter on this family to *The moths and butterflies of Great Britain and Ireland* (Harley).

TACHYSTOLA ACROXANTHA (MEYRICK) (LEP:OECOPHORIDAE) AROUND MANCHESTER: HISTORY AND CURRENT STATUS.

STEPHEN H. HIND

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Introduction

THE OECOPHORID MOTH *Tachystola acroxantha* was first recorded in England, from South Devon around 1920, having arrived from its native home in Australia, probably via a consignment of imported plants. It remained, restricted to South Devon until the 1980s, when it started to spread into the neighbouring counties of Somerset (1981) and Cornwall (1985).

Records from around Manchester

It was around this time that I started to take an interest in the microlepidoptera. The first *T. acroxantha* that I identified at my previous house in Hazel Grove, Stockport, was on 20 July 1988, although I had seen it during previous years without knowing its identity. I caught the odd specimen at the same site during the next two years and found another, two miles away on 24 May 1989. I lived in Hazel Grove until 1993 and ran a light trap intermittently throughout this period without catching any further specimens.

During 1990, B. T. Shaw, knowing of my interest in the microlepidoptera, showed me an example of a moth which he was taking in numbers from his garden in Heald Green, Stockport, some eight miles to the west of me. This was also *T. acroxantha*. It has been abundant at this site every year since, flying almost continuously from late April until mid December. Although moths are not regularly counted at this site, 44 were caught on 15 May 1999.

Whilst looking through a collection of photographs of micro-moths, which P. B. Hardy had sent to me to identify, I also came across examples of *T. acroxantha*. These he had taken in his garden in Sale, some eight miles to the north west of Heald Green. Two from 1986 and one from 1987, all pre-dated my first Hazel Grove specimens. The earliest date being 5 July 1986. A further two moths were also obtained from Sale during 1995.

All of the above mentioned sites are in Cheshire and lie along the southern edge of the Manchester conurbation.

Towards the end of 1996, I was shown another example of *T. acroxantha*, taken on 17 October 1996 from Flixton, South Lancashire, a further five miles west-north-west of Sale, by K. McCabe. Apparently the species had been present at this site since at least 1994. During the 1998 and 1999 seasons, 284 and 297 individuals were caught; with a maximum catch of 45 on 13 May 1998. The flight period extended from late April until late November. In both years it was one of the fourth most abundant species of micro-moth entering the m.v. trap.

On 31 July 1999, I attended a light being operated at a garden in Marple, Stockport, which attracted a single *T. acroxantha*. This extended the species range by a couple of miles to the north east and, three days later, one finally entered my

own garden trap, at Higher Poynton, which also extends the range by a couple of miles, this time to the south-east. In addition to these, A. Heginbottom, a colleague from work, showed me a specimen, taken at his house light, in Cheadle Hulme, Stockport on 21 September 1999.

Discussion

It would appear from the above sightings that *T. acroxantha* is not only well established throughout the south of the Manchester conurbation and has indeed been so for at least the past decade, but is also an extremely successful colonist, having become one of the most abundant species at suitable sites.

Its status in the north of Manchester is less clear, as I am unaware of anyone trapping in this area. However, on a visit to Bolton Museum during November 1999, I was shown a single specimen by M. G. Prescott, which he had taken in his garden at Bury earlier in the year. Bury lies about 20 miles north of the species nearest known sites in the south of Manchester and I would not be surprised to discover that it was just as common in the areas in between. Although it appears to be extending its range in the area, it has not yet been taken from sites beyond the Manchester conurbation, such as those on the Cheshire Plain.

Acknowledgements

I would like to thank those above for the use of their records and to Barry T. Shaw and Kevin McCabe for providing further information during preparation of this paper. I would also like to thank Bill Hardwick for confirming my initial identification of *T. acroxantha*.

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More on unusual micro-moths in Somerset

For nearly ten years the Bristol & District Moth Group has been actively recording in the field and also collating historic records for the region around Bristol and Bath. This area includes parts of Vice-counties 6 (North Somerset) and 34 (West Gloucestershire) and agrees with the region covered by the Bristol Regional Environmental Records Centre.

Further to Slade & Farrar (*Ent. Rec.* **111**: 232) the Group has records of *Tachystola acroxantha* (Meyr.) from Weston-super-Mare dating back to 1983 when it was recorded by Martin Evans. Since that time the species has been regularly reported by the same recorder and also by Dixie Dean. Consequently, the 1999

records of Slade & Farrar should not be interpreted as a linear extension of its range from its original Cornish stronghold.

Calamatropha paludella (Hb.) as reported by Slade (*Ent. Rec.* **111**: 210), had an excellent year in 1999. An earlier Somerset record though, is that of a specimen captured by Alan Bone in July 1996 at the Keynsham chocolate factory site (grid reference ST6 569) and sent to Bristol City Museum & Art Gallery for confirmation. The specimen was subsequently exhibited at the annual exhibition of the British Entomological & Natural History Society along with other interesting captures by members of the Group (*Br. J. Ent. Nat. Hist.* **12**:152-153). During 1999, *C. paludella* was also taken by Rick Andrews, Dave Gibbs, Rupert Higgins, John Martin and Andy Pym on a mothing night at Weston Moor Nature Reserve in the Gordano Valley (ST 4473) on 7 July. Subsequently, John Martin also recorded the species in his garden in Pilning, South Gloucestershire (ST 5584) and another was captured on 15 July 1999 in Gwent, at grid reference ST 3485, by Kevin Dupe.

Finally *Monochroa palustrella* Douglas has been recorded on three other occasions in vice-county 6 – on 20 August 1986 at Sand Point (ST 3266) by Martin Evans, 22 September 1995 at a field meeting of the Bristol Group at the Gordano National Nature Reserve (ST4473) and on Weston Moor Nature Reserve (ST 4473) by Dave Gibbs on 7 July 1999.

The Bristol Group is currently working on a publication of the moths of the region which will cover both macros and micros. Records from the former county of Avon would be very gratefully received. My thanks to the members of the Group for permission to quote their records.– RAY BARNETT, City Museum & Art Gallery, Queen's Road, Bristol BS8 1RL.

Sympherobius klapaleki Zeleny (Neur.: Hemerobiidae): a second British record – from South Essex

On 15 June 1999 at about 5pm, whilst undertaking an insect survey of Larks wood, South Essex (Vice-county 18 at grid reference TQ 382926), I swept a brown lacewing which keyed out as *Sympherobius pellucidus* in Colin Plant's AIDGAP key (1997), except that it had pale antennal scapes and pedicels, a character taking it to *S. klapaleki*, as described in the footnote which also suggested that this species is possibly present in Britain. The specimen was duly passed to Colin Plant who confirmed that this was indeed an example of *S. klapaleki*.

Since the publication of Colin's key, *S. klapaleki* has indeed been added to the British list – from Silwood Park, Berkshire (Whittington, 1998: *Ent. Rec.* **110**: 288 - 289), reared from a pupa attached to a dead oak twig in April 1994 and so the present example is the second British record. Larks Wood is situated within one kilometre of Epping Forest and is a remnant of the ancient forest, although in former times it was managed as an oak and hornbeam coppice, rather than with pollards. It has a strong saproxylic beetle fauna, centred on a handful of sickly beeches and a few of the oak trees. I am not able to say whether the specimen of *S. klapeleki* was associated with dead wood in any way, but it is likely to have been swept from low

branches rather than herbage as the coppicing has been long-neglected, leading to excessive shade as far as ground flora is concerned over much of the wood. To find *S. klapeleki* in Essex under the above circumstances supports the notion that it is an overlooked native species. As more records become available, its habits and habitat associations should become deducible.

My thanks are given to Colin Plant for checking and identifying my lacewings and Nick Evans, London Borough of Waltham Forest ecologist for commissioning the survey.– DAN HACKETT, 3 Bryanstone Road, Crouch End, London N8 8TN (E-mail: Daniel@dhackett.fsnet.co.uk).

Early Red Admiral

An active Red Admiral *Vanessa atalanta* (L.) was seen on 26 February 2000 on Alderley Edge in Cheshire (grid reference SJ 8577), in bright sunshine. Considering the early date and that the butterfly was abundant on Alderley Edge during October 1999, this butterfly has very possibly over-wintered. A number of old, hollowed-out oaks line the sheltered sloping path along which it was seen and may well have provided it with an over-wintering site.– R. L. H. DENNIS, 4 Fairfax drive, Wilmslow, Cheshire SK9 6EY.

First Millennium butterflies?

My wife saw a Red Admiral *Vanessa atalanta* (L.) in central Exeter on 5 January 2000 which I thought was a good candidate for the first Millennium butterfly (on the same day, I also found eggs of the Brown Hairstreak butterfly on two new tetrads, at grid references SX 9698 and 9597). However, this has been eclipsed by my friend Colin White who saw a Peacock *Inachis io* (L.) on the beach at Seaton, Cornwall (SX 300542) at 12.15pm on 1 January 2000.

My last adult butterfly of the old millennium was a Red Admiral on 1 December. Brown Hairstreak eggs were found in three new tetrads on 16 December (unfortunately, the last opportunity that I had for searching for them in 1999).

Any challengers? - ROGER BRISTOW, Davidsland, Copplestone, Devon EX17 5NX.

Millennial moths

Curious to see which species would be my last of the old millennium, I put my trap out on New Year's Eve 1999 and was surprised in the morning to find in it a single specimen of Silver Y *Autograph gamma* (L.). I was even more surprised the following morning to find that my first species of the new millennium was Light Arches *Apamea lithoxylaea* (D. & S.), a moth I do not usually see until the end of May. Both moths were accompanied by several specimens of *Epiphyas postvittana* (Walk.) and *Udea ferrugalis* (Hb.), but I have come to expect to see those two species at any time of year.– P. D. M. COSTEN, La Broderie, La Claire Mare, St Peters, Guernsey GY7 9QA.

ANTHOCHARIS GRUNERI GRUNERI HERRICH-SCHÄFFER, (LEP.: PIERIDAE) NEW FOR THE GREEK ISLANDS

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GRUNER'S ORANGE-TIP *Anthocharis gruneri gruneri* Herrich-Schäffer, [1851], occurs locally in the southern part of the Balkan Peninsula. The known range here comprises: Albania (Rebel & Zerny, 1931: 67), Macedonia (Jaksic, 1988: 58: map 43; Schaider & Jaksic, 1989: map 47), Greece (Pamperis, 1997: 65) and Bulgaria (Abadjiev, 1992: 43). In Europe it has also been recorded for Hungary (a single specimen) (Bálint & Janáky, 1989:229–230; Bálint, 1991: 21).

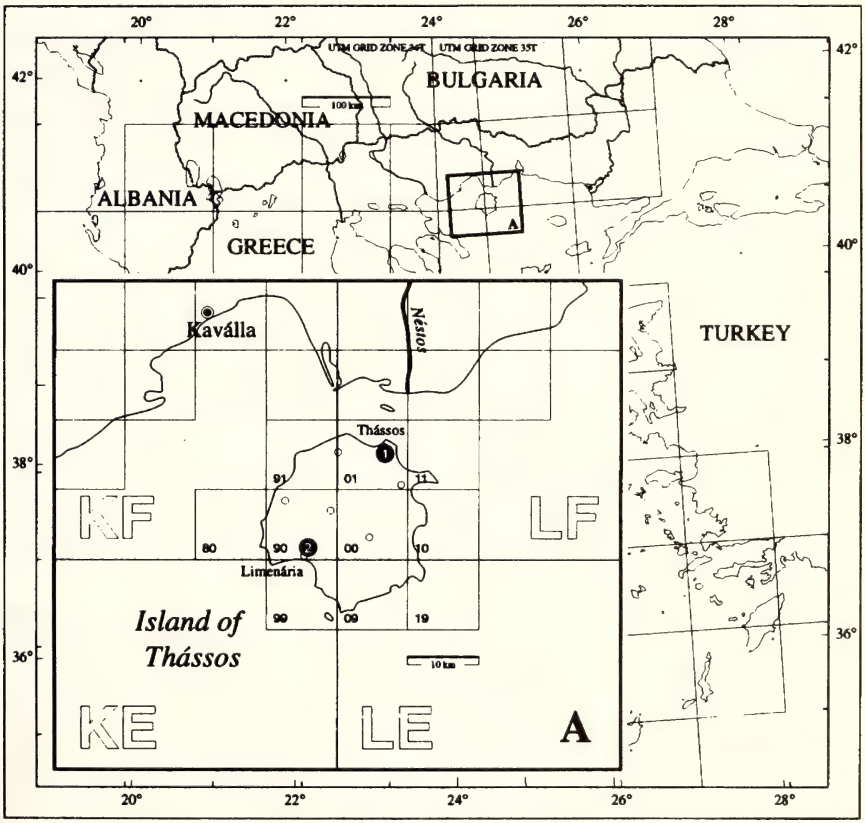

Figure 1. UTM map showing the position of localities of *A. gruneri gruneri* Herrich-Schäffer, [1851] on the Island of Thássos: (1) Thássos, (2) Limenaria (black filled circles).

When studying the rich butterfly collection of the National Museum of Natural History (NMNH) in Sofia, a small series of *Anthocharis gruneri* drew my attention. The specimens were collected by N. Karnozickij on the Island of Thássos in 1943. The localities and material examined are as follows: (1) Thássos (Limen) (UTM grid reference 35TLF01): 25.IV.[1]943 — 1 ♂; 27.IV.[1]943 — 1 ♀; 30.IV.[1]943 — 1 ♀; (2) Limenaria (UTM grid reference 35TKF90): 30.IV.[1]943 — 5 ♂♂; all N. Karnozickij leg. (see also Fig. 1). It should be noted that in the period of 1942–1944 many expeditions for collecting zoological, botanical, geological and other materials were organised by some Bulgarian institutions. N. Karnozickij himself visited Greek Aegean Coast and the Island of Thássos in 1942–1943 as a member of an expedition organised by the NMNH and The Sea Biological Station, Varna. Zoological results (concerning Coleoptera) were published subsequently (Karnozickij, 1959) but, unfortunately, nothing about Lepidoptera appeared.

After this unusual finding an extensive literature search has been carried out in order to find some published record about *A. gruneri* on Thássos. The only result was that the species has remained unrecorded for the Greek islands for a long time (cf Tolman, 1997: 49: "not reported from... Greek islands") and as far as the Island of Thássos is concerned it is really absent in the modern faunal lists (Olivier, 1987; Littler, 1991).

Here the species is reported as new for the Island of Thássos (and even for the Greek islands as a whole).

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Apion brunnipes Boh. (Col.: Apionidae) in Dorset

I find that one specimen in my series of *Apion (Taphrotopium) brunnipes* Boh, is labelled "Cranborne 18.vii.37. P.H." This north-east Dorset locality was one of Philip Harwood's occasional collecting-grounds. *A. brunnipes* is an extremely local species, living on *Filago* and *Gnaphalium*, for which Morris (1990. *Handbk. ident. Br. Insects*, **5**:16) lists the British records as from North Devon, West Kent, Berkshire and East and West Suffolk only. In the sandy area of Tubney, Berkshire (near Oxford) it used to occur in some numbers to J. J. Walker and others in the first decade or two of the last century.– A. A. Allen, 49 Montcalm Road, Charlton, London SE7 8QG.

Apion semivittatum Gyllenhal (Col.: Brentidae) in South Wiltshire

Whilst staying with relations in Salisbury (grid reference SU 1231) in August 1987 I noticed small feeding holes in the leaves of young plants of *Mercurialis annua* growing in a narrow cultivated strip under their front window. Anticipating that these might be caused by the very locally distributed *Apion semivittatum*, I kept an eye on the patch and over the next few weeks I recorded over a dozen examples of the weevil. Morris (1990, *Handbk. Ident. Br. Insects.* **5**, part 16: 41) reports the beetle from East and West Kent, East Sussex, South Essex and Wiltshire – the latter county being included, as far as I am aware, on the basis of the record presented here which was communicated to Dr Morris.– David R. Nash, 3 Church Lane, Brantham, Suffolk CO11 1PU.

A curious colour-variety of *Quedius curtipennis* Bernh. (Col.: Staphylinidae)

A rather large female of this common, black *Quedius*, taken by Mr K. C. Lewis at Chalk Wood, Bexley, West Kent on 10 July 1989, proved to be abnormal in one very unusual respect. The whole of the epipleurs, or turned-down lateral edges of the elytra, are very distinctly and sharply reddish-yellow; the colour is narrowly visible from above at the shoulders. In normal specimens, these parts are concolorous with the rest of the body. No such variation in either this or the allied species appears to be mentioned in any of the works that I have seen. - A. A. Allen, 49 Montcalm Road, Charlton, London SE7 8QG.

The juniper mirid *Dichrooscytus gustavi* Josifov (Hem.: Miridae) found on cypress

On 24 June 1999, I knocked several specimens of a small brightly coloured mirid bug from a row of four-metre-high cypresses, bordering the car park just north of Chalfont and Latimer railway station, Buckinghamshire (grid reference SU 996976). The trees were probably the ubiquitous garden scourge *Cupressocyparis leylandii* (Jackson & Dallimore). Later, with the help of Mr P. J. Hodge, the bugs were quickly determined as *Dichrooscytus gustavi*, formerly *D. valesianus* (Meyer-Dür). This very local bug, accorded nationally scarce (Notable B) status by Kirby (1992; *A review of the scarce and threatened Hemiptera of Great Britain*), was previously known only from junipers, and at the time of Kirby's review was

recorded from only about 20 recent localities in Oxfordshire, Buckinghamshire, Berkshire, Kent, Surrey, Sussex, Wiltshire and Worcestershire. It was thought to be declining because its foodplant and habitat have become much rarer in southern England over the last hundred years. However, its movement to a new foodplant has long been anticipated. Kirby listed two records from cultivated juniper species, and suggested the possibility that the bug would find a new foodplant among the myriad juniper-related garden shrubs and trees. *Dichrooscytus gustavi* would appear to have found that new foodplant, and follows the jumps earlier made by the juniper shield-bug *Cyphostethus tristriatus* (Fabr.) and juniper lygaeid *Orsillus depresses* (Mulsant & Rey) from wild juniper to garden cypress.– RICHARD A. JONES, 135 Friern Road, East Dulwich, London SE22 0AZ.

Hockeria bifasciata Walker (Hym.: Chalcididae), an accidental import into Britain

A female of this parasitic wasp was reared from a microlepidopteran pupa found on a peach *Prunus persica* purchased in a supermarket in Reading. The stated country of origin of the fruit was Italy. The wasp emerged on 1 July 1999 a few weeks after the date of purchase. Its identity was established by reference to Bouček (1952. The first revision of the European species of the family Chalcididae. *Acta Entomologica Musaei Nationalis Pragae Supplementum* **1**: 1-108) and confirmed by comparison with identified specimens in the collections of the Natural History Museum, London. This species is normally found in the warmer parts of continental Europe but, although Ferrière & Kerrich (1958. Chalcidoidea. *Handbooks for the Identification of British Insects* VIII part 2(a): 1-40) anticipated the occurrence of *Hockeria* in Britain, there is no evidence of it being established here. The wasp and host remains will be deposited in the collection of Reading Museum and Archive Service. Thanks are due to Christine Taylor for access to the collections at the Natural History Museum and to Mr J. Notton for donating the specimen to Reading Museum.– DAVID G. NOTTON, Curator of Natural History, Reading Museum and Archive Service, Museum of Reading, Blagrave Street, Reading RG1 1QH. (E-mail: david.notton@reading.gov.uk).

Orange Upperwing *Jodia croceago* (D.& S.) (Lep.: Noctuidae) in Devon

A battered, desiccated and irretrievably damaged specimen of the Orange Upperwing moth was found in spider's silk, hanging from a strand under a spider's web, in the Stover Park area of Devon, near Newton Abbot, on 8 October 1999. The last time it was found in this area was on 30 October 1970 by Bernard Skinner. Other recent records are from Yarner Wood, near Bovey Tracey in 1977 and Heddons Mouth, on the Exmoor coast, in 1990. There are no specimens, as far as I am aware, to support these last two records.– ROY MCCORMICK, 36 Paradise Road, Teignmouth, Devon TQ14 8NR.

Two Species of Nepticulidae (Lepidoptera) new to Somerset and one new to North Somerset

I would like to report the discovery of the following species of Nepticulidae in Somerset.

Ectoedemia quinquella (Bedell) at Hollow Marsh (grid reference ST 6156) in Vice-county 6 (North Somerset), on 16 October 1999. A vacated mine was found on *Quercus robur*. This species has been spreading westwards and has been recorded from all the vice-counties adjacent to North Somerset except for South Somerset.

Stigmella samiatella (Zeller) at King's Cliff Wood (ST 2631) in VC 5 (South Somerset), on 20 July 1999. The vacated mine was found on *Castanea sativa*. The nearest records to this site are in South Wiltshire (VC 8) and South Wales.

Ectoedemia angulifasciella (Stainton) was found on *Rosa canina* at Hollow Marsh on 14 October 1998 and again on 16 October 1999. I have also recorded it from Turn Hill (ST 4131) and Westhay Moor (ST 4544). All these sites are in North Somerset. This species had not been previously recorded in North Somerset although it is known from every other English vice-county except North Northumberland.

I would like to thank John Robbins for identifying *S. samiatella* and confirming my identifications of *E. angulifasciella* and *E. quinquella*. I would also like to thank Maitland Emmet for confirming the new county records and for the information on the distribution of these species.– MARTIN ELLIS, 14 Great Ostry, Shepton Mallet, Somerset BA4 5TT. (E-mail: mjellis@tesco.net).

Hazards of butterfly collecting: Visiting the Flemings – Malaysia, 1975

In November, 1975, I was on my first visit to Malaysia, part of a team running a seminar on the evaluation of family planning programmes. It was my first trip farther east than India; I would be able to take a ten-day vacation. I had written in advance to local members of various entomological societies. I had published *Butterflies of Lebanon* the year before, fine reviews were just coming out, and for the first time I had the vicarious pleasure of feeling famous!

A few days before the end of my seminar, three of the most well-known butterfly collectors converged on the Equatorial Hotel for a planning session, together with my late wife Kiki. I was to be looked after sequentially: First a long weekend with Anthony Owston and his wife. Then four days with Henry Barlow in the Genting Highlands, just 40 km out of Kuala Lumpur. Then four days with Wicky and Alix Fleming, who had just published an excellent illustrated guide to the butterflies of the Malay Peninsula, somewhere up in Selangor. This seemed a splendid and most generous arrangement; it was actually much better than that!

Anthony Owston took us to a wonderful forested valley south of KL, Ulu Langat, now long since logged to death. The first thing we saw was a large mudpuddling butterfly assemblage, with the Rajah Brooke Birdwing *Trogonoptera brookiana* as a major component. My first serious swing with a net in Malaysia yielded three picture-perfect Rajah Brookes! A dirt road, running along a small river provided almost perfect collecting conditions. We netted some 100 species that day, which is good for the Oriental Region – many more can be found in a day in Africa. Some hours later Vivien Owston unpacked what must have been the most sumptuous picnic I have ever seen. Several interesting skippers landed on an exceptionally good paté, showing a culinary discrimination with which they are not usually credited! One of my most marvellous experiences that day was running into a little group of orang asli on the river – they are the aboriginal inhabitants of Malaysia. A family was sitting on a sandy spit eating crabs. The father got up, shook hands, grabbed my killing bottle, and toppled out its contents. He was deeply unimpressed. Skippers and small blues! Not the stuff of commercial collecting. The orang asli make money out of butterflies!

Next came the Genting Highlands. Henry Barlow was a gracious host. During a lifetime he has done wonders for the study and conservation of natural history in Malaysia. His old tea plantation – now allowed to go wild – was full of butterflies. I listed some 200 during our stay. I must have been reasonably energetic, for Henry wrote many years later in a book review: Larsen confidently predicts than several species remain to be discovered in Oman; for someone who has seen him in action this is difficult to believe. I also had my first taste of the famed Durian fruit. It tastes heavenly, but it smells like an ill-maintained public toilet. Henry had a durian-eating corner at the bottom of his garden and only served them if the wind was right. The last night at the Genting Tea Estate we had a lovely party, and were then removed to Selangor by the Flemings. We drove up late and were quickly in bed.

The next morning we woke up in a time warp. Wicky Fleming managed a rubber estate in Bukit Rotan on which little had changed since colonial times. Servants in sarongs brought bed-tea at 06.30. Breakfast with fried eggs and kippers was served an hour later in the huge dining room, with the four of us sitting at a long table that could seat twenty-four. Wicky was a bit hard of hearing, and seated in the middle of the table we found ourselves transmitting messages between him and Alix, wondering how they managed when there were no guests. It could have been straight out of a Somerset-Maugham short story.

Soon we went off on butterfly collecting and had an interesting day despite the poor weather, but we ended back on the plantation early. Time to inspect the collection – oops, collections! For Wicky and Alix were fiercely competitive. There was a his and her collection. I forget the exact details, but there are just about 1,000 species of butterflies in Malaysia; Wicky had about 992 and Alix about 990! Both collections must be the most complete of any tropical country anywhere.

That evening over drinks, Wicky told us about his life, all of which had been spent in Malaysia. As a young planter he had been interned for the entire World War II in

a Japanese internment camp, an experience so horrendous that it can hardly be communicated. He decided to stay on after independence and was now reaching retirement age. But this surviving icon of the colonial age also wrote his simple, but excellent book on the butterflies of the Malay Peninsula. What a pity he could not put on record his unsurpassed field knowledge of the Malay butterflies.

Nancy and I spent Xmas and new year 1998 in a Malaysia changed beyond belief. The sleepy town of KL is now a concrete megalopolis, proud of having the tallest building in the world. Its motorways allows you to travel north to south at 100 km/h – back home in Manila we manage 5 km/h. Anthony Owston and Wicky Fleming are dead. But on the first day of 1999 we did revisit Henry Barlow up in the Genting Highlands for a splendid lunch – with the occasional Rajah Brooke Birdwing swooping down on the Bauhinia just outside. I studied my handwritten list of species written in 1975; this was before portable computers – am I really that old?

Henry is still a driving force in Malaysian natural history. He now has firm records of nearly half of all Malaysian butterfly species from the Genting Tea Estate. Henry also told us a fine little anecdote. Wicky was apparently very fond of cheap plonk, and he had a little tree-house on a remote hilltop, where some of his best butterflies were caught hill-topping, including one new to science. He threw empty bottles off the tree-house, and there are many indeed, after several dozen years. It will be very interesting to see what some some archaeologist will make of this some hundred years from now! – Torben B. Larsen, 5 Wilson Compound, 2811 Park Avenue, Pasay City, Metro-Manila, The Phillipines. (E-mail: torbenlarsen@compuserve.com).

BOOK REVIEWS

The genus Rhipicephalus (Acari, Ixodidae): a guide to the brown ticks of the world by **J. B. Walker, J. E. Keirans and I. G. Horak**. 643pp. Numerous distribution maps. 265 figures (SEM plates). Hardbound. ISBN 0 521 48008 6. January 2000. Cambridge University Press. £70.

Ticks are blood suckers which can transmit serious disease. Thus they have few friends in this world and there is probably little chance of a tick conservation society! Nevertheless, ticks are as fascinating as any other group of arthropods and if a person wants a challenging group to collect and identify, then this is it! In all, there are about 850 known species of ticks in the world and these are mainly placed in two families, the "hard ticks" (Ixodidae) and the "soft ticks" (Argasidae). The family Ixodidae is the bigger of the two and is composed of thirteen genera; the genus *Rhipicephalus*, the subject of this new book, is a relatively large genus with 74 species (most occur in Africa).

This impressive book is the combined work of three highly respected specialists, most notably Jane B. Walker, who has spent forty years studying African ticks, particularly in the genus *Rhipicephalus*. The book divides the species into those occurring in the Afrotropical

Region and those occurring elsewhere. Identification keys are provided for the adult male and female of every known species, while for the nymphal and larval stages, line drawings of the head parts of similar species are grouped together to facilitate identification. The treatment of each species includes further diagnoses of the male, female, nymph and larva, line drawings of the male and female, superb SEM plates of critical features, host records, a distribution map, notes on disease transmission and relevant references.

Though inevitably the book will be of major appeal to specialists and academic institutions, it could easily be used by a keen naturalist, with no previous knowledge of the group, to identify specimens. The introductory sections of the book are sufficiently good for anyone to learn about the group and to proceed with identification. In fact, the book is so good, one only wishes that similar volumes on other genera might be forthcoming. If so, they would transform the study of ticks. Unfortunately, however, this present volume may remain a unique work as there are so few people in the world who have dedicated their lifetime to the study of a particular genus of ticks!

Paul D. Hillyard

World catalogue of insects. Volume 2. Hydrophiloidea (Coleoptera) by **Michael Hansen**. 416 Pp.. 240 x 170 mm, hardbound. ISBN 87-88757-31-5 and ISSN 1398-8700 for the series. 1999. Apollo Books, Kirkeby Sand 19, DK-5771 Stenstrup, Denmark. E-mail: apollobooks@vip.cybercity.dk. Price 690 Danish Krone plus postage. Subscribers to the series qualify for a 10% discount.

Up-to-date and reliable catalogues and checklists provide essential underpinning to all those aspects of "organismal" biology that are concerned with the diversity of life. In principle then, any new series devoted to serious cataloguing should arrive on the scene to a ready-made welcome. In practice, however, such new ventures represent a "publishing opportunity" that may be seized by the unscrupulous. Feeding on the voracious hunger for new information products that our age demands, it is easy enough for uncritically processed information to be packaged for release on a market that, if not entirely unsuspecting, is nevertheless largely unable to realise that it is being sold a turkey. This is not to say that every "information product" dealing with names of organisms has to be the perfect scholarly work in order to be useful but, if the ratio of noise to information reaches above a certain level it is certainly possible for a catalogue to do more harm than good. Any review of a new cataloguing venture thus needs to address at least two questions. Is it effective in promoting the dissemination of much-needed information in a way that is timely and effective? Is the quality of the information up to the job?

After that wordy preamble, let it be said that the *World Catalogue of Insects*, on the evidence of the first two volumes to appear, passes the second test with flying colours. In brief, these are well edited works of a high scholarly standard that can be relied upon to give an accurate representation of where we stand with respect to the task of describing and ordering the species of the insect groups (hydraenid beetles in Volume 1, hydrophiloid beetles in Volume 2) covered. And yes, there seems to be every indication that the series will include timely and effective products (see further below).

Having given my personal thumbs-up to this series, what else might be said of the new cataloguing series that has been launched under the title *World Catalogue of Insects*, and of the volume in hand that covers the approximately 2,800 known species of the beetle superfamily Hydrophiloidea?

Taxonomic treatment of the superfamily. Whether or not the taxonomy behind the classification used is of a particular quality or meets with ones particular approval is not a really significant basis for any criticism of a catalogue. Suffice it to say that this catalogue has an adequate (if short) introduction describing and explaining the system used which is effectively that put forward by the catalogue's author in recent comprehensive treatments of the classification of the group (Hansen, 1991, 1995). Whether or not this arrangement is somewhere near the final answer as to how best classify groups of Hydrophiloidea, it is certainly somewhere near (questions of ranking perhaps to one side), to being the best available system at present. The significant features, for those not familiar with Hansen's recent studies, are that (following a consensus that surely can only grow stronger), the Hydraenidae are excluded as belonging to the Staphylinoidea, the Histeridae and allies are also excluded, as members of a separate superfamily the Histeroidea, and the remaining "Hydrophiloidea" proper (or Hydrophilidae proper to many), are referred to six families: Helophoridae, Epimetopidae, Georissidae, Hydrochidae, Spercheidae and Hydrophilidae. In large part, the exclusion of Histeroidea and the family system used for Hydrophiloidea in the narrow sense stem from questions of ranking, rather than any serious disagreement over relationships with the competing systems that decline to give separate superfamily status to Histeridae etc., and/or refer all Hydrophiloidea (excluding Histeridae etc.) to just one or two families. Following this "Hansen" system all taxa of Hydrophiloidea down to the level of subgenus are arranged in the catalogue in systematic order, with only species within genera/ subgenera listed alphabetically.

Treatment of names. Despite the fact that the author is a taxonomist with intimate knowledge of the group, a few decisions made with respect to names have purely "nomenclaturist" justifications. If consistency and communication needs, rather than the letter of the law, had been considered the first priority, the author could, for example, have avoided listing the species well-known to European entomologists as *Megasternum obscurum* under the unfamiliar name of *M. concinnum*..

Format of entries. In the introduction to this catalogue and in the promotional material for the series it is made clear that, despite keeping to a consistent format, individual catalogues will vary with respect to the inclusion of "additional information" over and beyond a stipulated "minimum". This variability is clearly sensible, as the ease with which additional data (on, for instance general biology of species, their applied significance, etc.) can be gathered and, indeed, its usefulness, varies greatly from group to group. *This* particular catalogue limits citations, generally speaking, to the original ones for each name (whether a valid name or one in synonymy), and additional citations in which *taxonomic* (e.g. new synonymies or combinations) or *nomenclatural* (e.g. emendations) changes have first been established or noted.

Distributional data. The level of detail and quality of the geographical distribution information provided represents one of the strengths of this catalogue. Although the "detail" descends generally speaking only to the level of country or, in the case of some large countries (e.g. USA, Canada, China) state or province, this is entirely appropriate for a catalogue at world level. A little more precision than a country name would, however, have been welcome for some of the more narrowly endemic species. Importantly, but unlike many catalogues, the available distribution data are treated critically, and where these are doubtful or in error this is noted; when the presence of species in a given region or country is known to be due to introduction this is also made clear. Both of these features are very welcome and provide testimony to the great advantage of having a catalogue produced by an individual with extensive "hands-on" knowledge of the group in question, rather than being done as a "desk-study" from the literature without intimate knowledge of the group.

References section. In the case of this volume the references section of almost 60 pages effectively represents a complete bibliography of taxonomic work on the Hydrophiloidea, and is of considerable value in its own right. Publication dates and other details have been well researched, with (as properly acknowledged), the help of a number of skilled librarians. The presentation of the references is slightly marred, however, by the method of justifying the type that has been used. This involves squeezing too many words into some lines, with the result that some words are effectively run together; for example, without a knowledge of German, the reader might reasonably conclude that "Mitteilungender" is all one word

Appendices. There are three of these: (1) a list of fossil species of recent genera, with appropriate citations; (2) a list of *nomina nuda*; (3) a list of species now excluded from (but at one time at least nominally in), the Hydrophiloidea. All three may be of little concern to the general user, as there primary purpose is to provide guidance to those who may have to deal with problems of a purely nomenclatural nature. Not surprisingly, most of Appendix 3 is composed of early (many of them pre-1800) names that were described in or referred to *Sphaeridium, Hydrophilus* or *Helophorus*, all genera which once were repositories for a great variety of beetle species that have nothing to do with the Hydrophilidae in the modern sense. A list of 15 "species incertae" at the end of the main listings is composed of those hydrophiloid or *probably* hydrophiloid taxa that remain unplaceable at present. All of these names, no doubt, are (at least potentially) referable to species already well-known under other names.

Indexes. Arranged over 30 pages, there are separate indexes for family-group, genus-group and species-group names.

Sensibly, the details of each species entry are in smallish print, but the font used and print quality make all text clear enough (for me) to read without spectacles. There are very few typographical errors. Two, however, are unfortunately to be found in the "blurb" for the series to be found on the book's back cover. This advertising material gives a useful statement of intent with respect to the series as a whole, but in English which is undoubtedly "strained"; the publishers would be well advised to get this re-drafted (minus typos) for future volumes.

This is the second volume of the series to be published. It very much mirrors the style of the first on Coleoptera Hydraenidae (see review by Ribera, 1999). Seven more volumes are stated to be in the pipeline. In part, the eventual success of the series will be judged on whether the high standard of scholarship set by the volume in hand is maintained. Also, it is to be hoped that the series will provide active encouragement to the production of further catalogues that might otherwise gestate for a more protracted period or perhaps never see the light of day. If this is so, and a good flow of catalogues results, the World Catalogue of Insects may be deemed a success in all important respects. In addition, and of course, it is important that the production standards are maintained, along with an affordable price.

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Peter Hammond

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In Memoriam

Book Reviews

THE ENTOMOLOGIST'S RECORD

AND JOURNAL OF VARIATION

(Founded by J.W. TUTT on 15th April 1890)

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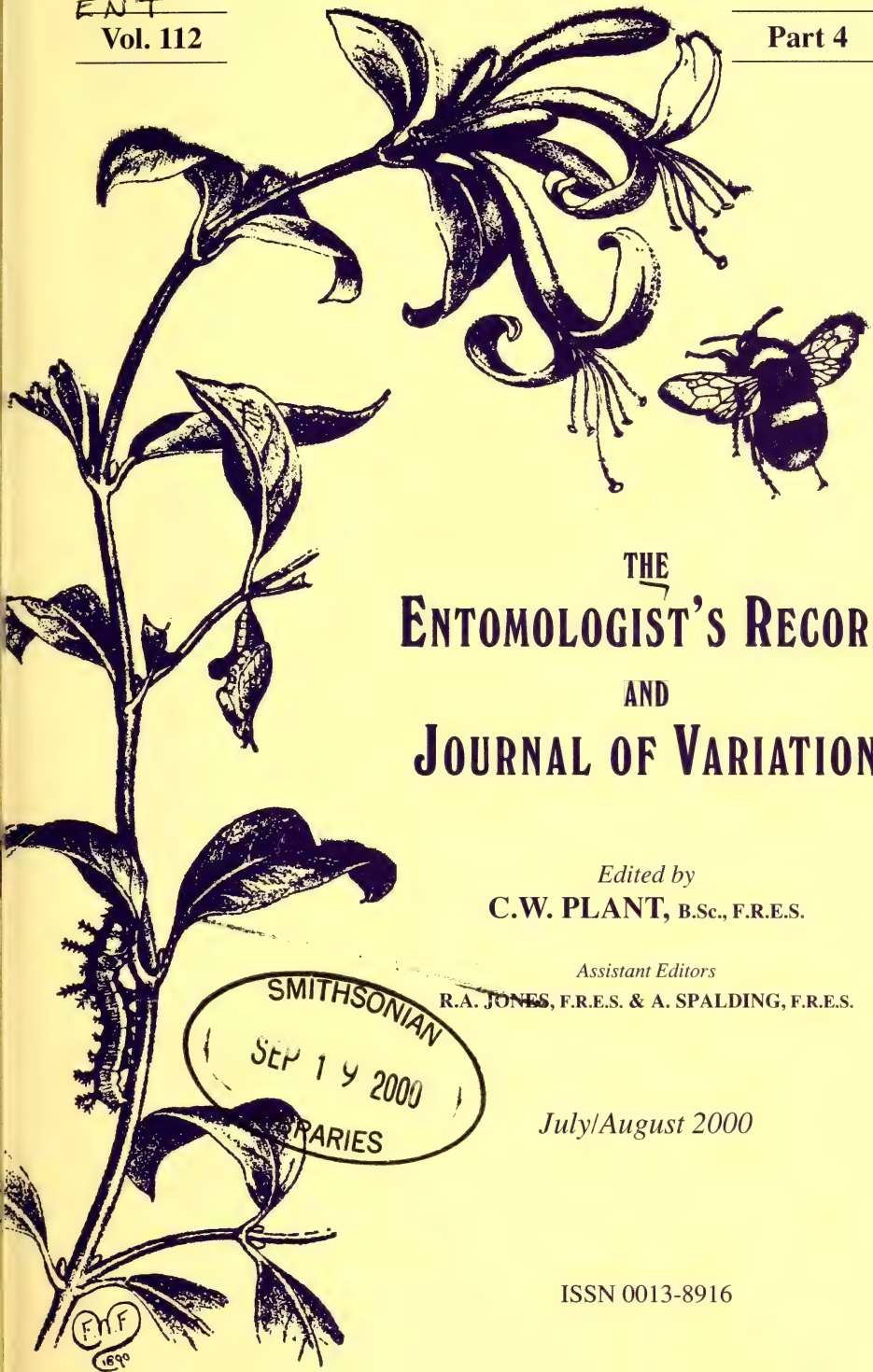

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THE LARGER MOTHS (MACROLEPIDOPTERA) OF CULM GRASSLAND, NORTH DEVON

ROBERT J. WOLTON

English Nature, 1 Southampton Road, Lyndhurst, Hampshire SO43 7BU.

Summary

CULM GRASSLAND is the local name given to species-rich purple moor grass *Molinia caerulea* and rush *Juncus* pasture. The larger moths (macrolepidoptera) of four culm grassland sites in North Devon were surveyed to determine which species are characteristic of the habitat, particularly which rare and uncommon ones, and whether site management may be beneficially adjusted to favour these moths.

A total of 3,600 individuals of 193 species was recorded. Three nationally scarce species were caught, Narrow-bordered Bee Hawk-moth *Hemaris tityus,* Devon Carpet *Lampropteryx otregiata* and Double Line *Mythimna turca.* A further 29 nationally Local species were found. This high number of restricted species suggests that culm grassland is an important habitat for moths.

The Narrow-bordered Bee Hawk-moth and Double Line are priority species for conservation action within the UK Biodiversity Action Plan. The latter was the fifth most abundant species caught on the culm grassland sites that were surveyed. The larvae of both species feed on plants typical of the open sward (although the food plants of the Double Line need verification).

Only thirty-seven (19%) of the 193 species caught show a clear preference for feeding as larvae on grasses and herbs typical of open culm grassland, as opposed to ninety (47%) on plants typical of associated scrub and woodland. Consequently it is recommended that site management should aim to conserve not just the open sward, but also associated woodland, scrub and hedges. The open sward is, however, relatively more important for scarce and local moths, probably supporting 12 such species compared to 15 for woodland, scrub and hedges. Thus, just as for the Marsh Fritillary *Eurodryas aurinia*, a butterfly for which culm grasslands are a national stronghold, care should be taken to burn or cut no more than half of a site in any one year.

Introduction

Culm grassland is the local name given to the species-rich purple moor grass and rush pastures that occur on the acidic, poorly-drained soils of North Devon and north-east Cornwall. The habitat has experienced severe declines in recent decades, largely as a result of agricultural intensification, and has its own habitat action plan within the UK Biodiversity Action Plan (UK Steering Group, 1995).

Culm grassland sites possess an intricate, but distinctive, mix of various types of poor fen and mire plant communities (Wolton, 1993). Characteristically, sites contain a mix of fen meadow, rush pasture and wet heath and are dominated either by purple moor grass or by rushes, but with a wide variety of other plants present, in

particular sedges *Carex* spp. and herbs such as devil's-bit scabious *Succisa pratensis* and meadow thistle *Cirsium dissectum*. Frequently heathland plants such as heather *Calluna vulgaris* and western dwarf gorse *Ulex gallii* are present, together with bog mosses *Sphagnum* spp.. Stands of tall fen plants, in particular meadowsweet *Filipendula ulmaria*, are occasional. The main National Vegetation Communities (NVC) present are M16b, M23b, M24c, M25c and M27c (Rodwell, 1992).

Culm grasslands usually contain woodland and scrub, often in the form of small woods or thick hedges dominated by oak *Quercus* spp., birch *Betula* spp. and hazel *Corylus avellana*. Sites often have patches of willow *Salix* spp. scrub within them. These trees and shrubs possess luxuriant moss and lichen epiphytic communities.

Traditionally culm grassland is used as rough summer grazing by cattle. Sites dominated by purple moor grass are usually burnt annually or biennially and those dominated by rushes topped (that is, cut at a height of 10 cm or more). Grazing on its own is seldom sufficient to prevent sites becoming rank and invaded by scrub.

The aims of this study were to determine which larger moths (macrolepidoptera) are characteristic of culm grassland, whether the habitat supports any particular specialities and whether management practices may be beneficially adjusted to favour the moth fauna. The moth records made at Dunsdon Farm by Spalding (1989) are incorporated into this paper.

Study sites and sampling methods

Four culm grassland sites in North Devon were selected for sampling: Dunsdon Farm, Coombe Meadow, Hollow Moor and Southmoor Farm. The sites were selected on the basis that together they exhibited almost the full range of vegetation communities typical of Culm grassland. A description of each of the four sites is given in Appendix 1.

The majority of sampling was carried out using portable "Heath" light traps. Up to three Heath traps were used on any one night on a site. In addition, at Dunsdon Farm a mercury-vapour light, positioned above a white sheet and powered by a portable generator, was used on seven nights. Moths were caught as they came to the light and stored in boxes until the end of the session so that numbers could be counted (Spalding, 1989).

It was intended to sample each of the sites at least once a month between April and September. This was achieved at Dunsdon Farm and Hollow Moor, and also at Coombe Meadow except for April. At Southmoor Farm, the owners declined to grant access permission after the end of June 1987. Table 1 presents details of the number of trap nights at each site, and the first and last dates of trapping. All trapping was carried out during 1987 and 1988.

In addition to the use of ultra-violet lights a few moths were caught with the aid of a strong halogen searchlight and a hand net, and by sugaring. Also some moths were caught by hand net during daytime visits and at dusk.

Results

The species of macrolepidoptera caught at each of the four study sites are given in Appendix 2, together with the number of individuals caught. No trapping was carried out after 22 June on Southmoor Farm, which explains the low number of species caught there. Numbers are given so as to provide a rough index of the relative abundance of species, albeit a very crude one due to differences in sampling effort during the course of the year and to differences between species in their response to ultra-violet light and weather conditions. Over 3,600 individuals of 193 larger moth species were recorded. Half of these species were recorded at three or more sites.

Table 1. Trapping effort at each study site, and first and last dates of trapping.

Study site	Number of light trap nights		Number of nights when traps operated	First date of trapping	Last date of trapping
	Heath trap	MV light			
Dunsdon Farm	26	7	10	11 March	3 September
Coombe Meadow	19	0	9	17 May	21 September
Hollow Moor	27	0	16	24 April	4 October
Southmoor Farm	10	0	10	12 April	22 June

Table 2 picks out those rare, uncommon and local species as classified by Waring (1994, 1999), together with details of their larval food plants. Three species are nationally-scarce and a further twenty-nine are nationally-local.

Further information on larval food plants is given in Table 3, this time for all species of moth caught. Thirty-seven species (19% of the total catch) feed only on plants typical of the open sward of culm grassland, while ninety (47%) feed only on those typical of associated scrub and woodland. For scarce and local moths a greater proportion (12 species: 37.5%) probably feed on plants typical of the open sward, compared to those of woodland and scrub (16 species: 50%).

Discussion

The high number (32) of scarce or local species strengthens the case for the conservation of culm grassland together with associated woodland and scrub. However, just how important the habitat may be for moths compared to other habitats is uncertain, since no comparable studies appear to have been published.

C. Gibson (personal communication) found ten of the thirty-two scarce or local species to be common on culm grasslands near Chulmleigh (grid reference SS 686145) in 1969-70, and rarely on other habitats in that part of mid-Devon. These species were Devon Carpet, Ruddy Highflyer, Double Line, Wood Carpet, Barred Umber, Lunar Thorn, Brussels Lace, Striped Wainscot, Red Sword-grass and Small Rufous. He also found the nationally scarce (Grade B) Cloaked Carpet *Euphyia biangulata* frequently on culm grassland. I have myself recorded two of the above

ten species, Double Line and Brussels Lace, at Locks Park Farm (SS 518023) near Hatherleigh, which is 1 km away from the nearest culm grassland site, but not twenty-three of the thirty-two species despite frequent trapping over a number of years. In all, just fifteen local and one scarce species (out of 159), have been recorded at Locks Park Farm, adding weight to the suggestion that culm grassland supports an unusually large number of restricted species.

Table 2. Species with restricted or local distributions (Waring, 1994, 1999), together with details of their larval food plants (Skinner, 1998). Only those food plants which occur in or near culm grassland sites are included.

Species	**Larval food plant**
[**Status:** Nationally Scarce grade B: recorded from 31-100 of the 10 km grid squares in Britain since 1980]	
Narrow-bordered Bee Hawk-moth *Hemaris tityus*	Devil's-bit scabious *Succisa pratensis*
Devon Carpet *Lampropteryx otregiata*	Marsh bedstraw *Galium palustris* Fen bedstraw *G. uliginosum*
Double Line *Mythimna turca*	Grasses Wood rushes *Luzula* spp.
[**Status:** Nationally Local: known from 101-300 of the 10 km grid squares in Britain since 1980]	
Five-spot Burnet *Zygaena trifolii*	Bird's-foot trefoils *Lotus* spp.
Frosted Green *Polyploca ridens*	Oak *Quercus* spp.
Cream Wave *Scopula floslactata*	In captivity on dandelion *Taraxacum* agg., knotgrass *Polygonum* spp. and dock Rumex spp.
Oblique Carpet *Orthonama vittata*	Bedstraws *Galium* spp.
Wood Carpet *Epirrhoe rivata*	Bedstraws *Galium* spp.
Ruddy Highflyer *Hydriomena ruberata*	Eared willow *Salix aurita*
Ling Pug *Eupithecia goossensiata*	Heather *Calluna vulgaris*
White-spotted Pug *Eupithecia tripunctaria*	Wild angelica seeds *Angelica sylvestris* Elder *Sambucus nigra*
Golden-rod Pug*Eupithecia virgaureata*	Grey willow *Salix cinerea* (first brood) Ragwort *Senecio* spp. (second brood)

Species	Larval food plant
Sharp-angled Peacock *Macaria alternata*	Willows *Salix* spp. Blackthorn *Prunus spinosa* Alder *Alnus glutinosa*
Barred Umber *Plagodis pulveraria*	Willows *Salix* spp. Birch *Betula* spp. Hazel *Corylus avellana* Hawthorn *Crataegus monogyna*
Scorched Wing *Plagodis dolabraria*	Oak *Quercus* spp. Birch *Betula* spp. Willows *Salix* spp.
Lilac Beauty *Apeira syringaria*	Ash *Fraxinus excelsior* Honeysuckle *Lonicera periclymenum*
Lunar Thorn *Selenia lunularia*	Broad-leaved trees
Brussels Lace *Cleorodes lichenaria*	Lichens
Small Engrailed *Ectropis crepuscularia*	Broad-leaved trees
Great Prominent *Peridea anceps*	Oak *Quercus* spp.
Lunar Marbled Brown *Drymonia ruficornis*	Oak *Quercus* spp.
Black Arches *Lymantria monacha*	Oak *Quercus* spp.
Least Black Arches *Nola confusalis*	Broadleaved trees
Beautiful Brocade *Lacanobia contigua*	Polyphagous
Striped Wainscot *Mythimna pudorina*	Purple moor grass *Molinia caerulea* Other grasses
Old Lady *Mormo maura*	Broadleaved trees
Double Kidney *Ipimorpha retusa*	Willows *Salix* spp.
Rufous Minor *Oligia versicolor*	Probably grasses
Red Sword-grass *Xylena vetusta*	Polyphagous
Lesser Common Rustic *Mesapamea didyma*	Grasses
Small Rufous *Coenobia rufa*	Jointed rush *Juncus articulatus* Soft rush *J. effusus*
Pinion-streaked Snout *Schrankia costaestrigalis*	Unknown, possibly willow *Salix* spp.

It is likely that further sampling would have substantially increased the species list on the four sites studied. Conversely some of the moths caught will have been strays or migrants.

The preponderance of moths feeding as larvae on plants associated with scrub and woodland as opposed to those of the open sward argues strongly in favour of retaining and where appropriate encouraging scrub and woodland on culm grassland sites. Small woodlands and thick overgrown hedges which gradually grade from tall trees through to small shrubs before the open sward commences should be encouraged, particularly where willows are plentiful. The structural diversity of wooded areas is more likely to be important for the moth fauna than plant species diversity. Many moths, in particular rare ones, have precise spatial requirements in terms of habitat diversity and structure, and are not restricted by their food plants (M. Edgington, personal communication).

The majority of moths caught that feed preferentially on plants associated with scrub and woodland are not host plant specific, but use a variety of different plants, usually woody ones. Willows stand out as being of special value, being the preferred food plant for fourteen species, as does oak, the preferred food plant for four local species.

A greater proportion of scarce and local moths feed as larvae on plants typical of the open sward than of common species. Two of the three nationally-scarce moths recorded feed on plants typical of the open sward, Narrow-bordered Bee Hawk-moth feeding on devil's-bit scabious and Double Line on grasses and wood rushes. Another culm grassland speciality, the Marsh Fritillary butterfly *Euphydryas aurinia*, also feeds on devil's-bit scabious. Like the Marsh Fritillary, the hawk-moth and Double Line are considered priority species for conservation action within the UK Biodiversity Action Plan and have their own species action plans (UK Biodiversity Group, 1999). The ranges of both moths in Great Britain have declined severely in recent decades, contracting to western Britain, particularly to south-west England. The third nationally-scarce moth, the Devon Carpet, may or may not be dependent on the open sward. Its larvae feed on marsh bedstraw and fen bedstraw. This fluttering moth is usually encountered near patches of scrub (A. Spalding, personal communication) and has been found in alder carr (P. Waring, personal communication).

The double line was the fifth most numerous species caught (102 individuals). Although Skinner (1998) refers to the food plants of this moth as being various grasses such as cock's-foot *Dactylis glomerata*, wood meadow grass *Poa nemoralis* and wood rush *Luzula* spp., it seems likely that within culm grassland sites it feeds on some other grass, since none of the above are frequent in the habitat. Spalding (1989) has found the Double Line to be chiefly an open moorland species in Cornwall. The strong-flying, but elusive, Narrow-bordered Bee Hawk-moth is also a species of open sites: the author and others have seen it on several culm grasslands over the last decade.

The importance of the open sward for a number of scarce and local moths adds weight to the standard recommendation (Wolton, 1992) that sites should not be burnt

or cut in their entirety at once, but that preferably half of each field should be left unburned and uncut each year. This is likely to be particularly important for the Narrow-bordered Bee Hawk-moth, which may have similar habitat requirements to the Marsh Fritillary butterfly.

Table 3. Numbers of species recorded in the present study in relation to the known larval food plants listed by Skinner (1984)

Food plants	**Number of moth species recorded**
Grasses only	20
Bedstraws (*Galium* spp.) only	7
Heather (*Calluna vulgaris*) only	2
Other plants typical of the open sward of Culm grassland	8
Only plants typical of open Culm grassland	**37**
Herbs not typical of Culm grassland (mostly ruderal)	11
Bramble (*Rubus fruticosus*) or rose (*Rosa* spp.) only	4
Willow (*Salix* spp.) only	14
Birch (*Betula* spp.) only	5
Oak (*Quercus* spp.) only	7
Other broadleaved trees and shrubs, or such trees and shrubs generally	47
Lichens	2
Only plants typical of woodland and scrub	**90**
Polyphagous	53
Miscellaneous	13

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Figure 1. Double Line *Mythimna turca*
Picture: J. Breeds

Figure 2. Narrow-bordered Bee Hawk-moth
Hemaris tityus *Picture: P. L. Cook*

APPENDIX 1. Description of the four study sites

Dunsdon Farm (grid reference SS 295078, altitude 130 metres) is located close to the Cornwall border between Holsworthy and Bude. The site is now a National Nature Reserve. The area sampled comprises a 27 hectare block of culm grassland divided into 14 small fields and bisected by the long-disused Bude Canal. The land to the west of the canal is largely covered by well-grazed, wet heath (NVC community M16b), with much heather, cross-leaved heath *Erica tetralix,* western dwarf gorse and creeping willow *Salix repens,* growing with purple moor grass, bog mosses, short sedges (especially *Carex panicea)* and abundant devil's-bit scabious among other herbs. That to the east is largely dominated by purple moor grass tussocks (NVC community M25c), although tufted hair grass *Deschampsia caespitosa* and meadowsweet are locally dominant. Very thick, tall, overgrown hedges that might more accurately be described as linear oak woodlands are frequent throughout the site, and patches of willow numerous. A conifer plantation lies to one side. The Bude Canal is now choked with reed grass *Phalaris arundinacea* and other wetland plants.

Coombe Meadow (grid reference SS 496022, altitude 80 metres), lying four kilometres to the west of Hatherleigh, consists of a single 5 hectare field which is a fine example of species-rich fen meadow (NVC community M24c), characterised by abundant purple moor grass and short sedges (especially *Carex hostiana, C. pulicaris* and *C. flacca)* interspersed with herbs such as meadow thistle, devil's-bit scabious, saw-wort *Serratula tinctoria* and heath spotted orchid *Dactylorhiza maculata.* A small part of the field and an adjacent one are dominated by rushes, especially sharp-flowered rush *Juncus acutiflorus,* with greater bird's-foot trefoil *Lotus uliginosus* and marsh bedstraw *Galium palustre* (NVC community M23b). Thick overgrown hedges and a small wood surround the field, dominated by oak, birch, hazel, willow and aspen *Populus tremula.*

Hollow Moor (grid reference SS 470015, altitude 120 metres), one kilometre further to the west, is a very large (170 hectare) site stretching along a shallow valley. Its vegetation ranges from rush pasture (NVC community M23a) dominated by soft rush *Juncus effusus* and grasses such as bents *Agrostis* spp. and Yorkshire fog *Holcus lanatus,* through species-rich fen meadow (NVC community M24c) as described for Coombe Meadow, to tussocky purple moor grass with much marsh thistle *Cirsium palustre* and wild angelica *Angelica sylvestris* (NVC community M25c). The site is liberally scattered with birch and willow bushes, especially eared willow *Salix aurita,* and with bramble *Rubus fruticosus* clumps. The valley stream is lined by a broad strip of woodland with oak, ash *Fraxinus excelsior,* birch and alder *Alnus glutinosa.*

Southmoor Farm (grid reference SS 564003, altitude 125 metres) lies midway between Okehampton and Hatherleigh. At the time of the survey it was a diverse 29 hectare site divided into eight fields – regrettably it has since been severely damaged. Well represented here were wet heath (NVC community M16b), species-rich fen meadow (NVC community M24c) and meadowsweet tall herb fen (M27c), all of which are referred to above. Small patches of bracken *Pteridium aquilinum* occurred, and the fields were bordered by strips of oak woodland, with much birch, willow and alder.

APPENDIX 2. The number of each species of macrolepidoptera recorded at the four study sites during 1987 and 1988

Key:

Column 1: B&F. = species numbers according to Bradley & Fletcher (1979)

Columns 4 - 7: Where actual numbers are not presented, the following codes are used: P = present (usually refers to day-flying species).
N = no trapping during flight period.

Column 8: The status is taken from Waring (1994, 1999)

B&F	Common name	Scientific name	Dunsdon Farm	Coombe Meadow	Hollow Moor	Southmoor Farm	National Status
0017	Common Swift	*Hepialus lupulinus* (L.)	4	0	0	1	Common
0170	Five-spot Burnet	*Zygaena trifolii* (Esp.)	P	P	P	N	Local
1632	Pale Eggar	*Trichiura crataegi* (L.)	1	0	2	N	Common
1634	Lackey	*Malacosoma neustria* (L.)	7	5	33	N	Common
1637	Oak Eggar	*Lasiocampa quercus* (L.)	0	0	1	N	Common
1638	Fox Moth	*Macrothylacia rubi* (L.)	6	1	0	0	Common
1640	Drinker	*Euthrix potatoria* (L.)	10	11	54	N	Common
1645	Scalloped Hook-tip	*Falcaria lacertinaria*(L.)	0	4	2	0	Common
1646	Oak Hook-tip	*Watsonalla binaria* (Hufn.)	0	2	0	0	Common
1648	Pebble Hook-tip	*W. falcataria* (Fabr.)	0	3	0	0	Common
1652	Peach Blossom	*Thyatira batis* (L.)	3	0	2	1	Common
1653	Buff Arches	*Habrosyne pyritoides* (Hufn.)	4	1	6	N	Common
1657	Common Lutestring	*Ochropacha duplaris* (L.)	1	1	0	N	Common
1660	Frosted Green	*Polyploca ridens* (Fabr.)	3	0	2	1	Local
1663	March Moth	*Alsophila aescularia* (D.& S.)	1	N	0	2	Common
1666	Large Emerald	*Geometra papilionaria* (L.)	0	3	4	N	Common
1669	Common Emerald	*Hemithea aestivaria* (Hb.)	0	0	1	N	Common
1674	Little Emerald	*Jodis lactearia* (L.)	3	0	1	0	Common
1682	Blood-vein	*Timandra comae* (Schmidt)	2	0	0	0	Common
1693	Cream Wave	*Scopula floslactata* (Haw.)	1	0	0	0	Local
1702	Small Fan-footed Wave	*Idaea biselata* (Hufn.)	5	0	0	N	Common
1709	Single-dotted Wave	*I. dimidiata* (Hufn.)	0	0	3	N	Common
1713	Riband Wave	*I. aversata* (L.)	0	1	3	N	Common
1719	Oblique Carpet	*Orthonama vittata* (Borkh.)	0	4	18	4	Local
1727	Silver-ground Carpet	*Xanthorhoe montana* (D.& S.)	21	13	1	11	Common
1728	Garden Carpet	*X. fluctuata* (L.)	1	1	1	0	Common
1732	Shaded Broad-bar	*Scotopteryx chenopodiata* (L.)	2	30	4	N	Common
1733	Lead Belle	*S. mucronata* (Scop.)	P	1	0	0	Common
1738	Common Carpet	*Epirrhoe alternata* (Müll.)	1	0	4	0	Common
1739	Wood Carpet	*E. rivata* (Hb.)	1	0	0	N	Local
1742	Yellow Shell	*Camptogramma bilineata* (L.)	0	2	1	N	Common
1746	Shoulder Stripe	*Anticlea badiata* (D.& S.)	0	N	2	6	Common
1748	Beautiful Carpet	*Mesoleuca albicillata* (L.)	1	0	0	0	Common
1750	Water Carpet	*Lampropteryx suffumata* (D.& S.)	8	0	0	2	Common
1751	Devon Carpet	*L. otregiata* (Metcalfe)	0	1	0	0	Scarce (B)
1755	Chevron	*Eulithis testate* (L.)	0	0	10	N	Common
1758	Barred Straw	*E. pyraliata* (D.& S.)	4	0	5	N	Common
1759	Small Phoenix	*Ecliptopera silaceata* (D.& S.)	12	6	7	0	Common
1762	Dark Marbled Carpet	*Chloroclysta citrata (L.)*	2	0	0	N	Common
1764	Common Marbled Carpet	*C. truncata* (Hufn.)	2	7	12	0	Common

B&F	Common name	Scientific name	Dunsdon Farm	Coombe Meadow	Hollow Moor	Southmoor Farm	National Status
1765	Barred Yellow	*Cidaria fulvata* (Forster)	0	0	1	0	Common
1773	Broken-barred Carpet	*Electrophaes corylata* (Thunb.)	13	3	0	0	Common
1776	Green Carpet	*Colostygia pectinataria* (Knoch)	9	21	10	1	Common
1777	July Highflyer	*Hydriomena furcata* (Thunb.)	32	34	54	N	Common
1778	May Highflyer	*H. impluviata* (D.& S.)	0	1	0	0	Common
1779	Ruddy Highflyer	*H. ruberata* (Freyer)	9	2	6	0	Local
1817	Foxglove Pug	*Eupithecia pulchellata* Steph.	2	0	0	0	Common
1831	Ling Pug	*E. goossensiata* Mabille	1	0	0	0	Local
1834	Common Pug	*E. vulgata* (Haw.)	1	1	0	0	Common
1835	White-spotted Pug	*E. tripunctaria* H.- S.	1	0	0	0	Local
1851	Golden-rod Pug	*E. virgaureata* Doubleday	0	0	0	1	Local
1852	Brindled Pug	*E. abbreviata* Steph.	9	0	0	2	Common
1856	Larch Pug	*E. lariciata* (Freyer)	2	0	0	0	Common
1858	V-Pug	*Chloroclystis v-ata* (Haw.)	3	0	1	0	Common
1860	Green Pug	*C. rectangulata* (L.)	0	0	1	0	Common
1881	Early Tooth-striped	*Trichopteryx carpinata* (Borkh.)	18	N	3	0	Common
1884	Magpie Moth	*Abraxas grossulariata* (L.)	7	0	0	N	Common
1887	Clouded Border	*Lomaspilis marginata* (L.)	38	2	2	0	Common
1890	Sharp-angled Peacock	*Macaria alternata* (D.& S.)	7	2	1	1	Local
1893	Tawny-barred Angle	*M. liturata* (Cl.)	1	0	0	0	Common
1903	Barred Umber	*Plagodis pulveraria* (L.)	12	1	1	1	Local
1904	Scorched Wing	*P. dolabraria* (L.)	2	8	0	3	Local
1906	Brimstone Moth	*Opisthographis luteolata* (L.)	52	3	25	2	Common
1907	Bordered Beauty	*Epione repandaria* (Hufn.)	0	1	0	N	Common
1910	Lilac Beauty	*Apeira syringaria* (L.)	0	0	1	N	Local
1913	Canary-shouldered Thorn	*Ennomos alniaria* (L.)	0	7	3	N	Common
1915	September Thorn	*E. erosaria* (D.& S.)	0	0	5	N	Common
1917	Early Thorn	*Selenia dentaria* (Fabr.)	13	2	7	8	Common
1918	Lunar Thorn	*S. lunularia* (Hb.)	2	6	1	0	Local
1920	Scalloped Hazel	*Odontopera bidentata* (Cl.)	17	4	0	2	Common
1921	Scalloped Oak	*Crocallis elinguaria* (L.)	8	17	29	N	Common
1926	Pale Brindled Beauty	*Apocheima pilosaria* (D.& S.)	1	N	0	0	Common
1927	Brindled Beauty	*Lycia hirtaria* (Cl.)	2	N	6	19	Common
1930	Oak Beauty	*Biston strataria* (Hufn.)	4	N	0	0	Common
1931	Peppered Moth	*B. betularia* (L.)	9	13	2	7	Common
1935	Mottled Umber	*Erannis defoliaria* (Cl.)	1	0	0	N	Common
1941	Mottled Beauty	*Alcis repandata* (L.)	18	4	19	10	Common
1945	Brussels Lace	*Cleorodes lichenaria* (Hufn.)	0	6	1	3	Local
1948	Small Engrailed	*Ectropis crepuscularia* (D.& S.)	12	0	1	0	Local
1955	Common White Wave	*Cabera pusaria* (L.)	0	1	0	0	Common
1956	Common Wave	*C. exanthemata* (Scop.)	8	2	11	5	Common
1958	Clouded Silver	*Lamographa temerata* D.& S.	6	1	0	1	Common
1961	Light Emerald	*Campaea margaritata* (L.)	5	6	0	1	Common
1976	Privet Hawk-moth	*Sphinx ligustri* L.	2	0	0	0	Common
1980	Eyed Hawk-moth	*Smerinthus ocellata* (L.)	1	0	0	0	Common
1981	Poplar Hawk--moth	*Laothoe populi* (L.)	20	24	14	5	Common
1982	Narrow-bordered Bee Hawk-moth	*Hemaris tityus* (L.)	P	P	0	0	Scarce (B)
1991	Elephant Hawk-moth	*Deilephila elpenor* (L.)	1	0	1	0	Common
1994	Buff-tip	*Phalera bucephala* (L.)	2	0	6	0	Common
1995	Puss Moth	*Cerura vinula* (L.)	4	0	0	0	Common
1999	Lobster Moth	*Stauropus fagi* (L.)	0	4	3	0	Common
2000	Iron Prominent	*Notodonta dromedarius* (L.)	1	6	1	0	Common
2003	Pebble Prominent	*Notodonta ziczac* (L.)	34	2	2	3	Common

B&F	Common name	Scientific name	Dunsdon Farm	Coombe Meadow	Hollow Moor	Southmoor Farm	National Status
2005	Great Prominent	*Peridea anceps* (Goeze)	0	1	0	0	Local
2006	Lesser Swallow Prominent	*Pheosia gnoma* (Fabr.)	2	3	7	6	Common
2007	Swallow Prominent	*P. tremula* (Cl.)	0	1	1	0	Common
2008	Coxcomb Prominent	*Ptilodon capucina* (L.)	4	1	3	1	Common
2011	Pale Prominent	*Pterostoma palpina* (Cl.)	8	4	0	0	Common
2014	Marbled Brown	*Drymonia dodonaea* (D.& S.)	3	10	0	0	Common
2015	Lunar Marbled Brown	*D. ruficornis* (Hufn.)	1	0	1	3	Local
2028	Pale Tussock	*Calliteara pudibunda* (L.)	8	1	0	3	Common
2033	Black Arches	*Lymantria monacha* (L.)	0	6	0	N	Local
2050	Common Footman	*Eilema lurideola* (Zinck.)	2	4	7	N	Common
2057	Garden Tiger	*Arctia caja* (L.)	1	0	14	N	Common
2060	White Ermine	*Spilosoma lubricipeda* (L.)	30	43	3	5	Common
2061	Buff Ermine	*S. lutea* (Hufn.)	43	10	2	7	Common
2063	Muslin Moth	*Diaphora mendica* (Cl.)	2	4	0	3	Common
2064	Ruby Tiger	*Phragmatobia fuliginosa* (L.)	1	7	4	0	Common
2069	Cinnabar	*Tyria jacobaeae* (L.)	0	0	P	0	Common
2078	Least Black Arches	*Nola confusalis* (H.- S.)	6	0	0	0	Local
2089	Heart And Dart	*Agrotis exclamationis* (L.)	9	1	3	0	Common
2091	Dark Sword-Grass	*Agrotis ipsilon* (Hufn.)	1	1	5	0	Migrant
2102	Flame Shoulder	*Ochropleura plecta* (L.)	31	57	79	1	Common
2107	Large Yellow Underwing	*Noctua pronuba* L.	77+	33	111	1	Common
2109	Lesser Yellow Underwing	*N. comes* Hb.	32	4	18	N	Common
2111	Lesser Broad-bordered Yellow Underwing	*N. janthe* (Borkh.)	17	4	10	N	Common
2112	Least Yellow Underwing	*N. interjecta* Hb.	3	0	2	N	Common
2118	True Lover's Knot	*Lycophotia porphyrea* (D.& S.)	7	1	14	3	Common
2120	Ingrailed Clay	*Diarsia mendica* (Fabr.)	65	6	11	1	Common
2122	Purple Clay	*D. brunnea* (D.& S.)	5	0	0	N	Common
2123	Small Square-spot	*D. rubi* (Viewig)	8	42	111	0	Common
2126	Setaceous Hebrew Character	*Xestia c-nigrum* (L.)	0	0	3	0	Common
2129	Double Square-spot	*Xestia triangulum* (Hufn.)	3	0	0	0	Common
2130	Dotted Clay	*X. baja* (D.& S.)	15	6	27	N	Common
2133	Six-striped Rustic	*X. sexstrigata* (Haw.)	1	0	8	N	Common
2134	Square-spot Rustic	*X. xanthographa* (D.& S.)	0	15	20	N	Common
2138	Green Arches	*Anaplectoides prasina* (D.& S.)	11	0	1	N	Common
2139	Red Chestnut	*Cerastis rubricosa* (D.& S.)	16	N	12	7	Common
2150	Grey Arches	*Polia nebulosa* (Hufn.)	1	1	0	1	Common
2155	Dot Moth	*Melanchra persicariae* (L.)	1	0	0	N	Common
2156	Beautiful Brocade	*Lacanobia contigua* (D.& S.)	5	0	0	0	Local
2158	Pale-shouldered Brocade	*L. thalassina* (Hufn.)	7	4	1	1	Common
2160	Bright-line Brown-eye	*L. oleracea* (L.)	0	0	1	0	Common
2163	Broom Moth	*Melanchra pisi* (L.)	1	0	0	0	Common
2173	Lychnis	*Hadena bicruris* (Hufn.)	1	1	0	2	Common
2176	Antler Moth	*Cerapteryx graminis* (L.)	1	0	6	N	Common
2177	Hedge Rustic	*Tholera cespitis* (D.& S.)	0	1	12	N	Common
2178	Feathered Gothic	*T. decimalis* (Poda)	0	1	1	N	Common
2182	Small Quaker	*Orthosia cruda* (D.& S.)	4	N	14	27	Common
2186	Powdered Quaker	*O. gracilis* (D.& S.)	6	N	20	3	Common
2187	Common Quaker	*O. cerasi* (Fabr.)	10	N	18	50	Common
2188	Clouded Drab	*O. incerta* (Hufn.)	8	N	31	16	Common
2189	Twin-spotted Quaker	*O. munda* (D.& S.)	2	0	0	3	Common
2190	Hebrew Character	*O. gothica* (L.)	5	N	20	30	Common
2191	Double Line	*Mythimna turca* (L.)	23	19	59	1	Scarce (B)
2196	Striped Wainscot	*M. pudorina* (D.& S.)	26	14	2	1	Local

B&F	Common name	Scientific name	Dunsdon Farm	Coombe Meadow	Hollow Moor	Southmoor Farm	National Status
2198	Smoky Wainscot	*M. impura* (Hb.)	19	22	53	N	Common
2225	Minor Shoulder-knot	*Brachylomia viminalis* (Fabr.)	22	19	52	N	Common
2241	Red Sword-Grass	*Xylena vetusta* (Hb.)	0	0	2	2	Local
2243	Early Grey	*Xylocampa areola* (Esper)	2	0	3	17	Common
2248	Brindled Green	*Dryobotodes eremita* (Fabr.)	0	1	0	0	Common
2258	Chestnut	*Conistra vaccinii* (L.)	2	N	0	0	Common
2274	Sallow Moth	*Xanthia icteritia* (Hufn.)	0	2	5	N	Common
2278	Poplar Grey	*Acronicta megacephala* (D.& S.)	2	3	1	0	Common
2283	Dark Dagger	*A. tridens* (D.& S.)	0	0	1	0	Common
2289	Knot Grass	*A. rumicis* (L.)	0	3	0	0	Common
2297	Copper Underwing	*Amphipyra pyramidea* (L.)	0	5	5	N	Common
2299	Mouse Moth	*A. tragopoginis* (Cl.)	0	1	0	N	Common
2300	Old Lady	*Morma maura* (L.)	1	0	1	N	Local
2302	Brown Rustic	*Rusina ferruginea* (Esper)	42	0	0	0	Common
2305	Small Angle Shades	*Euplexia lucipara* (L.)	3	0	2	0	Common
2306	Angle Shades	*Phlogophora meticulosa* (L.)	2	1	8	0	Common
2311	Double Kidney	*Ipimorpha retusa* (L.)	0	2	0	N	Local
2318	Dun-bar	*Cosmia trapezina* (L.)	1	3	4	N	Common
2321	Dark Arches	*Apamea monoglypha* (Hufn.)	22	7	55	N	Common
2322	Light Arches	*A. lithoxylaea* (D.& S.)	1	0	0	N	Common
2326	Clouded-bordered Brindle	*A. crenata* (Hufn.)	7	1	1	0	Common
2330	Dusky Brocade	*A. remissa* (Hb.)	6	0	6	5	Common
2331	Small Clouded Brindle	*A unanimis* (Hb.)	0	1	0	0	Common
2338	Rufous Minor	*Oligia versicolor* (Borkh.)	3	0	4	N	Local
2340	Middle-barred Minor	*O. fasciuncula* (Haw.)	5	3	1	0	Common
2343	Common Rustic	*Mesapamea secalis* (L.)	5	5	13	N	Common
2343a	Lesser Common Rustic	*M. didyma* (Esper)	1	0	0	N	Local
2345	Small Dotted Buff	*Photedes minima* (Haw.)	21	0	2	N	Common
2350	Small Wainscot	*Photedes pygmina* (Haw.)	2	4	5	N	Common
2353	Flounced Rustic	*Luperina testacea* (D.& S.)	0	0	1	N	Common
2361	Rosy Rustic	*Hydaecia micacea* (Esper)	0	0	1	N	Common
2364	Frosted Orange	*Gortyna flavago* (D.& S.)	0	0	1	N	Common
2379	Small Rufous	*Coenobia rufa* (Haw.)	8	0	0	N	Local
2381	Uncertain	*Hoplodrina alsines* (Brahm)	1	0	0	N	Common
2422	Green Silver-lines	*Pseudoips prasinana* (L.)	0	0	0	1	Common
2425	Nut-tree Tussock	*Colocasia coryli* (L.)	9	3	0	4	Common
2434	Burnished Brass	*Diachrysia chrysitis* (L.)	6	0	26	0	Common
2439	Gold Spot	*Plusia festucae* (L.)	2	0	3	0	Common
2441	Silver Y	*Autographa gamma* (L.)	3	11	2	0	Common
2442	Beautiful Golden Y	*A. pulchrina* (Haw.)	18	11	7	0	Common
2450	Spectacle	*Abrostola tripartita*	2	0	0	0	Common
2463	Burnet Companion	*Euclidia glyphica* (L.)	2	P	P	0	Common
2469	Herald	*Scoliopteryx libatrix* (L.)	7	5	2	N	Common
2474	Straw Dot	*Rivula sericealis* (Scop.)	2	3	14	N	Common
2477	Snout	*Hypena proboscidalis* (L.)	3	0	0	N	Common
2484	Pinion-streaked Snout	*Schrankia costaestrigalis* (Steph.)	3	0	0	N	Local
2489	Fan-foot	*Zanclognatha tarsipennalis* (Tr.)	0	1	2	0	Common
Total number of individuals caught			**1243+**	**704**	**1341**	**308**	
Total number of species recorded			**145**	**121**	**122**	**55**	

***Hypomedon debilicornis* (Wollaston, 1857) (Col.: Staphylinidae) breeding in Surrey**

H. debilicornis was described by Wollaston (1857. *A catalogue of the coleopterous insects of Madeira*. British Museum. London.), under the name *Sunius debilicornis*, from a single specimen taken in Madeira by a Mr Bewicke and presented to him by the captor. Since then, the beetle has been found in many parts of the world in both the northern and southern hemispheres, including oceanic islands suggesting that it may have been distributed by commercial activities.

The first British specimens (recorded as *Chloecaris debilicornis*), were found in 1989 in farmyard debris at Helindon in Northamptonshire (grid reference SP 54) (Drane, 1994. A belated note on *Cloecharis debilicornis* (Wollaston) (Staphylinidae) new to Britain. *Coleopterist* **3**: 2-3.). Nothing more appears to have been seen of the species here until 1996, when it was encountered in decomposing farmyard straw at Heckfield, North Hampshire (SU 76) (Harrison, 1997. A second site for *Hypomedon debilicornis* (Wollaston) (Staphylinidae) in Britain. *Coleopterist* **6:** 66). At both sites specimens were numerous, indicating that the beetle had bred locally. In 1998, Booth (1999. Specimen exhibited at the Annual Exhibition. *Brit. J. Ent. nat. Hist.* **12**: 172), obtained a single specimen from a flight interception trap at Silwood Park, Berkshire (SU 97).

We can now report another breeding site situated near Little Bookham, Surrey (TQ 15). The beetles were first noted on 1 December 1999 and were in a large heap of floor sweepings from a nearby stable for horses. The heap was composed mostly of straw, but with a little well decomposed dung. Other specimens were found on a further visit by us to the site on 8 December and on later visits by other coleopterists. Among the other beetles present were numerous examples of *Euconnus duboisi* Méquignon and *Scydmaenus rufus* Müller & Kunze.

We have dissected 12 specimens from the heap at Little Bookham and all have proved to be females. This was also the case with specimens from Helindon and Heckfield and with 60 examples from many localities world-wide examined by Coiffait (1961. Les Hypomedon d'Europe et de la région mediterranéenne. *Rev. fr. Ent., Paris* **28:** 16-40). Later, however, a specimen from tropical Africa was found to be a male (Coiffait, 1984. *Nouv. Revue Ent.* **8:** suppl. 5 Coléoptères staphylinides de la région paléartique occidentale. 142-143). It seems reasonable to accept that when the species evolved many years ago it had sexual reproduction and that parthenogenesis arose later. How far parthenogenesis has been a factor in promoting the present-day cosmopolitan occurrence of this species is a matter for speculation. The ability of a virgin female on reaching a new area to reproduce without the involvement of a male might seem an advantage, but many equally cosmopolitan beetle species do not exhibit parthenogenesis. Conversely, many parthenogenetic beetle species are not cosmopolitan.– JOHN OWEN, 8 Kingsdown Road, Epsom, Surrey KT17 3PU. jaowen@talk21.com & A.J.W. ALLEN, 56 Windsor Way, Alderholt, Fordingbridge, Hampshire SP6 3BN.

TABLES SHOWING THE NUMBER OF MICROLEPIDOPTERA RECORDED FROM THE BRITISH ISLES, MAY 2000

A.M. EMMET

Labrey Cottage, 14 Victoria Gardens, Saffron Walden, Essex CB11 3AF.

I AM BASING this account on vice-county records, since that is how they are expressed in *Moths and Butterflies of Great Britain and Ireland* (Harley Books). Only vice-county totals are given. If any reader wishes for a breakdown by families, genera or species, his best course would be to pay me a visit and consult my distribution maps. If he seeks this information by correspondence, he cannot expect a prompt reply and will have to accept a list of Log Book numbers rather than specific names.

I have several reasons for writing this list. First, some readers may like to know how their county compares with its neighbours and speculate on the reasons for discrepancy. Secondly, I may receive additional records; some county recorders may find that their own list exceeds mine, since they hold hitherto unpublished records or ones that have appeared in local journals of which I am unaware. On the other hand, there may be others whose lists are shorter and who would wish to receive my additions.

Let no-one expect total accuracy in my figures. I have counted between 75,000 and 80,000 records and as in a political election, a recount might yield different totals. As well as distribution maps, I have a gridded chart with vice-county numbers in the vertical columns and specific names in the horizontal columns, records being shown by ticks in the appropriate intersecting squares. It is possible that a tick has occasionally been misplaced. I have reached my totals by adding these ticks by family and then adding the family totals. I first learnt mental arithmetic as a toddler on my father's knee, but now as a nonagenarian my accuracy may have diminished. However, I am confident that there are no major errors and that the picture presented is sound.

Various factors affect the fecundity of a vice-county. Obviously, latitude is of great importance and as one progresses northwards, numbers diminish quite rapidly. Secondly, the presence of a coast-line, especially if it includes salt-marsh, gives over a 5% boost. Geological variety is important; counties with cretaceous downland, heather heathland or fenland reap an advantage over those that are mainly on clay soil under cultivation. Good deciduous woodland is of high importance. Then there is the human factor. Records will not come without good recorders, and they must be field-workers as well as light-trappers. A mere light-trapper may record little more than 50% of the species in his area. Everybody needs help with identifications and if a county lacks an experienced microlepidopterist, someone who can make good genitalia preparations and a reference collection, perhaps at a local museum, records will be lost or, worse still, incorrectly claimed.

The best counties, as one would expect, are those along the south coast of England from Devon to Essex. Before I started counting, I wondered whether south Hampshire (VC11) or east Kent (VC15) would top the list and was surprised to find

the former an easy winner. I attribute this to its having more resident microlepidopterists who record all year round; the records in East Kent are made mainly by late summer and autumn visitors. For the same reason, West Kent (VC16) narrowly surpasses East Kent. Among the southern counties, North Devon (VC4) stands out as grossly under-recorded.

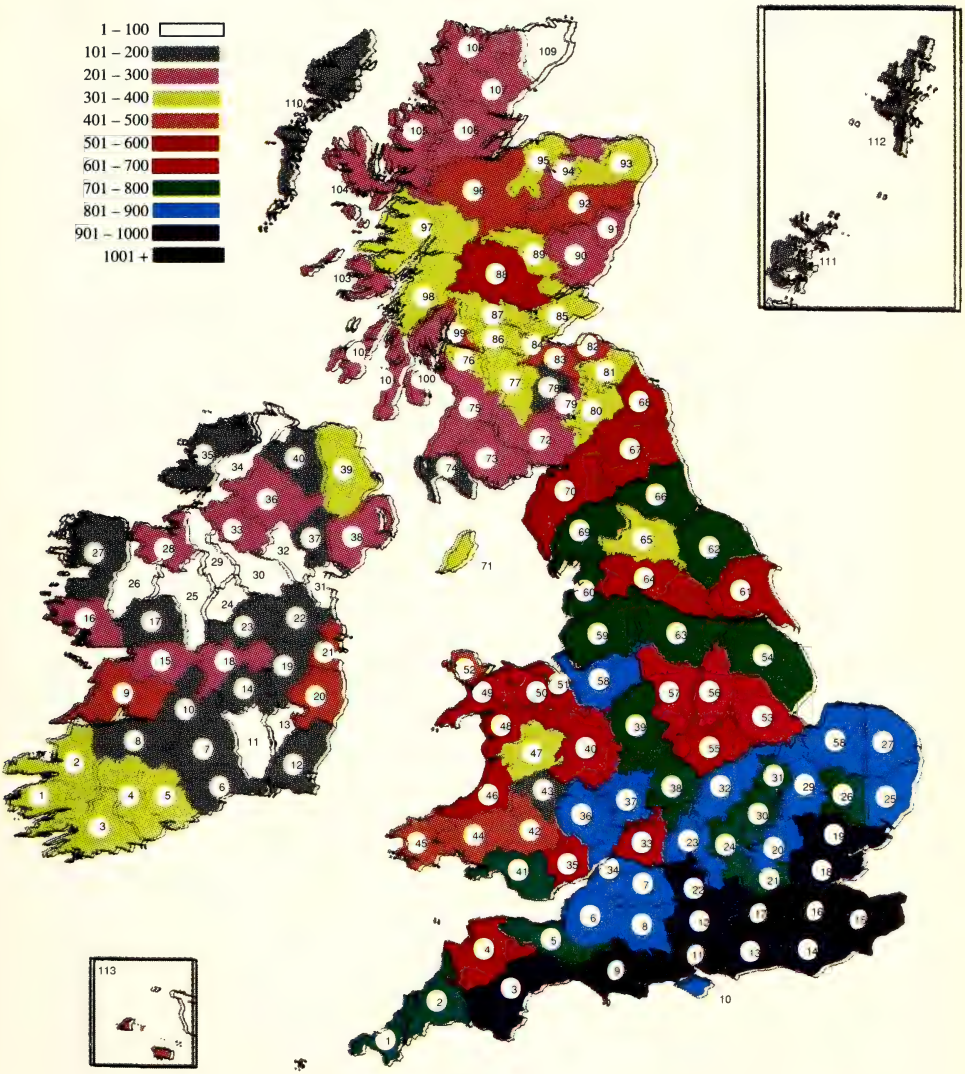
Northwards numbers diminish rapidly but rather erratically, depending on the factors mentioned above and entomological expertise, until one reaches the shores of the Irish Sea in North Wales, Cheshire (VC58) and Lancashire (VCs 59 & 60) where relative abundance is increased. By contrast, along the northern shores of the Irish Sea, from Cumberland (VC70) to Wigtownshire (VC74), microlepidoptera seem to be remarkably scarce. This may in part be due to under-recording, but I myself and other collectors have fared badly in these counties, indicating a genuine impoverished fauna. The lowest English vice-county is North-west Yorkshire (VC65), where records are particularly hard to achieve. I believe that with full coverage over the whole of England North-west Yorkshire would still remain bottom of the list.

Wales, apart from the northern coastal counties, is probably under-recorded. There are two counties that stand out for the paucity of their records. One is Montgomeryshire (VC47). The late H.N. Michaelis, who added so much to our knowledge of the Microlepidoptera of North Wales, said to me once that it was a wretched county and not worth visiting. I am sure he was right, but because it is so seldom visited, even its limited fauna is under-recorded. The other county, which is worse still, is Radnorshire (VC43). I am sure it is better populated than its present numbers show. Unfortunately, requests for records made of the County Recorder have met with no response, and several lists sent to him by me have not been acknowledged.

Scotland breaks the rules given above in that its most prolific county is Mid-Perthshire (VC88), the farthest from the sea. The reason for its pre-eminence may be human, since it harbours the Rannoch district, which has always been popular with collectors. Equally popular is east Inverness-shire (VC96), but it lags well behind, probably because it is situated further to the north. Aberdeenshire and its neighbours are high on the list because of the active recording conducted by the biological staff at Aberdeen University. The more northerly counties of Banffshire (VC94) and Moray (VC95) have recently attracted their attention and notable additions to their lists have ensued. Caithness (VC109) has the lowest score in Britain and it is indeed a barren county. As a result, it is rarely visited and its meagre assemblage of Microlepidoptera is largely unexplored. Yet entomological wildernesses sometimes produce highly localised rarities and time spent on a fuller survey of the county would not be ill-spent.

Recording in Ireland is patchy. Potentially the most prolific counties are those that border the Irish Sea, facing those from Anglesey to Lancashire, and, as one would expect, Cos. Wicklow (VCH20) and Dublin (VCH21) rank highly. However, they are surpassed by Co. Clare (VCH9) which is visited for its marvellous Burren terrain by virtually every lepidopterist in the British Isles. Coastal counties are reasonably

Map showing the number of Microlepidoptera recorded from each vice-county in the British Isles in May, 2000



well covered, but clearly there is more recording to be done in them. Most of the central counties are almost unknown, the number of recorded Microlepidoptera sinking to 47 in Longford (VCH24), where the highest scoring family is Nepticulidae, partly as a result of John Langmaid and myself driving through the county on 16 September 1995. In five other counties Nepticulidae are second behind Tortricidae, owing to casual road-side recording done by my wife and myself or John Langmaid and myself. The 317 new vice-county records made by John and me in our eight day Irish tour of 1995 were mostly leaf-miners and about half were Nepticulidae.

It is a sad fact that there are very few Scottish or Irish microlepidopterists, Ken Bond of Ireland being a notable exception. Almost all the recording in these countries has been made by Englishmen.

Some of the vice-county totals are very close and no doubt the order will be changed by the Microlepidoptera review for 2000.

Vice-county lists showing the number of Microlepidoptera recorded from each

1. England

1.	VC11	South Hampshire	1139	31.	VC5	South Somerset	790
2.	VC16	West Kent	1071	32.	VC2	East Cornwall	773
3.	VC15	East Kent	1069	33.	VC38	Warwickshire	755
4.	VC9	Dorset	1060		VC60	West Lancashire	
5.	VC17	Surrey	1040	35.	VC54	North Lincolnshire	752
6.	VC22	Berkshire	993	36.	VC26	West Suffolk	750
7.	VC13	West Sussex	986	37.	VC59	South Lancashire	745
8.	VC18	South Essex	978	38.	VC63	South-west Yorkshire	740
9.	VC19	North Essex	960	39.	VC21	Middlesex	737
10.	VC14	East Sussex	951		VC69	Westmorland	
11.	VC3	South Devon	948	41.	VC31	Huntingdonshire	723
12.	VC12	North Hampshire	944	42.	VC39	Staffordshire	713
13.	VC28	West Norfolk	883	43.	VC1	West Cornwall	711
14.	VC23	Oxfordshire	875	44.	VC66	Co. Durham	703
15.	VC10	Isle of Wight	868	45.	VC57	Derbyshire	696
16.	VC29	Cambridgeshire	863	46.	VC33	North Gloucestershire	653
17.	VC8	South Wiltshire	861		VC40	Shropshire	
18.	VC20	Hertfordshire	853	48.	VC56	Nottinghamshire	638
19.	VC36	Herefordshire	844	49.	VC53	South Lincolnshire	618
20.	VC25	East Suffolk	833	50.	VC64	Mid-west Yorkshire	588
21.	VC6	North Somerset	830	51.	VC55	Leicestershire	574
22.	VC37	Worcestershire	828	52.	VC4	North Devon	561
23.	VC27	East Norfolk	823	53.	VC61	South-east Yorkshire	557
24.	VC7	North Wiltshire	821	54.	VC67	South Northumberland	539
25.	VC32	Northamptonshire	818	55.	VC68	North Northumberland	530
26.	VC34	South Gloucestershire	811	56.	VC70	Cumberland	506
27.	VC58	Cheshire	810	57.	VC113	Channel Islands	443
28.	VC30	Bedfordshire	800	58.	VC71	Isle of Man	364
29.	VC62	North-east Yorkshire	796	59.	VC65	North-west Yorkshire	347
30.	VC24	Buckinghamshire	794				

2. Wales

1.	VC41	Glamorgan	735
2.	VC49	Caernarvonshire	677
3.	VC50	Denbyshire	660
4.	VC35	Monmouthshire	651
5.	VC51	Flintshire	548
6.	VC48	Merionethshire	539
7.	VC46	Cardiganshire	520
8.	VC42	Breconshire	472
9.	VC45	Pembrokeshire	446
	VC52	Anglesey	
11.	VC44	Carmarthenshire	424
12.	VC47	Montgomeryshire	309
13.	VC43	Radnorshire	198

3. Scotland

1.	VC88	Mid-Perthshire	531
2.	VC92	South Aberdeenshire	497
3.	VC83	Mid-Lothian	457
4.	VC96	East Inverness-shire	453
5.	VC99	Dunbartonshire	428
6.	VC82	East Lothian	418
7.	VC98	Argyll Main	389
8.	VC86	Stirling	370
	VC95	Moray	
10.	VC76	Renfrewshire	369
11.	VC93	North Aberdeenshire	363
12.	VC81	Berwickshire	361
13.	VC89	East Perthshire	358
14.	VC85	Fifeshire	331
	VC91	Kincardineshire	
16.	VC87	West Perthshire	329
17.	VC77	Lanarkshire	323
18.	VC80	Roxburghshire	318
19.	VC97	West Inverness-shire	302
20.	VC94	Banffshire	293
21.	VC84	West Lothian	283
22.	VC104	North Ebudes	268
23.	VC76	Ayrshire	263
24.	VC101	Kintyre	252
	VC105	West Ross	
26.	VC90	Angus	247
27.	VC106	East Ross	246
28.	VC73	Kirkcudbrightshire	237
	VC107	East Sutherland	
30.	VC103	Mid-Ebudes	225
31.	VC72	Dumfrieshire	223
32.	VC79	Selkirkshire	222
33.	VC100	Clyde Islands	218
34.	VC102	South Ebudes	217
35.	VC108	West Sutherland	212
36.	VC78	Peebleshire	197
37.	VC111	Orkney Islands	181
38.	VC74	Wigtownshire	178
39.	VC110	Outer Hebrides	164
40.	VC112	Shetland Islands	132
41.	VC107	Caithness	62

4. Ireland

1.	VCH9	Clare	465
2.	VCH21	Dublin	458
3.	VCH20	Wicklow	409
4.	VCH2	North Kerry	376
5.	VCH3	West Cork	349
6.	VCH4	Mid-Cork	336
7.	VCH39	Antrim	319
8.	VCH1	South Kerry	311
9.	VCH5	East Cork	306
10.	VCH16	West Galway	296
11.	VCH38	Down	272
12.	VCH15	South-east Galway	252
13.	VCH33	Fermanagh	248
14.	VCH28	Sligo	245
15.	VCH18	Offaly	209
16.	VCH6	Waterford	201
	VCH36	Tyrone	
18.	VCH37	Armagh	200
19.	VCH7	South Tipperary	198
20.	VCH12	Wexford	194
21.	VCH19	Kildare	175
22.	VCH27	West Mayo	155
23.	VCH14	Leix	144
24.	VCH8	Limerick	143
25.	VCH40	Londonderry	131
26.	VCH17	North-east Galway	124
27.	VCH22	Meath	121
28.	VCH35	West Donegal	114
29.	VCH10	North Tipperary	113
30.	VCH23	West Meath	108
31.	VCH30	Cavan	89
32.	VCH11	Kilkenny	82
	VCH26	East Mayo	
34.	VCH13	Carlow	81
35.	VCH31	Louth	80
36.	VCH25	Roscommon	78
37.	VCH29	Leitrim	77
	VCH34	East Donegal	
39.	VCH32	Monaghan	73
40.	VCH24	Longford	47

Most widespread micro-moth

In the May issue of this journal (*antea*: 114) Maitland Emmet asked if anyone could guess the identity of the only species of micro-moth that has been recorded from all 113 vice-counties of Great Britain and Ireland. The correct answer is *Celypha* (was *Olethreutes*) *lacunana* (D.& S.).

Observations regarding *Cydia illutana* (H.-S.) (Lep.: Tortricidae) in Essex

The first Essex example of this species was a female taken at light on 31 May 1997 at Markshall Estate, Coggeshall, and was subsequently kindly dissected and identified by Mr K. R. Tuck at The Natural History Museum, London. During 1999, I visited the site on a number of occasions to try and establish whether the moth was resident, searching principally the established stands of *Larix decidua*. On several trees I was able to see a number of candidate specimens flying among the uppermost branches, and rarely did they stray lower. With the help of a three-metre net handle and a precarious perch on a log pile I was able to secure just one of these, a male, on 28 May 1999. A mercury vapour lamp, positioned directly under the tree and only eight to 12 metres from where the moths had been flying, failed to attract any specimens. From this, it seems that males fly most strongly at dusk whereas females fly later at night when they are occasionally taken at light.

A full account of its occurrence in Britain, details supplied by A.M. Emmet (pers. comm.) is as follows:

The first specimen was taken by Dr J. Langmaid in his trap at Southsea, Hants (VC11) on 10 June 1975, but was at first misidentified until a second specimen was taken. Langmaid exhibited the first specimen (Langmaid, 1987. Exhibit – Annual Exhibition, 1986. *Proc.Trans. Br.Ent.Nat.Hist.Soc.* **20**: 53) and wrote a note (Langmaid, 1988. *Ent. Rec.* **100**: 162). The second specimen was taken by the late Mr B. Baker, also at light, at Unhill Wood, Berks (VC22) on 15 June 1984. He exhibited it tentatively as *C. illutana* (Baker, 1985. Exhibit – Annual Exhibition, 1984. *Proc. Trans. Br. Ent. Nat. Hist. Soc.* **18**: 1-22), and his identification was confirmed by Mr J. Bradley, who wrote a full description of the imago, its genitalia, life history, foodplants and continental distribution (Bradley, 1986. *Ent. Gaz.* **36**: 97-101). Larvae were found in cones of *Larix decidua* on 6 August 1989 at Tubney Wood (VC22, formerly Berks but now Oxon) by Mr M. F. V. Corlett *et al* (Baker, 1994. *The butterflies and moths of Berkshire*, p. 130). Then, an adult was taken at mercury vapour light at RAF Chilmark, Wilts (VC8) on 8 June 1993 (Palmer, 1995. *Ent. Gaz.* **46**: 277; Agassiz et al., 1996. *Ent. Rec.* **108**: 177-193), and now the two at Coggeshall, Essex (VC19).– Brian Goodey, 298 Ipswich Road, Colchester, Essex CO4 4ET (E-mail: aave45@dial.pipex.com).

***Diasema reticularis* L. (Lep.: Pyralidae) in Devon**

On 30 July 1999, a example of this species was captured at Bideford, North Devon by Dr Adrian Henderson. The identification was confirmed by myself, and it has since been exhibited at the AES Exhibition on 2 October 1999, the BENHS Exhibition on 27 November 1999 and the Devonshire Association AGM on 22 January 2000. The history of the species in Devon is a bit hazy. E. S. Norcombe said that he captured it (with no locality) around 1858 (*Entomologists Weekly Intelligencer* **4**: 157). J. J. Reading quotes "about two dozen" at Plymouth in June

and September (*Ent. Annual*: 1861: 101). J. Hellings (*Ent. mon. Mag.* **13**: 93) does not state the locality or date of his capture of this species, but although he lived at Exeter it is thought that he did not see it there. G. C. Bignell (1870) and E. Parfitt (1878) repeat the locations given, with Barrett (1904) saying "more than forty years ago it was found near Plymouth, and more recently in other parts of Devon". The species has been captured in other parts of Great Britain.– ROY MCCORMICK, 36 Paradise Road, Teignmouth, Devon TQ14 8NR.

Leptura fulva (Degeer) (Col.: Cerambycidae) in South Wiltshire.

Michael Darby has recently shown (1997. *Recording Wiltshire* No. 2: 10-11. Wiltshire Biological Records Centre) that *Leptura fulva* Degeer appears to be well established in Wiltshire (5 sites) despite Hyman and Parsons (1992. *A review of the scarce and threatened Coleoptera of Great Britain.* Part 1: UK Nature Conservation No. 3. JNCC) describing it as "very local and much declined" nationally and assigning it Red Data Book category 3 (rare) status. In his article, he observes that almost all recent Wiltshire specimens have been observed on downland sites away from suitable living/rotting timber and suggests that fence posts are the likely breeding site. My sole encounter with the species in the county was not on downland, but would support this hypothesis.

Between 27 July and 1 August 1991, I found several specimens on hogweed *Heracleum sphondylium* umbels beside a narrow bye-road flanked by arable fields at Milford near Salisbury (grid reference SU 159295). Although there were small scattered hawthorns *Crataegus* present, no sign of breeding in these was detected and the field boundary fence posts seemed the most likely breeding site.– DAVID R. NASH, 3 Church Lane, Brantham, Suffolk CO11 1PU.

Leptura melanura L. (Col.: Cerambycidae) in Middlesex

I found one example of this longhorn beetle in a field here in Sunbury on 21 May 1988 where it was resting on, or perhaps feeding from, a hogweed *Heracleum sphondylium* umbel. I was somewhat surprised to find it so close to the London suburbs and indeed, R. Uhthoff-Kaufmann in this journal (1998. **100**: 63 - 71), does not list it from Middlesex. Nor have I any other records from this vice-county.
– D.A. PRANCE, 8 The Ridings, Sunbury-on-Thames, Middlesex TW16 6NU.

EDITORIAL COMMENT: I was, initially, a little surprised on receiving this note, since I find the beetle (known previously as *Strangalia melanura*) occasionally on ruderal sites in eastern London, affecting the vice-counties of South Essex and West Kent in the vicinity of the River Thames (the "East Thames Corridor"). However, careful checking does indeed reveal that in spite of carrying out much field work in the eastern sector of London I do not have any records from this side of adjacent Middlesex. Hogweed umbels also feature in my own records from the East Thames Corridor, though most records are from yellow water-traps.

ALBINISM IN A MALE OF *COENONYMPHA LEANDER LEANDER* (ESPER, [1784]) (LEP.: NYMPHALIDAE: SATYRINAE)

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THE RUSSIAN Heath *Coenonympha leander* (Esper, [1784]) is well known as a polytypic species. The nominate subspecies is mentioned in connection with Bulgarian colonies (Abadjiev, 1993: 76). Stating the polytypism here it is necessary to reveal that this taxon exhibits a wide range of variations at an infrasubspecific level. They are in their great part individual. Many of the specimens collected during my regular visits to localities of the species in SW Bulgaria differ from each other in ocelli number, amount of the fulvous flush in the basal and discal part of the forewing, etc. It can be said that it is simply difficult to find two identical specimens, even in a same locality.

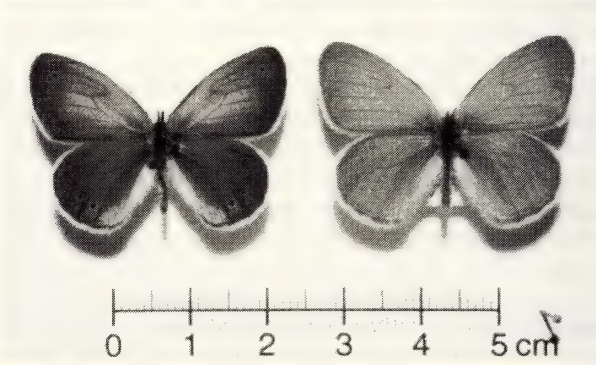

Figure 1. Males of *Coenonympha leander leander* (Esper, [1784]): (left) normally pigmented, Bulgaria: Osogovo Mts: Kyustendil: 22.V.1993: S. Abadjiev leg. et coll.; (right) albino, Bulgaria: Iskar Valley: Pancharevo Gorge: 28.V.1998: S. Abadjiev leg. et coll.

Within this great variability special attention requires an interesting aberrant male with strong tendency to albinism, here illustrated (Fig. 1 right). Compared with the more or less normally coloured specimens (Fig. 1 left) it is the sole specimen I have seen with such a strong reduction of the black pigment. This reduction is especially well pronounced on the upper side of the wings. Other colours are not affected.

Reference

Abadjiev, S., 1993. *Butterflies of Bulgaria, Part 2, Nymphalidae: Libytheinae & Satyrinae.* Veren Publishers, Sofia.

PHYTOMYZA HELLEBORI KALTENBACH (DIP.: AGROMYZIDAE), A RECENT ADDITION TO THE BRITISH FAUNA: FURTHER RECORDS IN EAST NORTHAMPTONSHIRE , HUNTINGDONSHIRE AND CAMBRIDGESHIRE

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ON 23 MARCH 2000 my wife Joan asked me what was causing the older leaves on practically every plant in a large clump of *Helleborus foetidus* in our rural garden at Hemington, east Northamptonshire (grid reference TL 091852), to shrivel and die. Closer examination showed the apparently dead, brown, areas of each leaf to be the result of a severe infestation of a species of leaf-miner. I am certain that I recall noticing similarly shrivelled leaves in previous years, but never in such numbers. The mines were restricted to last year's evergreen leaves on the lower parts of each plant, with very few individual leaflets (3-11 per leaf) appearing devoid of a single mine. The new season's growth was unaffected. I soon realised that the causal agent was most probably a dipterous leaf-miner in the family Agromyzidae. Reference to an ancient German work by Kaltenbach (1874) provided a possible answer. He described a new species, *Phytomyza hellbori* from material collected by Ernst Hofmann mining the leaves of *Helleborus niger* at Stuttgart during May. This species was not included in the latest Diptera Checklist (Chandler, 1998). Two days later at the AGM of the Huntingdonshire Fauna & Flora Society I described the leaf mines to the (vice) county recorders for Diptera – Jon Cole, and Lepidoptera – Barry Dickerson. Neither knew of any species which mined the leaves of *Helleborus* in this country.

On 26 March, I collected about a dozen mined leaves, close examination of which revealed there to frequently be more than one larval mine in each leaflet. These typically start at, or near, the midrib and while in some the mines remain separate, in others they cross over each other or fuse together (Figure1). Multiple occupancy could be determined by the presence of puparia with their spiracles protruding from either leaf surface. These leaves were stored in a plastic sandwich box indoors in my study and by 5 April 16 ♂♂ and 11♀♀ agromyzid flies had emerged together with five chalcidoid parasites. By the following day a further 14 ♂♂ and 5 ♀♀ agromyzids, and four more chalcids had emerged. About this time I received a photocopy of Spencer's (1976) description of *Phytomyza hellebori* Kalt. from Jon Cole, and dissection of the aedeagus of a reared male conformed to the figure (743) for that species. Believing that I or, strictly speaking, my wife had discovered an agromyzid new to Britain I promptly dispatched those specimens which had emerged on 5 April to the Natural History Museum, London. The next day's emergence was sent to Jon Cole.

As one would expect emergence to be advanced through bringing the mined leaves into a centrally heated house, several *H. foetidus* plants in the garden were tapped over a tray on 6 April to see what insects were present on them. Three female

agromyzids collected in this way appeared identical to those reared indoors from the leaf mines. Seventeen species of Coleoptera were also recorded, the majority of which were obviously casual strays, half of which were phytophagous species known to be associated with other host plants. Only the ladybird, *Coccinella septempunctata* L., and the two species of predatory Staphylinidae, *Tachyporus dispar* (Paykul) and *T. pallidus* Sharp, were probably feeding on the heavy infestation of *Macrosiphon hellebori* Theobald & Watson, an aphid which Ian Woiwod informs me is "holocyclic and monoecious on *Helleborus niger*, *H. viridis* L. and *H. foetidus*". Some small parasitic Hymenoptera were collected at the same time but released as there was no guarantee that they were in any way associated with the *Helleborus*, let alone its insect fauna. A further 4♂♂ and 7♀♀ agromyzids, together with three chalcids and five ichneumonoid parasites, had emerged by 11 April after which only the occasional single specimen of each species was seen in the plastic box containing the mined *Helleborus* leaves.

After examining the flies sent to him Jon Cole noted a number of discrepancies in colouration compared with that given by Spencer (1976) in his account of Scandinavian Agromyzidae. Spencer described the scutellum as "broadly yellow centrally, but black at sides", whereas Cole found 5♂♂ and 1♀ with the scutellum all black, 4♂♂ and 3♀♀ with centre to apex vaguely pale, and 5♂♂ and 1♀ with a distinct yellow stripe. Spencer gave the "humerus, notopleural area and upper half of mesopleuron, bright yellow". Cole found the notopleuron black in 2♂♂ and 2♀♀; patchily darkened in 10♂♂ and 3♀♀; and bright yellow in 2♂♂ and 2♀♀; with the mesopleuron yellow in the upper quarter only. Spencer gives "coxae and femora yellow". Cole found the front coxae variably pale in apical half only; mid and hind coxae nearly all black, and in 2♂♂ and 1♀ the femora were black with a yellow tip while the rest had variable dark streaks and patches, not noticeably paler than the brownish tibiae. To a non-dipterist like myself the pure white halteres appeared particularly distinctive.

Although it seemed likely that the Hymenoptera reared from the mined leaves would prove to be broad spectrum rather than specific parasites they were sent to my old friend and chalcid expert Dick Askew. He identified them as being two species of Eulophidae – 7♂♂ and 4♀ *Diglyphus minoeus* (Walker, 1838), which he comments are "known chiefly as an ectoparasitoid of larvae of *Napomyza*, *Phytomyza* (Agromyzidae), but occasionally reported from *Phyllonorycter* (Lepidoptera; Gracillariidae)". The second species, *Elachertus (Hyssopus) nigritulus* (Zetterstedt, 1838) was represented by a single female, of which Askew states – "well known to attack microlepidoptera (Tortricidae, Cosmopterygidae, etc.) but I have no other report from Diptera". He was also able to identify the 3♂♂ and 2♀♀ ichneumonids as *Colastes braconius* Halliday, 1833 (Brachonidae). He comments that this species "is usually a parasitoid of Lepidoptera, especially Gracillariidae, and I cannot recall any records from Agromyzidae". In more recent correspondence Mark Shaw informs me that although *C. braconius* "is a very regular parasitoid of some species of "*Phyllonorycter* it is probably even better known as a parasitoid of Agromyzidae (particularly agricultural pests)". In his experience "it is a generalist on

leaf-mines, on both trees and low plants, of Lepidoptera, Diptera, Coleoptera (e.g. *Rhynchaeus fagi* [L.]), but only rarely Hymenoptera". Of the *Elachertus* record Askew remarks that "all other species (of this genus) seem to be primary or secondary parasitoids of Lepidoptera", and that my "record from *Phytomyza* must be questionable unless you have irrefutable evidence that this was indeed the host". In order to double check for any other possible host, each of the twelve leaves which had remained sealed in a plastic box, was thoroughly examined leaflet by leaflet. The only pupae and skins from parasitised larvae found in the *P. hellebori* mines were all dipterous. No indication of anything lepidopterous could be found and, on this evidence, one can only assume that the parasites all had *P. hellebori* as their host.

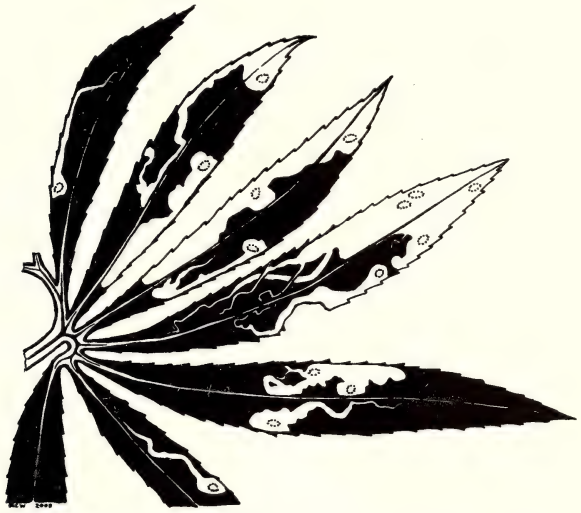

Fig. 1. Leaf of *Helleborus foetidus* L. showing mines of *Phytomyza hellebori* Kaltenbach (Dip.: Agromyzidae). Dotted ovals indicate the positions of puparia.

Whilst awaiting Askew's parasite determinations I met David Henshaw at an entomological fair in Kettering on 16 April only to be told that Alan Stubbs had pre-empted me by three months in recording *P. hellebori* mining *Helleborus foetidus* in his Peterborough garden, approximately 17.5 km north-east of Hemington. I immediately telephoned him to learn that he had also found it mining *H. foetidus* in a presumed natural population in Bedford Purlieus National Nature Reserve, some 17 kilometres north by north-west of Hemington (see Gent & Wilson, 1995). He had already submitted an account bringing *Phytomyza hellebori* forward as a species new to Britain (Stubbs, 2000) which included additional records by Andrew Halstead from the Royal Horticultural Society's gardens at Wisley, Surrey, and from a garden at Royston, Hertfordshire. A search in Hemington revealed the presence of mined *H. foetidus* in the gardens of two of my immediate neighbours and in the churchyard (TQ 091849).

Inquiry of Terry Wells, botanical recorder for Vice County 31, Huntingdonshire, indicated that *H. foetidus* had been recorded from two sites in the southwest of the county, at West Wood, Ellington and Stow Longa churchyard. I

visited both sites on 18 April but found no plants at either site. On the same day I visited the house at Wyton (TL 271725) from which we had obtained our original stock of *H. foetidus* over 25 years ago. The present owners, Mr & Mrs Hepworth, showed me the few plants still present in their garden, all of which were mined. That same day former colleagues Jane Croft and Mark Telfer searched plants in their Huntingdonshire gardens and reported *H. foetidus* mined at Stow Longa (TL 107769) and St. Ives (TL 306727) respectively. Later, on 24 April Sheila Wells confirmed the presence of mines in the same host at Upwood (TL 256824). More recently Peter Wood has informed me of a further infestation on *Helleborus foetidus* in his Cambridge garden (TL 450595).

Clearly *Phytomyza hellebori* has already been shown to be widely distributed in East Northamptonshire and the Soke of Peterborough (VC 32), Huntingdonshire (VC 31) and Cambridgeshire (VC 29) and David Henshaw has informed me that he has more recent records from mid-Essex. Other entomologists who saw Alan Stubbs' exhibit at the British Entomological & Natural History Society's meeting on 11th January will doubtless, by now, have discovered its presence elsewhere in the southern counties of England. At present *P. hellebori* has only been found mining *H. foetidus* in England. Alan Stubbs, Jon Cole and I all have other species of *Helleborus* growing in our gardens, and Andrew Halstead examined other species at Wisley, but none showed any signs of leaf mining.

Acknowledgements

I am grateful to Jon Cole for confirming my original determination and providing a copy of Spencer's description of *P. hellebori*; to Alan Stubbs and Peter Chandler for providing me with a pre-publication copy of Alan's paper in *Dipterist's Digest*; to Dick Askew for identifying the parasitic Hymenoptera reared from the leaf mines; to Andrew Halstead and Mark Shaw for information regarding these parasites; to Terry & Sheila Wells, Jane Croft, Mark Telfer and Mr & Mrs Hepworth for providing records from their gardens.

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Hazards of butterfly collecting – Chasing *Papilio parsimon*, London 1999

Hazards of butterfly collecting is not just a matter of what happens in the field, but also what happens in the library and the museum, and sometimes leads to unexpected results.

Papilio parsimon was described from Sierra Leone by Fabricius as long ago as 1775; he was a fellow Dane. It is an unremarkable brown member of the Lycaenidae, now placed in the genus *Lepidochrysops*, a genus that has some hundred species. *L. parsimon* was the first member of the genus to be described and till 1923, when Bethune-Baker revised it, the name was applied to males and females of several different species, some blue, some brown, some tailed, and some un-tailed. This despite the fact that the description could only apply to one of the un-tailed, brown species of *Lepidochrysops*.

The confusion was compounded by the fact that in the Banks' collection, kept at the Natural History Museum, London, there is an un-tailed blue female marked *parsimon TYPE*, that was never mentioned anywhere by Fabricius (each time I look at material in the Banks' collection I feel a real thrill at looking at a butterfly that was caught more than 200 years ago). However, Bethune-Baker correctly pointed out that the original description clearly specified that it was a brown, un-tailed butterfly and that the Banks' specimen could not be the true type. Fabricius' type specimen was generally believed to be lost. So Bethune-Baker figured what he thought matched Fabricius' description, a brown male from Kenya.

However, there was a problem with this, because Fabricius described the species from 'Sierra Leon", and nothing like the species considered to be *L. parsimon* by Bethune-Baker has ever been collected in West Africa. One simple way of resolving this kind of issue would be to declare Sierra Leone *patria falsa* and redesignate Kenya as type locality. While considering this option, I found that Bethune-Baker's *L. parsimon* only occurred in Kenya, Tanzania, Uganda, and eastern Zaïre, which made such an action impossible, for the simple reason that in 1775 no-one had ever swung a butterfly net within the range of this butterfly. Since the species is quite common, it seemed impossible to maintain the polite fiction that it was caught once only in Sierra Leone before 1775 and then nowhere between Sierra Leone and Kivu in eastern Zaïre.

Three brown *Lepidochrysops* are currently known from West Africa; though none has been found in Sierra Leone, any of the three might well occur there. *Lepidochrysops victoriae* Karsch, 1895 and *L. nigeriae* Stempffer, 1957 are known species, while Haydon Warren-Gash obtained an undescribed species from Guinea in 1999. In order to minimize confusion, I resolved to redescribe the Kenyan species as *L. parsimon* Larsen (not Fabricius) since it has been used consistently for a hundred years or so. I would then name the Guinea species *L. fabricii* in honour of Fabricius and apply to the International Commission for Zoological literature to rule that *Papilio parsimon* Fabricius should be considered a *nomen dubium*.

But the best laid plans of mice and men .... to be on the safe side I checked the book on the Fabrician butterflies written by Ella Zimsen; what was written about *Papilio parsimon*? "Type in Banks' collection (one in Copenhagen)". I happened to

be in Copenhagen and rushed to the Museum. Niels-Peder Kristensen had already located the specimen, which was a brown *Lepidochrysops* labeled *Parsimon* in Fabricius' handwriting. It was clearly the type that had for so long been considered lost.

What happened was that Fabricius usually kept a single syntype of each species, and when he heard that there also was one in the Banks' collection, he kept the only specimen that he ever actually saw. This was in a part of his collection that was kept in Kiel, Germany and which was placed in storage after his death until Ella Zimsen gained access to it in 1950 and arranged for it to come to the Zoological Museum, University of Copenhagen on permanent loan. She also had the collection immaculately curated.

The type, almost certainly a female, is clearly that which Stempffer described as *L. nigeriae* in 1957; I could immediately compare it with the Museum's series from Lagos that I collected 30 years ago. So what began as a quest to conserve the name *parsimon*, as it is currently understood, turned into an abject failure; there is no way in which Fabricius' type can be ignored. *L. parsimon* is a senior synonym of *L. nigeriae*; it cannot be used for the East African species, for which the most senior name is *L. loveni* Aurivillius, 1921.

Fortunately, I located the type before my original plan was carried out, but it is of such stumbling detective work that the occasional changes in nomenclature arise. Such name changes will be fewer under the revised Code of Zoological Nomenclature that becomes effective in 2000 and permits sleeping dogs to lie. A name that has not been used for 100 years should not be resurrected to replace a well-known and a well-used name; a formal ruling will not be necessary for its suppression. However, *Papilio parsimon* does not fall in that category. So the changes will have to be made: *L. parsimon* and *L. loveni* for East Africa.– TORBEN B. LARSEN, 5 Wilson Compound, 2811 Park Avenue, Pasay City, Metro-Manila, The Philippines.

Hazards of moth collecting: taking the hiss in Hampshire

Naturally, it is not in any way my intention to plagiarise the long-running series of articles by Torben Larsen – but then some opportunities are too good to miss, especially at a time when I am seriously short on copy for these pages!

Three continuous days and nights in a camper van at Oxenbourne Down, Hampshire, during June 2000, where I was undertaking a ecological study of the Biodiversity Action Plan hoverfly *Doros profuges* (Harris) for English Nature, gave me ample opportunity for a rather leisurely moth-trapping session or two; evening entertainment for me and extra records for the country park people. One evening, feeling adventurous, I ran the cable all the way down the steep slope of the down from the trees at the top where the van was parked, and set a Skinner trap on a 45 degree slope amongst chalk grassland and very short scrub. By 1am, very little had been attracted in the way of moths, and I decided to top up the generators and get some sleep (cissy, yes, but I had been up since 4am). I arose three hours later to a

heavy mist and light drizzle. A quick inspection of the trap revealed nothing new so I decided to sleep again and pack up the traps later – well, the hoverfly only comes out in sunshine so why should I be any different.

I awoke again at 9am to glorious sunshine. Having already checked the moths five hours earlier, I had a leisurely coffee and then wandered down to gather in the traps, not really expecting any surprises. Nevertheless, the sound of Paul Waring's famous advice ringing in my ears made me check *under* the sheet in case I had missed anything. No – nothing there. The trap was duly packed up into the carrying bag and off I went slowly, but surely, up the steep chalk slope to the van. Halfway up I became aware of a rustling in the bag. I thought nothing off it. I reached the top of the slope and the rustling continued. It was large – probably that Poplar Hawk-moth still on the egg trays, I thought. The bag was duly opened and a hand inserted. The egg trays came out – nothing. Then the sheet. Ah ha! Inside the sheet. The sheet was duly shaken and at my feet dropped the offending wriggler – a 12-inch long adder *Vipera berus*! It is debatable who moved the fastest – adder to stage left or entomologist to stage right!

So, Paul, if you are reading this, you might like to modify your famous (and quite correct) advice to beginners. Check under the sheet *and* check inside the carrying bags too.– COLIN W. PLANT, 14 West Road, Bishops Stortford, Hertfordshire CM23 3QP.

Aryresthia cupressella Wals. and *A. trifasciata* Stdgr. (Lep.: Yponomeutidae) in Essex

Adults of both of these species were found to be common in my Colchester garden on 26 May 1999 whilst I was removing a large specimen of the conifer *Chamaecyparis lawsoniana* "Minima Aurea". Cocoons containing pupae were gathered and adults of *A. cupressella* emerged a few days later. Other ornamental conifers in the immediate area include various *Juniperis*, *Thuja* and *Cupressocyparis*, but no signs of *Argyresthia* feeding were found on those checked. Both moths species showed reluctance at flying during the day, but at night were strongly attracted to mercury vapour light.

On 10 June 1999, Dr C. Gibson reported *A. cupressella* adults at his Dovercourt garden. For *A. cupressella,* this and the Colchester record represents small, but significant, easterly and southerly range extension from the area of Suffolk and North Essex where it was first discovered in Britain in 1997 (Agassiz and Tuck, 1999. *Ent. Gazette* **50:** 11-16) and, although the activities of its larvae do not cause host trees to become obviously unsightly, it seems destined to become something of a garden pest.

For *A. trifasciata,* first recorded in Britain by R. A. Softly at Hampstead, London in 1982 (Emmet, 1982 *Ent. Rec.* **94**: 180-182) and since in a number of localities, this is a new county record.– BRIAN GOODEY, 298 Ipswich Road, Colchester, Essex CO4 4ET.

An observation on *Acherontia atropos* L.

On the Hermigua road west of San Sebastian, La Gomera, Canary Islands, we encountered large numbers of larvae of *A. atropos* feeding on *Nicotiana glauca* growing by the roadside. They ranged in size from fully fed larvae, wandering off to pupate, down to newly emerged ones – a few unhatched ova were also seen. At least 90% of the larvae had been oviposited upon by a parasitic fly of the family Tachinidae; many of the fly larvae had emerged and entered the host leaving a brown scar at the point of entry. Some *A. atropos* larvae had many white ova adhering to their skins (20-30 in some cases on the bigger larvae).– D. HALL, 5 Curborough Road, Lichfield, Staffordshire WS13 7NG and P.J.C. RUSSELL, Oakmeadow, Wessex Avenue, East Wittering, West Sussex PO20 8NP.

***Eublemma ostrina* (Hb.) (Lep.: Noctuidae) in North Hampshire**

A perfect female *Eublemma ostrina* flew to m.v. light here on 1 November 1999. I took several photographs of the specimen, which exhibited the habit of raising its wings just above "shoulder-height" and resettling them immediately. It is not clear whether this was a direct immigrant or whether it had bred locally from an influx earlier in the year but, whichever was the case, it seems that 1 November is the latest UK date on record. There had been only two previous occurrences noted in VC12: 1957 (Micheldever) and 1969 (Martyr Worthy – two). I am grateful to Barry Goater for travelling over promptly and confirming the identification.– ALASDAIR ASTON, Wake's Cottage, Selborne, Hampshire GU34 3JH.

Millennium butterflies

In reply to Roger Bristow's note (*antea*: 130), I saw my first butterfly of the Millennium at about 11am on 1 January. I was waiting to take part in an orienteering competition at Bulford Down, Wiltshire and a Brimstone *Gonepteryx rhamni* flew past. When I finished competing, at about midday, a Peacock *Inachis io* flew over.– SARAH PATTON, Eastern Cottage, 2 Watery Lane, Kingsham, Chichester, West Sussex PO19 2XH (E-mail: squirrel@care4free.net).

Lilac Beauty *Apeira syringaria* (L.) (Lep.: Geometridae): a second generation specimen at Charlecote, Warwick

The interesting note by B.K. West (*antea*: 83) on second generation *Apeira syringaria* prompted me to report the capture of an under-sized specimen in my garden mv light trap on 12 September 1999.

This was followed by two more unexpected guests – a Comma butterfly *Polygonia c-album* (L.) on 20 September and a Migrant Hawker dragonfly *Aeshna mixta* (Latr.) on 22 September, both resting comfortably in the egg cartons.– DAVID BROWN, Jacksons Lawn, Charlecote, Warwick CV35 9EW.

NOTES ON THE BEHAVIOUR OF *ADELA CUPRELLA* ([D. & S.]) (LEP.: INCUVARIIDAE).

IAN SIMS

2 The Delph, Lower Earley, Reading, Berkshire RG6 3AN.

THE LONG-HORN moth *Adela cuprella* is a species I had been looking for off and on for five or six years. During this period I visited Cothill Fen and Burnwood Forest in Oxfordshire, a large area of sallows I know at Twyford in Berkshire and Burnham Beeches (VC24) in Berkshire (some of these several times over the years) to look for *cuprella* in season. On 29 March 1998 I found it by chance at MV in Ashley Hill Forest, Berkshire, and a couple of days later saw what I believed were others in flight by day around the tops of sallow bushes at the same locality. In an attempt to confirm this sighting I returned to these woods on 14 March 1999 to search for it again. On this occasion none were seen and I surmised that this visit was a little early in the year. Subsequent to this, on 27 March 1999, again by chance I discovered three males of this species in flight around sallows growing beside the road near Sindlesham Mill at Lower Earley near Reading in Berkshire. The weather was sunny and hot for the season, with a light westerly breeze. The moths were seen between 11.00 and 12.30 hrs.

Having observed adults at Lower Earley earlier in the day I went to Ashley Hill Forest that afternoon and saw several adelids, all males, in flight around high sallows. On this occasion, by virtue of a net attached to the end of a roach pole (Figure 1), I was able to confirm that these were indeed *A. cuprella*. Moths were observed on the wing between 14.30 and 16.00 hrs.

Encouraged by these records and spurred on by comments from Brian Baker who I had informed of these sightings, on 28 March I again looked for *cuprella* around the sallows near Sindlesham Mill. The weather was less than ideal, there being a stiff breeze blowing, and I failed to find it here on this occasion despite working the area from 10.00 to 13.30 hrs. That afternoon I decided to visit Dinton Pastures Country Park at Winnersh (about two miles from Sindlesham Mill) to search for it in a spot I remember thinking looked a promising *cuprella* site a couple of years earlier. The conditions were still less than ideal as the breeze had strengthened. However, during a calm spell around 15.00 hrs. a male was seen to take flight from the high flowering branches, fly for 30 seconds or so and then settle on the flowers as soon as the wind strengthened again. Several males (at least three and perhaps more) were seen in the same area here the next day during a brief visit between 14.30 and 15.00 hrs.

On 2 April 1999 I revisited the sallows at Sindlesham Mill where I had seen males in late March. This time the weather was sunny, hot and calm. I searched these and other sallows nearby that I had not examined before, between 09.30 and 14.00 hrs. Here a further two males were noted, the first at 11.10 hrs., together with three females. These females, the first I have seen, were all observed between 13.00 and 14.00 hrs. A further visit to this site on 9 April between 11.00 and 14.00 hrs., again during ideal weather conditions, failed to turn up the adults I had seen earlier that week, or any others.

These observations suggest that *A. cuprella* flies mostly in calm weather conditions and requires bright sunshine in order to do so. As soon as even a light cloud shrouded the sun all flight activity stopped, to be resumed again almost the instant bright sunshine was restored. No flight was observed on sunny hot days with a strong wind. The earliest time that I observed adults in flight was 11.00 hrs., so *cuprella* does not appear to be an early riser. Perhaps warming of the air to a critical point is required before it will take to the wing. Males appear to take flight first, with the females flying an hour or two later (although the numbers of observations concerning this aspect of their biology are somewhat limited). All flight activity was observed to have ceased by 16.00 hrs. Also it appears that their flight season is short,

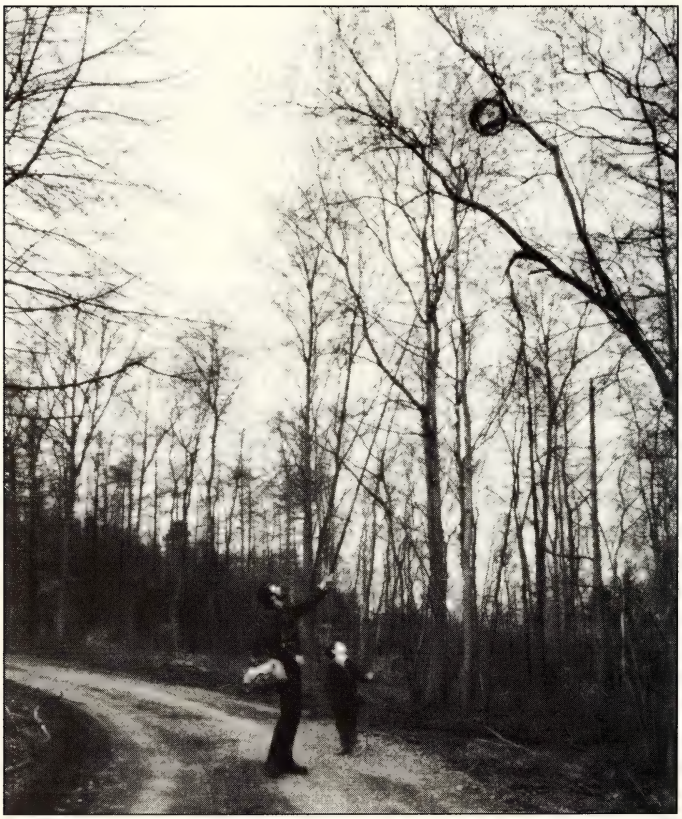

Figure 1. A "pole net" in use at Ashley Hill Forest.

Photograph courtesy of P. Verdon

as at Sindlesham moths were seen over a seven day period, from 27 March to 2 April. Of course, they may have been on the wing a few days earlier and/or later than this, but by 9 April cuprella's season was over at this site. No further examples were seen here, or elsewhere, this Spring despite visiting the *cuprella* sites at Dinton Pastures and Ashley Hill Forest on 10 April and Sindlesham Mill the following day.

In volume 1 of *MBGBI* (1976) John Heath and Ted Pelham-Clinton (both of whom I can assure readers I have the utmost respect for) state that *cuprella* is notorious for being common one year and apparently absent in following seasons. However, in this work no mention is made of its ability to pass up to three winters in the larval state (Emmet, Life-cycle table, *MBGBI* **7(2)**, p 76, 1991). As the adult requires sunny, warm and calm weather conditions during a limited period of the day and at a time of year when, generally speaking, the weather is seldom ideal, opportunities for recorders to note its' presence at a site are probably very limited. This being the case it appears that *A. cuprella* is not an easy species to record, especially when one considers its' small size and altitude of flight. Similarly, the moths opportunities for mate location, pairing and oviposition are probably also limited by the weather conditions during the adults flight period. This, coupled with variations in predation pressure from season to season and its' ability to survive for up to three years in the larval stage mean that *A. cuprella* has evolved a strategy for surviving unfavourable seasons. Hence, the years of abundance followed by seasons of extreme scarcity, which this species is notorious for, are not surprising.

Variation in abundance from season to season is a feature of the population dynamics of many insects but is particularly pronounced with this species. It would be interesting, though I suspect quite difficult, to investigate what environmental cues are involved in protraction of the larval stage.

Tawny Pinion *Lithophane semibrunnea* Haw. (Lep.: Noctuidae) in north Yorkshire

On the morning of 3 May 2000, I recorded a single *Lithophane semibrunnea* in the immediate vicinity of my m.v. light at Eddlethorpe near Malton in north Yorkshire (technically in Watsonian vice county 61, East Yorkshire). Heath and Emmet (1983. *The Moths and Butterflies of Great Britain and Ireland*, Vol.10), have this species occurring no further north than South Lincolnshire in the east, and Blackpool in the west. The trap site is Manor Farm, an all-arable enterprise on which UAP, an agricultural chemical merchant, is undertaking numerous initiatives to increase biodiversity. There are mature hedgerows and a fragment of ancient woodland containing this moth's foodplant, ash *Fraxinus excelsior,* in the immediate vicinity of the trap site.– W. R. Meek, Centre for Ecology and Hydrology, Monks Wood, Huntingdon, Cambs PE28 2LS.

***Clitostethus arcuatus* (Rossi) (Col.: Coccinellidae) in central London**

To the new vice-county records for the Endangered (*Red Data Book* category 1) ladybird *Clitostethus arcuatus* given by Colin Welch and Martin Jukes during 1999 (*Ent. Rec.* **111**: 133-134), can now be added another in the form of Middlesex. A single specimen was recently identified by me from a mass of small beetles which Colin Plant had sorted from the malaise trap in the garden of Buckingham Palace; the single specimen was in the sample collected in the period from 27 July to 3 August 1996. The species is allegedly associated with ivy *Hedera helix* and it is of interest that a small patch of ivy carpets a small area of ground adjacent to the trap, on the slope of a wooded mound. The plant is also present on several trees throughout the garden and also grows at various points on the perimeter wall.

That this rare beetle should be present in the very centre of London seems surprising, though it is by no means the only surprise that Buckingham Palace Garden has to offer. The survey of the garden was carried out between 1995 and 1997 by the London Natural History Society, with gracious permission of Her Majesty the Queen. A full list of beetles recorded at this site, together with a discussion, will be presented by me in December 2001 in the second and final part of the work *The natural history of Buckingham Palace Garden, London* which will form a supplement to *The London Naturalist* for that year.– S. Alex Williams, 40 Preston Park, Faversham, Kent ME13 8LN.

***Dienerella argus* Reitter (Col:. Latridiidae) on Lundy**

My wife and I spent a few days on Lundy last September. Among some beetles shaken out of a heap of old hay in a barn on 17.ix.1999 were three specimens of a small *Dienerella*. The key provided by von Peez (in Freude, Harde & Lohse, Eds., 1967. *Die Käfer Mitteleuropas*. vol 7) indicated that they were *D. argus* and this was subsequently confirmed by comparing them with material in The Natural History Museum, London. *D. argus* is relatively small, at 1.3 - 1.4 mm in length, with large eyes and no temples and is only likely to be confused with *D. filum* (Aubé), which has a two-jointed antennal club whereas the club in *argus* has three joints. The specimens of *D. argus* were accompanied by many example of *D. ruficollis* (Marsham).

D. argus was introduced to the British list by Newberry (1907. *Entomologist's mon. Mag.* **43:** 136) who recorded an example taken at a wholesale druggist in London. It has been recorded in Britain in imported Indian oilcake and Rhodesian maize (Aitken, 1975. *Insect Travellers, vol. 1: Coleoptera.* Inspectorate of the Ministry of Agriculture, Fisheries and Food. Technical Bulletin 31). I have not found any other published record of this beetle in Britain, but the Manchester Museum holds five specimens dated 23.ix.1971 collected from a house in Dukenfield, Manchester and The Natural History Museum, London holds four specimens dated 14.ii.1977 collected from a house in Epping Forest, Essex. Enquiries at other British museums have not produced further records.

On the continent of Europe, the beetle is recorded from wet grassland and from under decayed bark of oaks (von Peez, *op. cit.*). It is known also from North Africa and from North America where it has been found in ground cereals and in standing wheat (Hinton, 1945. *A monograph of the beetles associated with stored products.* vol.1. British Museum (Natural History), London).

I thank Mr Howard Mendel for arranging access to material held in The Natural History Museum, London, Mr Colin Johnson for information on material in the Manchester Museum and Dr Brian Levey for information on material in the National Museum of Wales. I thank also Mr M. Sinclair for advising me that there are no British specimens in the Royal Museums, Edinburgh and no records in the *Scottish Insects Records Index*. Lastly I thank Miss Lisa Coles, National Trust Warden, Lundy for her help in our study of beetles on the island.– JOHN OWEN, 8 Kingsdown Road, Epsom, Surrey KT17 3PU (E-mail: jaowen@talk21.com).

Harpalus griseus Panzer (Col.: Carabidae) in Britain – a postscript

In recording a specimen of this beetle taken in the second half of July 1995 in a light trap at Wimbledon, Surrey (Owen, 1996 *Ent. Rec.* **108**: 69-72), I suggested that it might be the first definitely British example. I did this with some hesitation because the beetle was at one time on the British list, though I had not been able to trace an unequivocally British specimen. To try and clarify the situation, I wrote in the note that I would be pleased to learn of any specimen thought to be a British example of the species to which I had not referred and, to the same end, exhibited the specimen at the British Entomological and Natural History Society's Exhibition in November 1996. Professor Dacie, to whom I am indebted for the specimen, continued to run his light trap at Wimbledon until the end of 1998, but no further examples of the species were trapped.

To date (March 2000), I have not heard of any further records, but one additional piece of information has come to light. Rye (1863 *Ent. Ann.* 65-115), put forward the view that *H. griseus* was a British beetle having seen two examples in the Waterhouse collection. As reported in my note, there is a specimen of *H.griseus* on a card inscribed "G.R.W. coll" in the Waterhouse collection in the Royal Scottish Museums, Edinburgh. This is presumably one of the two specimens seen by Rye in the Waterhouse collection. Now, my friend Roger Booth has found what is almost certainly the other Waterhouse specimen, among material in The Natural History Museum, London. Like the one in Edinburgh, it is mounted on a card inscribed "G.R.W. coll." and also like the Edinburgh specimen has a pin-hole in the right elytron. The specimen bears what are apparently two accession labels, one of which refers to Power, but no date or locality is given.

I thank Dr Booth for allowing me to refer to his discovery and for arranging inspection of the specimen in question.– J. A. OWEN, 8 Kingsdown Road, Epsom, Surrey KT17 3PU (jaowen@talk21.com).

Another Welsh record of *Calamotropha paludella* (Hb.) (Lep.: Pyralidae)

In an earlier note (*antea* 41-42) I reported the discovery of some moth species new to Monmouthshire (VC50), including *Calamotropha paludella,* which was also apparently new to Wales. Since then a further Welsh record of *paludella* has surfaced. Barry and Sandra Stewart captured a singleton at Manselfield, South Gower, on 11 August 1995. No suitable habitat exists for *paludella* in the immediate vicinity of Manselfield, but a few miles to the west and east are two fenland National Nature Reserves, Oxwich and Crymlyn Bog/Pant-y-Sais Fen, where the species might perhaps be profitably searched for. However, Goater (*British Pyralid Moths,* 1984) describes *paludella* as a wanderer, inclined to turn up outside its normal range, so the Glamorgan specimen could have come from much further afield, whereas the large numbers discovered in suitable habitats around Newport indicate that *paludella* is definitely resident in Monmouthshire. It now appears that the Glamorgan specimen was the first Welsh record.– MARTIN J. WHITE, 8 St. Nicholas Square, Maritime Quarter, Swansea SA1 1UG.

Records of *Argyresthia conjugella* Zell. (Lep.: Yponomeutidae) from Glamorgan

On 23 July 1999, I identified a specimen of *Argyresthia conjugella* (Zell.) which was among several smaller moths captured by David Gilmore on 24 June 1999. These came from Dare Valley Country Park near Aberdare in the north of Glamorgan. Though common across Britain and recorded in all adjacent counties, a glance at the map in *Moths and Butterflies of Great Britain and Ireland* **3**: 85 suggested that this distinctive species had not previously been recorded in VC41. However, a scan of records held by Lepidoptera Recorder Barry Stewart showed that two specimens of *conjugella* were captured in 1988 by the late Richard G. Warren at Gelli-hir, an ancient woodland nature reserve in Gower in the west of the county. Clearly the species has previously been largely overlooked here, but with the abundance of its larval foodplants, Rowan *Sorbus aucuparia* and Apple *Malus* spp., it will no doubt prove to be far more widespread within Glamorgan.– MARTIN J. WHITE, 8 St. Nicholas Square, Maritime Quarter, Swansea SA1 1UG.

***Pseudopostega crepusculella* (Zell.) (Lep.: Opostegidae) new to Glamorgan**

On 10 August 1999, with Rob Taylor of the Glamorgan Moth Recording Group, I visited Pant-y-Sais Fen National Nature Reserve between Neath and Swansea. We spent approximately one hour between 9 pm and 10 pm "dusking" for moths with nets and hand-held lights. Along the canal towpath bordering the eastern side of the fen, numerous whitish moths were flying. These were mostly Brown China-marks *Elophila nymphaeata* (L.), but I retained one moth that I identified as *Pseudopostega crepusculella.* This species is quite distinctive, but as it has rarely been recorded from Wales and according to Emmet & Heath (1976. *Moths and Butterflies of Great*

Britain and Ireland **1**: 271), is on the wing in June and July, I was anxious to carefully check this identification. At the first opportunity, I took it to the National Museum of Wales where another Glamorgan Moth Recording Group member, David Slade, is currently working on the Lepidoptera collection. Microscopic examination clearly confirmed it as *P. crepusculella*.

Consultation with Maitland Emmet, who maintains updated distribution maps for all the microlepidoptera, revealed that previous Welsh records of this species number only three. There is one confirmed, but undated, recent record from Breconshire, and records from both Monmouthshire and Anglesey without data, but certainly made during the 1970s. The present record is thus new to Glamorgan and only the fourth for Wales.

I am most grateful to Lt. Col. Maitland Emmet for his kind assistance in checking the current status of this moth in Wales.– MARTIN J. WHITE, 8 St. Nicholas Square, Maritime Quarter, Swansea SA1 1UG.

Hemicoelus nitidus (Herbst) (Col.: Anobiidae) in a second Suffolk locality

Hemicoelus nitidus (Herbst) was added to the British list by my friend Howard Mendel on the basis of a single male beaten from Black Poplar *Populus nigra* on the Icklingham Plains in the Suffolk Breck (1982, *Ent. mon. Mag.* **118**: 253). Later, five specimens were reared from fallen branches of Field Maple *Acer campestre* collected in Windsor Great Park (Owen, J. 1990. *Ent. Rec.* **102**: 274). As far as I am aware, these are the only captures of the beetle in this country.

On 25 July 1998, I beat a single male from an old oak *Quercus* in Horringer Park near Bury St. Edmunds (grid reference TM 8162). This capture lends further support to Mendel's view (1989. *Trans. Suffolk Nat. Soc.* **25**: 23-28), expressed when describing the unique nature of the Icklingham Plains area and its saproxylic beetles, that *Hemicoelus nitidus* would be recognised as an ancient woodland relict species

I thank Keith Alexander (National Trust) for permission to record on the Ickworth Estate and Prof. J. Owen for helpful information on his capture at Windsor.– DAVID R. NASH, 3 Church Lane, Brantham, Suffolk CO11 1PU.

Biphyllus lunatus (Fabr.) (Col.: Biphyllidae) and *Annomatus duodecimstriatus* (Müller, P.W.J.) (Col.: Bothrideridae) both feeding on sycamore *Acer pseudoplatanus* bark

Biphyllus lunatus and *Annomatus duodecimistriatus* are well known to have rather specific habitat requirements. *Biphyllus* occurs almost exclusively in cramp balls or King Alfred's cakes, the round, hard, black fungus *Daldinia concentrica* which attacks ash logs and trunks. *Anommatus* is a blind beetle, completely lacking eyes, a feature suited to its secret, subterranean life, where it is recorded as feeding on decaying potatoes, buried wood and other decaying vegetable matter in the soil. I was, therefore, a little startled to find both of these beetles feeding on sycamore bark.

On 4.vi.1996 I rolled over some cut sycamore logs recently felled in Dacres Wood, a small community open space in Lewisham, south-east London (grid reference TQ 355725) and discovered several *Biphyllus* and an *Anommatus*. They were all gathered on the underside of the logs in the black sooty spores of the "sooty bark disease", a fungus *Cryptostroma corticale*, specific to sycamore and which had killed the trees. The logs were resting on and partly sunken into the earth, a habitat not altogether unlikely for *Anommatus*, and it is quite conceivable that the decaying sycamore was just as good as any other log in providing shelter or nourishment for the beetle. But the very many (at least 30) specimens of *Biphyllus* could, surely, only indicate that they were breeding there. Although completely different in form, at least *Cryptostroma* is similar to the normal *Biphyllus* food-fungus in that it is as black and apparently unappetising as *Daldinia*. Hammond & Lawrence (1989. Appendix. Mycophagy in insects: a summary. In: Wilding, N. *et al.* (eds), *Insect-fungus interactions*. London: Academic Press. pp. 275-324), list Biphyllidae (*Biphyllus* and *Diplocoelus*) as generally being associated with *Daldinia*, *Numularia* and *Cryptostroma*, but I do not recall ever seeing a specific record of *Biphyllus* associated with sooty bark disease. On the other hand *Diplocoelus fagi* Guerin-Meneville is now one of the commonest beetles under sycamore bark in the London area and finding it under beech bark, nominally its true host, is something of a novelty. The number of beetles associated with sycamore, and more specifically with the sooty bark disease continues to grow (Jones, 1993. Sycamore: an underrated pabulum for insects and some beetles associated with. *Ent. Rec.* **105**: 1-10 & 1999; *Saprosites mendax* Blackburn (Scarabaeidae) under sycamore logs in Battersea Park, London. *Coleopterist* **8**: 120). One wonders what will be found feeding there next.

– RICHARD A. JONES, 135 Friern Road, East Dulwich, London SE22 0AZ. (bugmanjones@hotmail.com).

***Trinodes hirtus* (Fabr.) (Col.: Dermestidae) – a further Suffolk locality**

Ten years ago I reported the re-discovery of this Red Data Book category 3 beetle at Shrubland Park, Coddenham (1990, *Ent. Rec.* **102**: 186), a locality in which the species continues to thrive, it last being noted there by myself and Martin Collier in June 1998. It is perhaps worth adding that, in addition to being found under Sweet Chestnut *Castanea sativa* bark in this locality – not Spanish Chestnut as stated in my original note – the larvae are also found under that of live Sycamore *Acer pseudoplatanus*.

On 30 June 1999, I was pleasantly surprised to beat a single example from an old oak with cobwebbed cavities, growing on the edge of a grazed pasture at Freston, near Ipswich (OS grid reference TM 1639).

This is the third Suffolk locality for the beetle, Claude Morley having described how he found larvae in a huge *Polyporus sulphureus* (now *Laetiporus sulphureus*) bracket on a very old Crack Willow *Salix fragilis* (1942. *Trans. Suffolk Nat. Soc.* **V** part 1: 36). Although he does not give the provenance of the fungus, some of the

larval skins are present in his collection at Ipswich Museum and show that it was collected at Brandeston (TM 26) on 2 September 1942. Morley (*loc. cit.*) states that "it is pretty surely a mere scavenger in other Beetles' burrows" which is not correct, the larvae feeding on cast spider exuviae and the desiccated remains of spiders' prey in cobwebs under bark. The beetle is normally considered to be associated with ancient broad-leaved woodland and pasture woodland; there are extensive old woodlands adjacent to the Freston locality, but this does not appear to be the case in the Brandeston area and its occurrence on an old willow likewise seems most unusual.

I thank David Lampard, Keeper (Natural History) at the Ipswich Museum for access to the Claude Morley collection.– DAVID R. NASH, 3 Church Lane, Brantham, Suffolk CO11 1PU.

The Geranium Bronze *Cacyreus marshalli* (Butler) (Lep.: Lycaenidae) in Granada

During a holiday in southern Spain, my girlfriend and I went to the city of Granada, mainly to visit the magnificent Moorish palace, the Alhambra. On 9 April 2000, after spending several hours in the palace and its gardens, we walked down into the town to get some food. Though the weather was quite dull, I noticed a lycaenid butterfly flitting amongst the awnings outside a row of cafés and bars. Once it had settled, it was clearly identifiable as the Geranium Bronze. Tom Tolman, in the 1997 Collins Field Guide *Butterflies of Britain and Europe* mentions that this species was noted in Granada as long ago as 1995, so unless the butterfly is being constantly re-introduced with its foodplants, our sighting would indicate that the butterfly has maintained its presence in the city for at least five years.– MARTIN J. WHITE, 8 St. Nicholas Square, Maritime Quarter, Swansea SA1 1UG.

Early emergence of *Anthophora plumipes* (Pallas) (Hym.: Anthophoridae)

Anthophora plumipes is a large and distinctive, sexually dimorphic solitary bee which nests in earth banks and occasionally the mortar of buildings. Males are light or tawny brown with plumose middle tarsi. Females are largely black with a distinctive fringe of orange hairs on the hind legs; both look rather like a small bumblebee, but have a less shaggy appearance. Although widespread in Surrey, it is my experience that this species is more abundant in the London suburbs than in the wider countryside, and is especially common in my garden in Mitcham where, on any suitable days, several males and females can be seen at garden flowers between March and May.

As one of the early spring species which can be readily identified, this is a bee which I regularly record and generally note the first emergence each year. My data for the London area suggest that adults usually appear around the middle of March. This year, however, my first record from my garden in Mitcham (TQ2868) was a male on 13 February 2000 and both a male and female on 20 February. Prior to this

I had just one record for February (a male on 15.ii.1998). The range of dates I hold is shown in *Table 1* below.

Table 1. Recorded dates of observations of *Anthophora plumipes* (Pallas) in Surrey

February			March				April					May				June
8-14	15-21	22-28	1-7	8-14	15-21	22-28	29-4	5-11	12-18	19-25	26-2	3-9	10-16	17-23	24-30	31-6
1	2			2	5	5	4	3	1	6	1	5		1		1

With the growing awareness of early emergence of insects, this strikes me as one which might be investigated in more detail. For example, do they emerge earlier in central London than in the suburbs or in more rural areas? I would be interested to hear from anyone who has records of this species over a period of years, or who would be interested in establishing a monitoring scheme to use this species to investigate the impact of urbanisation on insect emergence.– ROGER K. A. MORRIS, c/o 241 Commonside East, Mitcham, Surrey CR4 1HB.

Psilota anthracina Mg. (Dip.: Syrphidae) and *Melanochaeta capreolus* (Haliday) (Dip.: Chloropidae) – two enigmatic species found together at a site in East Kent

On 24 May 2000, the opportunity to record flies was taken whilst accompanying some sixth form students to Denge Wood near Garlinge Green, East Kent (grid reference TR 106528). The site visited is managed by the Woodland Trust and consists of a small area of west-facing chalk grassland fringed by beech *Fagus sylvatica* and hazel *Corylus avellana* woodland. Management seems concerned largely with maintaining populations of certain orchids, e.g., Lady orchid *Orchis purpurea* and the Duke of Burgundy Fritillary *Hamearis lucina* L., although previous visits by myself have also revealed a good diversity of less common insects, such as *Microrhagus pygmaeus* (Fabr.) (Col.: Eucnemidae), *Nymphalis antiopa* L. (Lep.: Nymphalidae) and *Macronychia polyodon* (Mg.) (Dip.: Sarcophagidae) on 1.vi.1998, 16.iv.1996 and 16.vii.1996 respectively.

Between 12.00 and 12.30 hours, sweeping was confined to a small area of recent coppice work around a mature beech in the lowermost part of the reserve, within which someone had built a "camp" of birch *Betula pendula* logs. On returning home, the contents of the pooter were quickly sorted and pinned and the resultant material scanned for unfamiliar forms. The first specimen to deserve closer attention was a deep blue-black fly which, at the time of collection, was taken to be *Hydrotaea ignava* (Harris), being about the same size and equally sluggish in nature. It was only on examining the wing venation that the fly was seen to be a syrphid and subsequent reference to Stubbs and Falk (1983. *British Hoverflies*. British Entomological and Natural History Society), revealed it to be a male *Psilota anthracina* Mg.. Falk (1991. *A review of the scarce and threatened flies of Great Britain (part 1)*. Research

and survey in nature conservation 39), states that the species has its stronghold in the New Forest and Windsor and referred to other sites in Dorset, Essex, Surrey and Warwickshire. Chandler, 1969 (The Hover-flies of Kent. *Transactions of the Kent Field Club* **3**:139-202) considered that *P. anthracina* was a species unlikely to be found in Kent. The larvae are now known to develop in sap runs on trees (Stubbs, 1996. *British Hoverflies*, second supplement. British Entomological and Natural History Society).

Numerous specimens of *Oscinella* were also swept during the visit, including several *O. maura* (Fall.) which is conspicuous because of its white arista. A single female with darkened wings was at first thought to a teratological form of the latter as here the arista was much thickened (considerably more so than in the genus *Elachiptera*) and covered with dark pubescence. Using the key by Collin (1946. The British genera and species of Oscinellinae (Diptera, Chloropidae). *Transactions of the Royal Entomological Society of London* **97**: 117-148), the specimen readily ran to *Melanochaeta capreolus* (Haliday). Collin stated "...except for its arista, might easily pass as a species of *Oscinella*" and he had personally taken the species in three different localities in Cambridgeshire in May and June. Dr J. Ismay (pers. comm.) has additional records from Berkshire, Herefordshire, Lancashire, Norfolk, Northamptonshire, Oxfordshire, Surrey and Yorkshire.

The discovery of these two individuals raises the number of Syrphidae recorded from the county to 194 species and Chloropidae to 123.– LAURENCE CLEMONS, 14 St. John's Avenue, Sittingbourne, Kent ME10 4NE.

Another record of the bee-wolf, *Philanthus triangulum* (Fabr.) (Hym.: Sphecidae) in urban central London

On 5 August 1999, I netted an unusual-looking wasp from a narrow and undistinguished scrubby stretch of trees, mainly ornamentals, lining the railway trackside at Parson's Green, London (grid reference TQ 249766). It proved to be the bee-wolf *Philanthus triangulum*. Although listed as "Vulnerable" (RDB2) by Else & Spooner (1987. *Philanthus triangulum*, the bee wolf. In: Shirt, D. B. (Ed.) *British red data books: 2. Insects*. Nature Conservancy Council) and Falk (1991. *A review of the scarce and threatened bees, wasps and ants of Great Britain*. Nature Conservancy Council), this characteristic insect has now spread widely. Else (1997. *Philanthus triangulum* (Fabricius, 1775). In Edwards, R. (Ed.) *Provisional atlas of the aculeate Hymenoptera of Britain and Ireland. Part 1*. Biological Records Centre) demonstrates this remarkable increase and even relates a record from central London at Battersea Bridge roundabout. The wasp's appearance on the other side of the Thames just goes to confirm that when an insect starts to spread, it can find a foothold in even the unlikeliest of sites. In London, these unlikely sites are often scrappy bits of rough ground, usually derelict or disturbed. Here is another tick in the list of unusual species associated with ruderal plots, that enthusiastic euphemism for "wasteland".– RICHARD A. JONES, 135 Friern Road, East Dulwich, London SE22 0AZ. (bugmanjones@hotmail.com).

Butterfly rape

During a visit to Corregidor Island, just off Manila in the Philippines, I had the opportunity of observing the mating behaviour of *Cethosia biblis insularis* C. & R. Felder, 1861. Most butterflies go through some sort of mating ritual, sometimes most intricate. *Cethosia biblis* does not. The male grabs the female in the air, forces her to the ground, sits on top of her, and gradually aligns himself to curl the abdomen so *copula* is established. It is just ten seconds between the intercept in the air and *copula*. It looks like rape of the most brutal nature. This is also the common procedure among the *Acraea*, which is interesting. Though the *Cethosia* have traditionally been considered members of the Nymphalinae, recent findings indicate that they may be closely related to the Acraeinae. So maybe we have to include rape in future cladistic and systematic studies. Males and females must live in different habitats and the females only come into male territory only when they "want" to get raped; when going about the important business of laying eggs they cannot afford to be waylaid by males intent on rape. So here is a nice little research project for someone going to Corregidor for more than a weekend of quality time with their wife.– TORBEN B. LARSEN, 5 Wilson Compound, 2811 Park Avenue, 1300 Pasay City, Metro Manila, The Philippines (E-mail: torbenlarsen@compuserve.com).

***Odontomyia tigrina* (Fabr.) (Dip.: Stratiomyidae) in urban London**

Folkestone Gardens, a small 2.4-hectare public open space in Deptford, south-east London (grid reference TQ361770), is dominated by an artificial pond. Edged with willow trees and covered with lily pads, at first sight it looks promising, but a closer inspection shows, unfortunately, that tyres, plastic bags and empty beer cans lurk in the shallows. Thinking that there was fairly little hope for invertebrates in another of London's vandalised ponds, I was pleasantly surprised to sweep a specimen of *Odontomyia tigrina* off of emergent vegetation on 8 June 1999.

This rather local fly is nationally scarce, accorded Notable status by Falk (1991, *A review of the scarce and threatened flies of Great Britain. Part 1)* who reports that it is primarily found near ponds and ditches in southern England, especially on the coastal marshes of Monmouthshire, Somerset and the Thames Estuary.

Although close to the River Thames, less than a kilometre as the insect flies, Folkstone Gardens is about as far removed from the fly's normal habitat as can be imagined. The small site is completely surrounded by railway lines, dense urban housing and busy roads. Ironically, the "gardens" of its title refer to an oddly-named series of apparently gardenless streets of small blocks of flats, built at the end of the 19th century. They were demolished by a V2 rocket in 1945 and the site was derelict, then home to various industrial units, until it was cleared in the late 1960s or early 1970s and the pond created. The pond leaked and dried out in the early 1990s, but was restored in 1994 when a new butyl liner was put in place.

The present aquatic fauna of the pond is very poor. There are plenty of water hoglice *Asellus* species in the eutrophic, leaf-polluted mud, four common water

beetles *Hyphydrus ovatus* (L.), *Haliplus confinis* Stephens, *Helochares lividus* (Forster) and *Noterus clavicornis* (Degeer), one water boatman *Cymatia coleoptrata* (Fabr.), the water walker *Hydrometra stagnorum* (L.), the saucer bug *Ilycoris cimicoides* (L.) and two common damselflies *Enallagma cyanthigerum* (Charpentier) and *Ischnura elegans* (Vander Linden).

Only two soldier flies, the single *Odontomyia tigrina* and several specimens of the pretty black and yellow species *Oxycera rara* (Scopoli) elevated the site from the wholly mundane and offered the promise of some slight invertebrate potential for the pond.– RICHARD A. JONES, 135 Friern Road, East Dulwich, London SE22 0AZ. (bugmanjones@hotmail.com).

Prionocyphon serricornis (Müller) (Col.: Scirtidae) in Wiltshire and Suffolk

Prionocyphon serricornis was originally assigned Red Data Book category 3 (Rare) status by Shirt (1987, *British Red Data Books: 2. Insects*. NCC), but was subsequently downgraded to Notable B by Hyman & Parsons (1992, *A review of the scarce and threatened Coleoptera of Great Britain. Part 1*. UK Nature Conservation No. 3. JNCC). Larvae occur in wet or water-filled rot-holes in trees; they are also frequently encountered in the root-plate pools of beech *Fagus* sylvatica. Larvae appear to be more often recorded than adults.

As I am unaware of any published records for Wiltshire and Suffolk the following captures would seem noteworthy.

Wiltshire: Bemerhills, Grovely Wood, Great Wishford, grid reference SU 0634, 2 beaten from mature oak *Quercus*, 11.viii.1971; Bagfield Copse, Hamptworth, SU 22, 1 beaten from oak *Quercus*, 7. viii. 1986.

Suffolk: Shrubland Park Estate, Coddenham, TM 1253, 1 swept near beeches *Fagus sylvatica*, 20.ix.1986.

I thank Mr. N. Anderson (Hamptworth Estate), The Earl of Pembroke (Grovely Wood) and Lord de Saumarez (Shrubland Park) for permission to record on their property.– DAVID R. NASH, 3 Church Lane, Brantham, Suffolk CO11 1PU.

Fourth update of early emergences of moths at Selborne

The table overleaf continues the comparison (*Ent. Rec.* **111**: 286-287) between my earliest observations of non-hibernatory species in 1992-94 with those in 1995-1997. The m.v. light was run here on just over 320 nights during each year of the survey. Of these next 42 species, 29 arrived earlier in 1995-97 than in 1992-94. Three species shared the same earliest date in both periods. Fifteen species were up to a month earlier than is usually expected.

Species	1995-1997	1992-1994	*MBGBI* imago
947 *Aethes smeathmanniana* (Fabr.)	15 May 97	1 Jun 93	May-Aug
1764 *Chloroclysta truncata* (Hufn.)	15 May 95	24 May 93	May, Jun
1802 *Perizoma affinitata* (Steph.)	15 May 97	13 May 94	May-Jul
1832 *Eupithecia assimilata* (Doubl.)	15 May 97	27 May 92	May, Jun
1976 *Sphinx ligustri* (Linn.)	15 May 95	2 Jun 93	Jun, Jul
1994 *Phalera bucephala* (Linn.)	15 May 97	22 May 93	Jun, Jul
2069 *Tyria jacobaeae* (Linn.)	15 May 97	17 May 94	May-Jul
2158 *Lacanobia thalassina* (Hufn.)	15 May 95	4 Jun 93	May-Jul
2289 *Acronicta rumicis* (Linn.)	15 May 97	15 May 94	May-Jul
2291 *Craniophora ligustri* (D.&S.)	15 May 95	25 Jul 94	Jun, Jul
1021 *Cnephasia asseclana* (D.&S.)	16 May 97	4 Jun 93	Jun-Aug
1219 *Lathronympha strigana* (Fabr.)	17 May 97	29 May 93	May-Sep
1259 *Cydia fagiglandana* (Zell.)	17 May 97	20 Jul 92	Jun-Aug
1868 *Aplocera efformata* (Guen.)	17 May 97	14 May 94	May, Jun
1958 *Lomographa temerata* (D.&S.)	17 May 97	10 May 94	May, Jun
2089 *Axylia putris* (Linn.)	17 May 97	22 May 93	Jun, Jul
1819 *Eupithecia exiguata exiguata* (Hb.)	18 May 95, 97	16 May 94	May, Jun
1827 *Eupithecia intricata arceuthata* (Freyer)	18 May 97	31 May 92	May, Jun
2337 *Oligia strigilis* (Linn.)	18 May 97	4 Jun 93	May-Jul
2078 *Nola confusalis* (H.-S.)	19 May 97	27 Apr 93	May, Jun
1428 *Aphomia sociella* (Linn.)	20 May 95	10 May 93	Jun-Aug
1937 *Peribatodes rhomboidaria* (D.&S.)	20 May 97	6 Jun 94	Jul-Sep
1944 *Hypomecis punctinalis* (Scop.)	20 May 95, 97	30 May 92	May-Jul
2326 *Apamea crenata* (Hufn.)	20 May 95	6 May 94	May-Jul
2387 *Caradrina morpheus* (Hufn.)	20 May 97	22 May 94	Jun, Aug
2126 *Xestia c-nigrum* (Linn.)	21 May 97	26 May 93, 94	May-Oct

Species	1995-1997	1992-1994	*MBGBI* imago
2157 *Lacanobia w-latinum* (Hufn.)	21 May 95	25 May 93	May-Jul
2173 *Hadena bicruris* (Hufn.)	21 May 95	27 May 93	May-Jul
1778 *Hydriomena impluviata* (D.&S.)	22 May 97	23 Jun 94	May-Jul
2278 *Acronicta megacephala* (D.&S.)	22 May 97	22 May 93	May-Jul
1279 *Dichrorampha acuminatana* (Lien. & Zell.)	23 May 95	15 May 94	May, Jun
1392 *Udea olivalis* (D.&S)	23 May 95	29 May 92	Jun, Jul
2000 *Notodonta dromedarius* (Linn.)	23 May 95	9 May 93	May, Jun
2302 *Rusina ferruginea* (Esp.)	24 May 95	8 Jun 93	Jun, Jul
1652 *Thyatira batis* (Linn.)	25 May 95	9 Jun 93	May-Jul
1681 *Cyclophora linearia* (Hb.)	25 May 95	8 Jun 94	May-Jul
2123 *Diarsia rubi* (View.)	25 May 95	21 May 94	May, Jun
1457 *Hypochalcia ahenella* (D.&S.)	26 May 97	8 Jul 94	Jun, Aug
2120 *Diarsia mendica mendica* (Fabr.)	26 May 97	26 May 93	Jun-Aug
2339 *Oligia latruncula* (D.&S.)	26 May 97	6 Jun 94	May-Jul
2382 *Hoplodrina blanda* (D.&S.)	26 May 95, 97	10 Jun 93	Jun-Aug
2410 *Protodeltote pygarga* (Hufn.)	26 May 97	9 Jun 93	May-Jul

– ALASDAIR ASTON, Wake's Cottage, Selborne, Hampshire GU34 3JH.

The recent occurrence of *Anthocoris minki* Dohrn (Hem.: Cimicidae) in London

An invertebrate survey of Forster Memorial Park, Catford (grid reference TQ 385723), in the south-east London borough of Lewisham produced a surprising species list, with several ancient woodland indicator species, supporting the notion that the park sits on the site of a double assart – an assart being a clearing made inside a woodland for agricultural use, leaving boundaries of wooded strips rather than hedgerows.

The boundary of one of the assarts has apparently been destroyed, and is replaced by a modern (probably middle 20th century) row of Lombardy poplars. It was here that one of the most unusual finds was discovered – the small "flower" bug *Anthocoris minki*. This very local bug is accorded "nationally rare" status (Red Data

Book category 3) by Kirby (1992. *A review of the scarce and threatened Hemiptera of Great Britain.* Joint Nature Conservation Committee). At the time of that review it was recorded only from the Thames tow-path at Kew, and Three Locks, Soulbury, Buckinghamshire. Previous confusion over the identity of species in this difficult genus means that records before Jessop (1993. The British species of *Anthocoris* (Hem: Anthocoridae) *Entomologist's Monthly Magazine* **119**: 221-223), who confirmed the bug as British, are probably referable to *A. simulans* Reuter.

There are many small (3-4 mm) chequered brown and yellow bugs in this genus. They are variously predators of aphids, psocids or other small insects. *Anthocoris minki* is unusual in that it lives inside the peculiar spiral plant galls made by its aphid prey in the leaf petioles of Lombardy poplar. The aphid which creates these characteristic galls, *Pemphigus spirothecae* (Passerini), is a common and widespread species, but the bug is apparently very rare.

Even when this close association was first recorded in Britain, by Jessop, the disparity between the aphid's widespread abundance and the bug's national scarcity was commented upon. Despite searches of apparently suitable sites, Kirby reports that the bug was not found elsewhere. The occurrence rate quoted for Kew was of the order of 2%, two of approximately 100 galls contained 5th instar *Anthocoris,* seven of which were reared to adulthood.

In Forster Memorial Park, *Anthocoris minki* was very common in the *Pemphigus* galls and seemingly in much greater abundance than at any of the other recorded sites. Although I did not make a detailed count, I probably examined less than 50 galls and yet found eight examples of the bug, an "infestation" rate of at least 16%.

Strangely, this was not the first time I had come across the bug. On 5 July 1998 I swept an *Anthocoris* in Morden Cemetery (TQ 233673) in south-west London. It seemed to work to *A. minki,* and it occurred near a row of *Pemphigus*-galled Lombardy poplars, but I was not completely confident of the determination and a return visit, perhaps too late in the season, failed to find any specimens in the spiral galls. Comparison with the bugs from Forster Memorial Park, however, confirms the identification.

But even before this, I had come across a prior reference to the bug in another survey, of London's Battersea Park. An unpublished report by Sorenson *et al.* (1993 *Battersea Park nature areas. The nature reserve and wilderness)* lists *A. minki* with only a brief comment on its rarity and no mention of its ecology in a creditable list of 140 insects an 40 other invertebrates. Nothing is known about those carrying out the survey, but judging from the bibliography which accompanies their report, they concentrated on the more characteristic groups and had limited access to authoritative identification guides. They found two noteworthy species, the hoverfly *Volucella zonaria* Poda (found again in 1998, and in fact quite common in London) and *Anthocoris minki.* At the time I read their report I was sceptical about the *A. minki* record, but now I have doubts about my doubts and it seems quite possible that the bug is established in Battersea Park also. – RICHARD A. JONES, 135 Friern Road, East Dulwich, London SE22 0AZ. (bugmanjones@hotmail.com).

Winter Red Admirals *Vanessa atalanta* (L.) (Lep.: Nymphalidae)

It is increasingly possible that, whatever may have been the case earlier, *Vanessa atalanta* now often hibernates in southern England with apparent success – presumably as a result of global warming. It appears that January 2000 was the warmest on record for the country as a whole, which may well have resulted in a record crop of sightings. Mr K. C. Lewis has noted two or three in the last few years: one on the white, outside wall of the Orangery Tea-rooms at Kew Gardens, Surrey, in warm sunshine, on 23.i.2000, and a probable one near the Palm House not far away three weeks later; also one on the tiled wall of the Co-op building in Welling High Street (north-west Kent), 16.ii.1999, where he had seen one the previous winter. He suggests a possible hibernation site in the permanently illuminated sign here, which, if a butterfly could somehow gain entrance to its interior, would possibly provide the necessary shelter and warmth.– A. A. ALLEN, 49 Montcalm Road, Charlton, London SE7 8QG.

BOOK REVIEW AND ANNOUNCEMENTS

Insects on cherry trees by **Simon R. Leather and Keith P. Bland.** With illustrations by Miranda Gray. Naturalists' Handbooks number 27, series editors S.A. Corbet and R.H.L. Disney. 82pp., 209 x 147mm. Published for the Company of Biologists Ltd by Richmond Publishing Co Ltd., PO box 963, Slough SL2 3RS. Price £15 hardback (ISBN 0 85546 312 0) or £8.95 paperback (ISBN 0 85546 311 2).

Cherries make interesting study for the entomologist. There are a variety of native and non-native species, planted and naturalised, deciduous and evergreen trees. Whilst the true bird cherry *Prunus padus* is mainly northern, the wild cherry or gean *Prunus avium* is more widespread. Nearly 80 insect species associated with cherries are covered by the book: Hemiptera (21 species), Lepidoptera (37 species), Diptera (four species), Hymenoptera (three species) and Coleoptera (14 species).

The handbook follows the usual style for the series. Illustrated keys and coloured plates allow identification of the insects whilst introductory chapters detail some of the interesting ecological lessons learned from their study.

The relationships between the abundance and spread of different cherry foodplants in Britain and the numbers of insect species found on each cherry type makes interesting reading. This is an update of the more-or-less well known feature that common, widespread and long-established plants have more insects associated with them.

Insect-plant interactions are examined with reference to the ways in which different insects partition the cherry trees, some attacking the leaves, others the buds, some at one time of year others in a different season.

The identification keys are well illustrated. I had no trouble determining the leaf mines of *Lyonetia clerkella* and the case of *Coleophora hemerobiella*. I had a little more trouble with the key to cherries because, inevitably, I found an unusual-looking bush when no flowers or fruit were available.

The ecological bent, in common with the entire series of these handbooks, is geared towards the undergraduate biologist rather than the field entomologist, nevertheless it is an interesting read and with many stimulating ideas.

RICHARD A. JONES

Log Book of British Lepidoptera by **J. D. Bradley**. Privately published, 2000. ISBN 0 9532508 1 4.

John Bradley's updated *Checklist of Lepidoptera recorded from the British Isles* (1998) was reviewed in this journal in volume 110, pages 256-258. An updated checklist was long overdue and the names, though unfamiliar in some cases, have now been adopted by most British lepidopterists. However, those of us who were familiar with the 1979 "Log Book" were to some extent disappointed by the large size of the new checklist. That problem has now been solved in this new work, in which John has condensed the checklist into a new volume, the same size and format as the 1979 "Log Book", with a wipe-clean cover. Distribution data and rarity status are added and some errors in the large-format checklist are corrected. A far more satisfactory volume! Log Book numbers are included. Available at £6, plus £1 UK postage and packing, from David Bradley, The Glen, Frogham, Fordingbridge, Hampshire SP6 2HS.

A provisional atlas of the Pyralidae of Somerset by Martin Ellis. Devon Moth Group, 2000

This is not really a book, but a set of maps with no text, and does not warrant a full review, but is well worth drawing to the attention of readers of this journal. The atlas is based on 5800 pyralid records received to February 2000. The maps show all the records in the Somerset Moth Group database (including historic records). In most cases records are mapped to tetrads, but in a few species where the record can not be placed more precisely they are mapped to 10-kilometre square.

A total of 137 species of Pyralidae has been recorded from Somerset. Three species are listed as unconfirmed – *Euchromius ocellea, Nascia cilialis* and *Sciota hostilis*. Records for two species, *Paratalanta hyalinalis* and *Mutuuraia terrealis*, cannot be placed more precisely than "Somerset" and "South Somerset" respectively. The work is described by the author as continuously brooded, which basically means that it is regularly updated and your copy may well have more dots on the maps than mine! Copies may be obtained in one of two ways – free of charge in exchange for Somerset moth records (macro or micro) or for £2 inclusive of postage (payable to Somerset Moth Group) for those with nothing to offer in return. In both cases, the address to write to is Somerset Moth Group, 14 Great Ostry, Shepton Mallet, Somerset BA4 5TT or e-mail your records to mjellis@tesco.net.

Continued from back cover

Book Review and Announcements

THE ENTOMOLOGIST'S RECORD

AND JOURNAL OF VARIATION

(Founded by J.W. TUTT on 15th April 1890)

Contents

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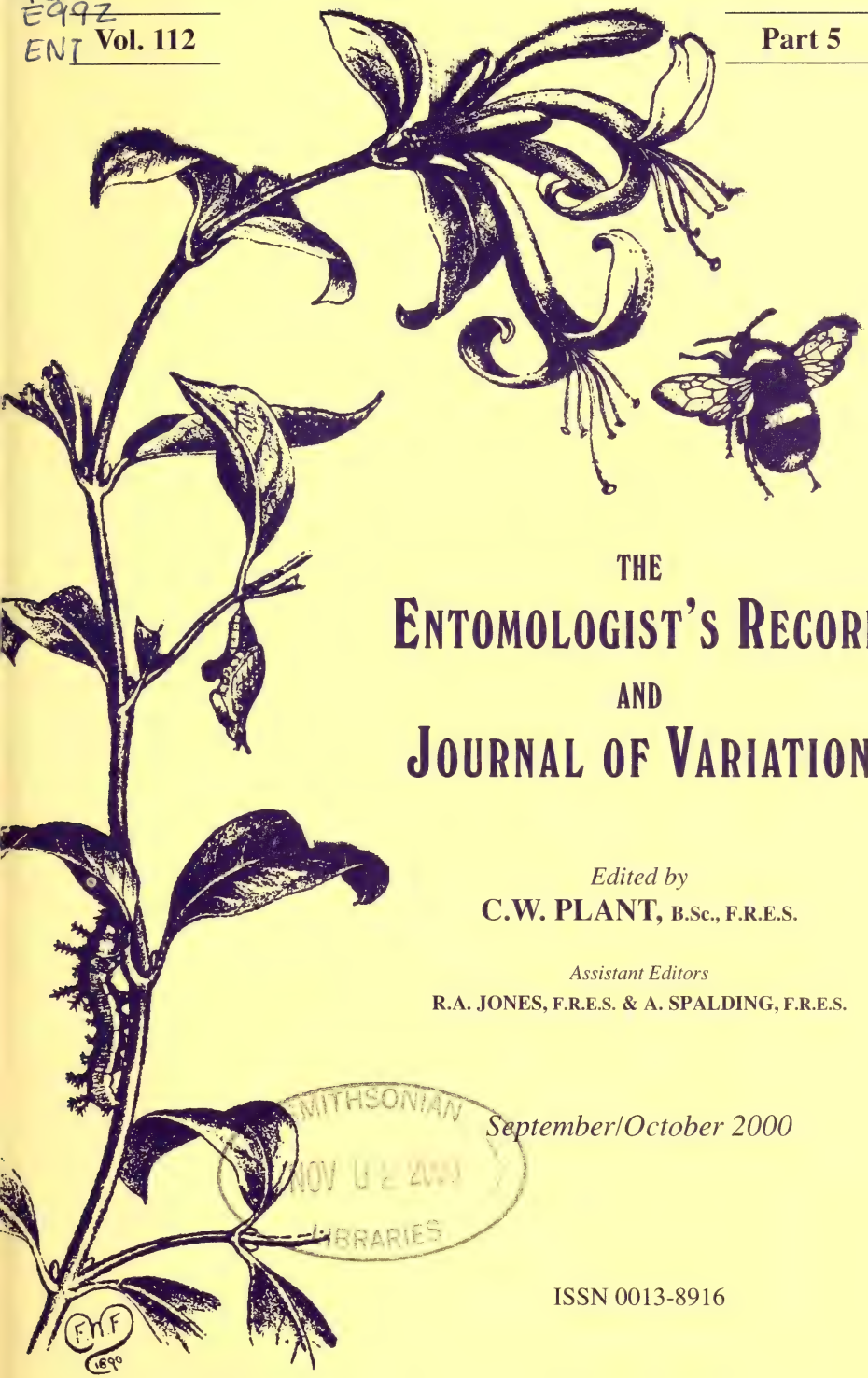

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The preferred method of submission is by e-mail or on floppy disk – even for very short articles. However, we acknowledge that these facilities are not available to everyone and we also accept typed or hand-written manuscripts.

E-mailed contributions are best sent as binary attachments so that formatting is preserved. **Disks** must be PC compatible and the file format must be readable by Word 2000. A single paper copy should accompany disks. In both cases contributions should employ correct use of capital letters, bold and italic type etc and should be single spaced. Leave a single line of space between paragraphs and do not indent the first line. Pay particular attention to the style and punctuation in lists of references. **Typed or hand-written texts** should not use bold or italic. Please underline words to be set in italic and leave the bold type to us; please double space lines so that editorial marks can be added for the typesetter. Only type on one side of the paper. We require two copies of paper contributions: a photocopy is acceptable for the second copy. **In all cases**, we require the originals of photographs, drawings etc.; these will be returned after publication.

All authors should refer to this issue as a guide, particularly with regard to the format of dates, lists of references and lists of species. Names of British Lepidoptera should follow Bradley, J.D. (1998. *A checklist of Lepidoptera recorded from the British Isles*) and authors of species names should be given at the first mention. A full list of instructions may be obtained by sending a stamped addressed envelope marked "Ent. Rec. Guidelines" to the Editor.

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MICROLEPIDOPTERA REVIEW OF 1999

J.R. LANGMAID[1] AND M.R. YOUNG[2]

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BY COMMON CONSENT, 1999 continued the run of poor years for Microlepidoptera, at least in southern Britain, with leaf-mining species again scarce and catches generally low. The winter of 1998/1999 was again rather mild and 1999 itself the warmest year on record, with much sunshine but frequent thunderstorms and local flooding. January to March were mostly mild and wet, with only a little snow but April was unsettled and briefly rather wintry, although it was also warmer than usual overall. May was also unseasonably warm but also dull and unsettled, whereas June was unusually cool and wet. This dull and then cool weather gave a rather poor early summer. July was very dry and warm in the south, but less settled in the north. It ended with some very hot days and these continued into early August, which then became unsettled and wet. September was again sunny and warm but with some unsettled, thundery spells and October was also sunny and mostly dry. Finally November was dry and mostly mild, as was early December but there was then a wintry period before Christmas, making the month rather wet.

As an unusual start to our review we can report that *Anthophila fabriciana* (Linnaeus) has now been recorded from every British vice-county, following the earlier achievement of *Agonopterix heracliana* (Linnaeus) and *Celypha lacunana* ([Denis & Schiffermüller]). The latter is also found in every Irish vice-county, so far a unique distinction!

Two species were recorded as new to the British list, namely *Bryotropha dryadella* Zeller, which has been found in the south-west between 1984 and 1999 but only recently recognised by R.J. Heckford and *Ancylodes pallens* Ragonot, found by P. Davey at Gaunt's Common, Dorset in January, as a migrant. Two further species have been recognised as British after further examination of old specimens. J.R. Langmaid and K. Sattler found one *Teleiodes flavimaculella* (Herrich-Schäffer) in the collection of J.T. Radford from West Sussex and also one in the collection of BMNH from Blean Wood, Kent, the latter prior to 1949. R.J. Heckford and K. Sattler have re-examined British *Scrobipalpula* spp. and have found that those called *S. psilella* (Herrich-Schäffer) are in fact all *S. diffluella* (Frey). Accordingly the latter name replaces the former on the British list.

Three species have been found new to Wales, namely *Ectoedemia louisella* (Sircom), *Ochsenheimeria vacculella* (Fischer von Röslerstamm) and *Stathmopoda pedella* (Linnaeus); two new to Scotland, *Argyresthia trifasciata* Staudinger and *Digitivalva pulicariae* Klimesch; and two new to Ireland, *Myelois circumvoluta* (Fourcroy) and *Homoeosoma sinuella* (Fabricius).

R.J. Heckford has continued his remarkable series of observations on the larvae of species which have not previously been recorded or properly described in Britain, including *Schiffermuellerina grandis* (Desvignes), *Denisia subaquilea* (Stainton), *D. albimaculea* (Haworth), *Borkhausenia fuscescens* (Haworth), *Bryotropha terrella*

([Denis & Schiffermüller]), *Gelechia senticetella* (Staudinger), *Oegoconia caradjai* Popescu-Gorj & Capuse, *Crambus pascuella* (Linnaeus) and *C. uliginosellus* Zeller.

The Scottish Entomologists' Meeting in June was based on the Isle of Arran (100), to try and find new records for a neglected area of Scotland and, despite rather poor weather, found an amazing 62 species not previously recorded there. These included *Phalonidia affinitana* (Douglas), at its most northern British location, as well as a series of other species which are generally more southern. This emphasises the mild climatic conditions in south-west Scotland.

We are most grateful to those who contributed records and they have been identified in the list by their initials: H.E. Beaumont, K.P. Bland, K.G.M. Bond, S.D.S. Bosanquet, K.V. Cooper, A.M. Davis, B. Dickerson, A.H. Dobson, B. Elliot, A.M. Emmet, R.G. Gaunt, B. Goodey, M.W. Harper, R.J. Heckford, B.P. Henwood, R.I. Heppenstall, S.H. Hind, D. Hipperson, M.R. Honey, S.A. Knill-Jones, J.R. Langmaid, R. Leverton, D.V. Manning, D. O'Keeffe, R.M. Palmer, S.M. Palmer, M.S. Parsons, J.T. Radford, A.N.B. Simpson, E.G. Smith, F.H.N. Smith, I.F. Smith, M.H. Smith, R.A. Softly, P.H. Sterling, W.G. Tremewan and M.R. Young. SEM denotes the Scottish Entomologists' Meeting; the Lepidopterists present were KPB, AMD, JRL, RMP, MRY, Caroline Allen, Graham Irving, Duncan Williams, Peter Wormell and Jessie Wormell.

Titles of journals are abbreviated as follows: *Ent. Gaz.* for the *Entomologist's Gazette*; *Ent. Rec.* for the *Entomologist's Record* and *Journal of Variation*; *Atropos* is given in full; and *Ir. Nat. J.* for the *Irish Naturalist's Journal*.

As a general rule only new VC records are included in the following systematic list. We have taken advantage of A.M. Emmet's maps to recognise these and are most grateful for his time and trouble in checking them. They are both bold and underlined. We have used J.D. Bradley's 1998 checklist as our guide to nomenclature and species order, including the "log book" numbers.

We would request that records for the 2000 review are sent to John Langmaid as soon as possible, as we would like to publish the Review during 2001. Please try and use the full and exact format that is used in the Review, as this greatly eases the task of collation. It is also possible to send records by e-mail to john@langmaidj.freeserve.co.uk

We are most grateful to the efforts of so many recorders, who have contributed to increasing our knowledge of the distribution of our British and Irish Microlepidoptera.

SYSTEMATIC LIST

MICROPTERIGIDAE

3 *Micropterix aureatella* (Scop.) — Ordiquhill (**94**) vi.1999 — RL & MRY

5 *M. calthella* (Linn.) — Castleoliver Wilderness (**H8**) 22.iv.1999 — KGMB

ERIOCRANIIDAE

9 *Eriocrania sparrmannella* (Bosc) — Glenloig, Isle of Arran (**100**) tenanted mine on *Betula pubescens* 27.vi.1999 — SEM

NEPTICULIDAE

20 *Ectoedemia decentella* (H.-S.) — Bishopstrow (**8**) 10.viii.1999 — EGS & MHS

22 *E. louisella* (Sirc.) — Dingestow (**35**) 8.vi.1999 — SDSB, **New to Wales**

23 *E. argyropeza* (Zell.) — Knockando (**94**) tenanted mines on *Populus tremula* 24.x.1999 RL, RMP & MRY; Collum Point (**H24**) mines 7.xi.1999 — KGMB

28 *E. angulifasciella* (Staint.) — Rindown Wood (**H25**) tenanted mines 5.x.1999 — KGMB

34 *E. occultella* (Linn.) — St John's Wood (**H25**) mines 17.x.1999 — KGMB

37 *E. albifasciella* (Hein.) — Leemount (**H4**) mines 14.x.1999; Culnagore (**H24**) vacated mines 7.xi.1999 — KGMB

38 *E. subbimaculella* (Haw.) — Rossington (**63**) 26.v.1999 — RIH

50 *Stigmella aurella* (Fab.) — Knockando (**94**) vacated mines on *Rubus fruticosus* 24.x.1999 — RL, RMP & MRY; Helensburgh (**99**) mines on *R. fruticosus* xi.1999 — MRY

65 *S. speciosa* (Frey) — Tattenhall (**58**) mines on *Acer pseudoplatanus* 21 viii.1999 — B.T. Shaw & SHH; Flixton (**59**) mines on *Acer pseudoplatanus* 28.ix.1999, det. S.H. Hind — K. McCabe *per* SMP

67 *S. plagicolella* (Staint.) — Cashel Wood (**H24**) mines 7.xi.1999 — KGMB

68 *S. salicis* (Staint.) — Machrie, Isle of Arran (**100**) mines on *Salix* sp. 27.vi.1999 — SEM; Portlick (**H23**) mine 6.xi.1999 — KGMB

74 *S. assimilella* (Zell.) — Formby (**59**) mines on *Populus alba* 11.ix.1999, det. AME — IFS

82 *S. paradoxa* (Frey) — Hugginstown Fen (**H11**) mine 23.vii.1999 — KGMB

84 *S. ruficapitella* (Haw.) — Knockando (**94**) vacated mines on *Quercus* 24.x.1999 — RL, RMP & MRY; Leemount (**H4**) mines 14.x.1999 — KGMB

86 *S. roborella* (Johan.) — Knockando (**94**) vacated mines on *Quercus* 24.x.1999 — RL, RMP & MRY

87 *S. svenssoni* (Johan.) — Thompson Common (**28**) vacated mine on *Quercus* 16.x.1999 — AME

89 *S. basiguttella* (Hein.) — Knockando (**94**) vacated mines on *Quercus* 24.x.1999 — RL, RMP & MRY

92 *S. anomalella* (Goeze) — Knockando (**94**) vacated mines on *Rosa* 24.x.1999 — RL, RMP & MRY; Portlick (**H23**) mine 6.xi.1999; Cashel Wood (**H24**) mines on *Rosa pimpinellifolia* 7.xi.1999 — KGMB

99 *S. hybnerella* (Hübn.) — Shiskine, Isle of Arran (**100**) vacated mines on *Crataegus* 25.vi.1999 — SEM

111 *S. microtheriella* (Staint.) — Cashel Wood (**H24**) vacated mine 7.xi.1999 — KGMB

112 *S. luteella* (Staint.) — Craigellachie (**94**) vacated mines on *Betula* 24.x.1999 — RL, RMP & MRY

116 *S. lapponica* (Wocke) — Glenloig, Isle of Arran (**100**) vacated mines on *Betula pubescens* 27.vi.1999 — SEM

117 *S. confusella* (Wood) — Holcroft Moss (**59**) mines on *Betula* 10.ix.1999 — S.H. Hind & K. McCabe *per* SMP

OPOSTEGIDAE

121 *Opostega crepusculella* (Zell.) — Turraun (**H18**) 13.vii.1999 — KGMB

INCURVARIIDAE

128 *Phylloporia bistrigella* (Haw.) — Machrie, Isle of Arran (**100**) vacated mines and cut-outs on *Betula* 27.vi.1999 — SEM; St John's Wood (**H25**) vacated mine 17.x.1999 — KGMB

129 *Incurvaria pectinea* Haw. — Marlay Park (**H21**) larval feeding on *Betula* 6.vi.1999 — KGMB

136 *Lampronia corticella* (Linn.) = *rubiella* (Bjerk.) — Breidden Hill (**47**) 5.vi.1999 — D.J. Poynton & IFS

138 *L. fuscatella* (Tengst.) — Cardiff (**41**) 21.vi.1998 — D. Gilmore, *Ent. Rec.* **111**:

146 *Nemophora cupriacella* (Hübn.) — Combrook Farn NR (**38**) 10.vii.1999 — J. Robbins, *Ent. Rec.* **112**: 12

149 *Adela cuprella* ([D. & S.]) — Gait Barrows NNR (**60**) spring 1999, det. SMP — R. Petley-Jones *per* SMP

152 *A. rufimitrella* (Scop.) — The Ross, Isle of Arran (**100**) 26.vi.1999 — SEM; Midleton (**H5**) 1.vi.1999; Ardmore (**H19**) 10.vi.1999; Nose of Howth (**H21**) 21.vi.1999; Newcastle Lough (**H22**) 30.v.1999 — KGMB

HELIOZELIDAE

156 *Heliozela resplendella* (Staint.) — Portlick (**H23**) mine 6.xi.1999 — KGMB

157 *H. hammoniella* (Sorh.) — Holcroft Moss (**60**) mines on *Betula* 10.ix.1999 — S.H. Hind & K. McCabe *per* SMP

PSYCHIDAE

185 *Luffia ferchaultella* (Steph.) — Grendon (**32**) cases 17.v.1999 — G. Crawford *per* DVM; Dingestow (**35**) cases 28.vii.1999 — SDSB

TINEIDAE

199 *Psychoides verhuella* Bruand — Loggerheads (**50**) larvae on *Phyllitis* 22.v.1999 — D.J. Poynton & IFS

200 *P. filicivora* (Meyr.) — South Kensington (**21**) bred from *Phyllitis scolopendrium* 20.v.1998 — MRH; Glenshelane (**H6**) larvae 23.vii.1999; The Raven (**H12**) larvae 2.iv.1999; St John's Wood (**H25**) larvae 17.x.1999 — KGMB

196 *Morophaga choragella* ([D. & S.]) — Anston Stones Wood (**63**) 16.vii.1999 — HEB

219 *Nemapogon ruricolella* (Staint.) — Newstead Abbey Park (**56**) 9.viii.1998 — KVC

229 *Monopis obviella* ([D. & S.]) — Dan-y-Graig NR, Risca (**35**) 2.vii.1999 — SDSB

237 *Niditinea fuscella* (Linn.) — Dingestow (**35**) 7.vii.1999 — SDSB

239 *Tinea columbariella* Wocke — Cockayne Hatley (**30**) in RIS trap 2-8.vii.1999, genitalia det. — DVM

243 *T. dubiella* Staint. — Fineshade (**32**) in RIS trap 16-22.vii.1999, genitalia det. — DVM; Leighton Moss (**60**) 12.viii.1999, genitalia det. — SMP

245 *T. pallescentella* Staint. — Dingestow (**35**) 16.vii.1999 — SDSB

246 *T. semifulvella* Haw. — Oldmeldrum (**93**) 9.vii.1999 — MRY; Newcastle House (**H22**) 8.vii.1999 — KGMB

247 *T. trinotella* (Thunb.) — Whitewells (**94**) 12.vii.1999 — RL & MRY

BUCCULATRICIDAE

266 *Bucculatrix nigricomella* (Zell.) — Flixton (**59**) 17.viii.1998, det. SMP — K. McCabe *per* SMP

267 *B. maritima* Staint. — Dingestow (**35**) 27.viii.1998 — SDSB; Claughlands, Isle of Arran (**100**) mines on *Aster tripolium* 27.vi.1999 — SEM

273 *B. thoracella* (Thunb.) — Eccleston (**58**) vacated mines and cocoonets on *Tilia* sp. 31.viii.1999 — SHH; Flixton (**59**) 31.vii.1999 — K. McCabe *per* SMP

276 *B. demaryella* (Dup.) — Glaister Bridge, Isle of Arran (**100**) 29.vi.1999 — SEM

GRACILLARIIDAE

282 *Caloptilia elongella* (Linn.) — Claughlands, Isle of Arran (**100**) mines and tenanted spinnings on *Alnus glutinosa* 27.vi.1999 — SEM; Ballygawley Lough (**H28**) mine 23.viii.1999 — KGMB

283 *C. betulicola* (Hering) — Dingestow (**35**) 25.x.1998 — SDSB; Glenloig, Isle of Arran (**100**) mines and spinnings on *Betula pubescens* 27.vi.1999 — SEM

285 *C. azaleella* (Brants) — Pennington (**59**) v.1999 — K. McCabe *per* SMP

288 *C. stigmatella* (Fab.) — Kildonan, Isle of Arran (**100**) vacated spinning on *Salix caprea* 26.vi.1999 — SEM

292 *C. leucapennella* (Steph.) — Dingestow (**35**) 31.vii.1998 — SDSB

289 *C. falconipennella* (Hübn.) — Kingsteignton (**3**) cocoon on *Alnus glutinosa* 30.x.1999, moth bred — BPH; Dingestow (**35**) 17.iii.1999 — SDSB

304 *Parornix devoniella* (Staint.) — Machrie, Isle of Arran (**100**) mines and spinnings on *Corylus* 27.vi.1999 — SEM; Cashel Wood (**H24**) mines 7.xi.1999 — KGMB

313 *Acrocercops brongniardella* (Fab.) — Doncaster (**63**) mines on *Quercus* sp., moths bred viii.1999 — RIH

321a *Phyllonorycter platani* (Staud.) — Trago Mills (**3**) mines on *Platanus* 11.x.1999 — BPH

323 *P. oxyacanthae* (Frey) — Shiskine, Isle of Arran (**100**) mine on *Crataegus* 25.vi.1999 — SEM

327 *P. cydoniella* ([D. & S.]) — Portlick (**H23**) mine 6.xi.1999; St John's Wood (**H25**) mines on *Malus sylvestris* 17.x.1999, moths bred — KGMB

329 *P. pomonella* (Zell.) = *spinicolella* (Zell.) — Milltown of Auchindoon (**94**) mines on *Prunus spinosa* 24.x.1999 — RMP & MRY

330 *P. cerasicolella* (H.-S.) — Delamere Forest (**58**) mines on *Prunus cerasus* 16.x.1999 — K. McCabe & SHH

332a *P. leucographella* (Zell.) — Poole Head (**9**) mines on *Pyracantha* 22.ii.1999 — RJH; Cross-in-Hand (**14**) mines 23.xi.1999 — KGMB; Northampton (**32**) mines on *Pyracantha* 25.ix.1999 — RJH; Cheltenham (**33**) mines xii.1998 — R. Homan *per* RG; Ledbury (**36**) mines 19.x.1998 — MWH; Salford (**59**) mines on *Pyracantha* 12.ii.1999, moths bred — K. McCabe *per* SMP

333 *P. salictella viminiella* (Sirc.) — Filby (**27**) 1.iv.1999 — K.G. Saul *per* DH

335 *P. salicicolella* (Sirc.) — Dingestow (**35**) 22.vii.1999 — SDSB; Portlick (**H23**) mine 6.xi.1999; Rindown Wood (**H25**) mines 5.x.1999 — KGMB

339 *P. ulicicolella* (Staint.) — Dinmore Village (**36**) 14.vi.1999 — MWH

342 *P. coryli* (Nic.) — Machrie, Isle of Arran (**100**) mines on *Corylus* 27.vi.1999 — SEM; Portlick (**H23**) mines 6.xi.1999; Cashel Wood (**H24**) mines 7.xi.1999 — KGMB

343 *P. quinnata* (Geoff.) — Dingestow (**35**) 22.viii.1998 — SDSB; Clumber Park & Rufford Park (**56**) mines on *Carpinus*, moths bred ii – iii.1999 — RIH

351 *P. lautella* (Zell.) — Rindown Wood (**H25**) mines 4.x.1999 — KGMB

359 *P. nicellii* (Staint.) — Cashel Wood (**H24**) mines 7.xi.1999 — KGMB

362 *P. acerifoliella* (Zell.) — Billinge (**59**) 23.v.1999 — C. Darbyshire *per* SMP

363 *P. platanoidella* (Joann.) — Hilcot End (**33**) mines on *Acer platanoides* 16.x.1999 — MSP; Sale Water Park (**58**) mines 6.viii.1999 — SHH; Flixton (**59**) mines 17.x.1999, det. SHH — K. McCabe *per* SMP; Doncaster (**63**) bred iii.1999; Fairburn Ings NR (**64**) bred 1.iv.1999 — RIH

368 *Phyllocnistis unipunctella* (Steph.) — Flixton (**59**) 3.viii.1998 — K. McCabe *per* SMP

369 *P. xenia* Hering — Colchester (**19**) 17.vii.1999 — BG, *Atropos* **9**:34

CHOREUTIDAE

385 *Anthophila fabriciana* (Linn.) — Shiskine, Isle of Arran (**100**) 25.vi.1999 — SEM

387 *Prochoreutis sehestediana* (Fab.) — Machrie, Isle of Arran (**100**) 27.vi.1999 — SEM

389 *Choreutis pariana* (Clerck) — Dingestow (**35**) 30.viii.1999 — SDSB

GLYPHIPTERIGIDAE

397 *Glyphipterix thrasonella* (Scop.) — Ballyvalden (**H11**) 10.vi.1999; Carlanstown (**H22**) 31.v.1999; Reynella (**H23**) 31.v.1999 — KGMB

YPONOMEUTIDAE

401 *Argyresthia laevigatella* (Heyd.) — Ordiquhill (**94**) 1.vii.1999 — RL & MRY

403 *A. glabratella* (Zell.) — Penyclawdd Wood (**35**) 10.vi.1999 — SDSB

407 *A. dilectella* Zell. — Flixton (**59**) 2.vii.1999 — K. McCabe *per* SMP

409a *A. trifasciata* Staud. — Colchester (**19**) 26.v.1999 — BG; Norwich (**27**) 28.v.1999 — S. Paston, *Ent. Rec.* **111**: 238; Northampton (**32**) 3.vi.1999, det. HEB — G. Boyd *per* HEB; Bucksburn (**92**) 3.vi.1999 — RMP, *Ent. Rec.* **111**: 259, **New to Scotland**

412 *A. pygmaeella* ([D. & S.]) — Newcastle Lough (**H22**) 30.v.1999 — KGMB

414 *A. curvella* (Linn.) — Lightfoot Green (**60**) 6.vi.1999 —SMP

415 *A. retinella* Zell. — Catacol, Isle of Arran (**100**) 27.vi.1999 — SEM

417 *A. spinosella* Staint. — Penyclawdd Wood (**35**) 3.vi.1999 — SDSB; Swettenham Meadow (**58**) 31.v.1999 — SHH; Billinge (**59**) 9.vii.1999, det. SMP — C. Darbyshire *per* SMP

418 *A. conjugella* Zell. — Lochranza, Isle of Arran (**100**) 29.vi.1999 — SEM

420 *A. pruniella* (Clerck) — Lightfoot Green (**60**) 5.vii.1999 — SMP

422 *A. albistria* (Haw.) — Hugginstown Fen (**H11**) 23.vii.1999 — KGMB

428 *Yponomeuta rorrella* (Hübn.) — Old Hall Marsh (19) larvae on *Crataegus* 1.v.1999, moths bred, det. BG — D. Warner, *Ent. Rec.* **112**: 43-44

440 *Paraswammerdamia albicapitella* (Scharf.) — Solutia (**35**) 15.vii.1999 — M.J. White, *Ent. Rec.* **112**: 42

443 *Cedestis subfasciella* (Steph.) — Cleddon Bog (**35**) 6.vii.1999 — SDSB

449 *Prays fraxinella* (Bjerk,) — Bucksburn (**92**) 2.vii.1999 — RMP; Shiskine, Isle of Arran (**100**) 26.vi.1999; f. *rustica* (Haw.) — Corrie, Isle of Arran (100) 28.vi.1999 — SEM

451 *Ypsolopha mucronella* (Scop.) — Sandhurst (**33**) 18.iv.1999 — RG

452 *Y. nemorella* (Linn.) — Penyclawdd Wood (**35**) 5.vii.1998 — SDSB; Clashavey River (**H13**) 24.vii.1999 — KGMB

463 *Y. vittella* (Linn.) — Machrie, Isle of Arran (**100**) 27.vi.1999 — SEM

251 *Ochsenheimeria taurella* ([D. & S.]) — Blorenge (**35**) 1.viii.1999 — SDSB

253 *O. vacculella* (F. v. R.) — Llandegfed Reservoir (**35**) 20+ aestivating in old nesting box 8.viii.1999 — SDSB, **New to Wales**

464 *Plutella xylostella* (Linn.) — Blackwaterfoot, Isle of Arran (**100**) 28.vi.1999 — SEM

472 *Digitivalva pulicariae* Klim. — Kildonan, Isle of Arran (**100**) mines with larvae on *Pulicaria* 26.vi.1999, moths bred — SEM, **New to Scotland**

473 *Acrolepiopsis assectella* (Zell.) — Spurn (**61**) 25.vii.1999 — B.R. Spence *per* HEB

LYONETIIDAE

254 *Leucoptera laburnella* (Staint.) — Dingestow (**35**) 27.viii.1998 — SDSB; Lochranza, Isle of Arran (**100**) tenanted mines on *Laburnum* 27.vi.1999 — SEM

COLEOPHORIDAE

491 *Coleophora gryphipennella* (Hübn.) — Cashel Wood (**H24**) case on *Rosa pimpinellifolia* 7.xi.1999; St John's Wood (**H25**) case 17.x.1999; Ballysadare (**H28**) mines on *Rosa pimpinellifolia* 29.v.1999 — KGMB

493 *C. serratella* (Linn.) — Castleoliver Wilderness (**H8**) case on *Alnus glutinosa* 22.iv.1999; Hollybrook House (**H13**) case on *Betula* 11.vi.1999; Ballybay (**H25**) cases 22.viii.1999 — KGMB

498 *C. alnifoliae* Barasch — Southwick (**11**) cases on *Alnus glutinosa* 5.vi.1999, moths bred, the vc 11 record in *MBGBI* **3** was an error — RJD, PHS & JRL

501 *C. siccifolia* Staint. — Chorley (**59**) case on *Crataegus* 12.vi.1999 — SMP; Rossington (**63**) 12.vi.1999, genitalia det. — RIH

504 *C. lusciniaepennella* (Treits.) — St John's Wood (**H25**) case on *Myrica gale* 17.x.1999 — KGMB

510 *C. juncicolella* Staint. — South Kensington (**21**) cases on *Erica ciliaris* 12.v.1998, probably introduced — MRH

518 *C. mayrella* (Hübn.) — Claughlands, Isle of Arran (**100**) 27.vi.1999 — SEM

519 *C. deauratella* L. & Z. — South Kensington (**21**) 30.vi.1998 — MRH

526 *C. laricella* (Hübn.) — Ordiquhill (**94**) 1.vii.1999 — RL & MRY

541 *C. pyrrhulipennella* Zell. — South Kensington (**21**) 17.vi.1998, possibly introduced with *Erica ciliaris* — MRH; Newcastle House (**H22**) 8.vii.1999 — KGMB

547 *C. discordella* Zell. — Dixton Embankment (**35**) 11.vi.1999 — J.S. Baker & SDSB

555 *C. follicularis* (Vallot) — The Derries (**H14**) cases on *Eupatorium* 10.vi.1999 — KGMB

556 *C. trochilella* Dup. — Cockayne Hatley (**30**) in RIS trap 9-15.vii.1999, genitalia det. — DVM

560 *C. paripennella* Zell. — Killoughter (**H20**) mines on *Centaurea nigra* 25.vi.1999 — KGMB

561 *C. therinella* Tengst. — South Kensington (**21**) 24.vi.1997, genitalia det.— MRH

562 *C. asteris* Mühlig — South Kensington (**21**) 26.viii.1999, genitalia det. — MRH

564 *C. obscenella* (H.-S.) — Hale (**59**) cases on *Aster tripolium* 9.x.1999 — S.H.Hind, K. McCabe & B. Shaw *per* SMP; Broad Lough Quarry (**H20**) 24.vii.1999 — KGMB

567 *C. adspersella* Ben. — Pool Hill (**34**) 9.vii.1998, det. J.D. Bradley — M.J. Bradley *per* RG; Pitsford Water NR (**32**) 30.vii-5.viii.1999 — DVM; Burton (**58**) 26.vi.1999, genitalia det. SMP — SHH

568 *C. versurella* Zell. — Bishopstrow (**8**) 10.viii.1999, genitalia det. — EGS & MHS; Pool Hill (**34**) 6.viii.1998, det J.D. Bradley — M.J. Bradley *per* RG

577 *C. artemisicolella* Bruand — Camber Sands (**14**) cases on *Artemisia vulgaris* ix.1998 — MSP

552 *C. lassella* Staud. — South Kensington (**21**) 12.vi.1997, genitalia det. — MRH

581 *C. taeniipennella* H.-S. — Penyclawdd Wood (**35**) cases on *Juncus articulatus* 15.ix.1998 — SDSB; Wakefield (**63**) 9.vii.1999, genitalia det. — HEB; Cahore (**H12**) 26.vi.1999; Turraun (**H18**) 13.vii.1999 — KGMB

583 *C. tamesis* Waters — Scorton (**60**) 3.vii.1999, genitalia det. — SMP; Claughlands, Isle of Arran (**100**) 27.vi.1999, genitalia det. — SEM

584 *C. alticolella* Zell. — The Ross, Isle of Arran (**100**) 26.vi.1999, genitalia det. — SEM

586 *C. adjunctella* Hodgk. — Burton (**58**) 26.vi.1999, genitalia det. SMP — SHH; Claughlands, Isle of Arran (**100**) 27.vi.1999, genitalia det. — SEM

587 *C. caespititiella* Zell. — Cuedon Valley Country Park (**59**) 16.vi.1997, genitalia det. — SMP; Skipwith Common (**61**) cases concealed in seedheads of *Eriophorum* 7.iv.1999, moths bred, genitalia det. — HEB

588 *C. salicorniae* Hein. & Wocke — Caldicot (**35**) 24.vii.1999 — SDSB

589 *C. clypeiferella* Hofm. — Berry Head (**3**) 31.vii.1999 — RJH

ELACHISTIDAE

594 *Elachista gleichenella* (Fab.) — Garn Ddyrys (**35**) 30.vi.1999 — SDSB; Craigellachie (**94**) vacated mine on *Luzula sylvatica* 24.x.1999 — RL, RMP & MRY

596 *E. poae* Staint. — Brampton Wood (**31**) 18.vi.1999 — BD

600 *E. luticomella* Zell. — Kildonan, Isle of Arran (**100**) 26.vi.1999 — SEM

601 *E. albifrontella* (Hübn.) — Shiskine, Isle of Arran (**100**) 25.vi.1999 — SEM

606 *E. humilis* Zell. — The Ross, Isle of Arran (**100**) 26.vi.1999, genitalia det. — SEM

609 *E. maculicerusella* Bruand — Cranstal (**71**) 7.vii.1999 — L. Kneale *per* KGMB; Clonmannon Fen (**H20**) 25.vi.1999; Newcastle Lough (**H22**) 8.vii.1999 — KGMB

610 *E. argentella* (Clerck) — Kildonan, Isle of Arran (**100**) 26.vi.1999 — SEM

613 *E. subocellea* (Steph.) — Maltby Far Common (**63**) 2.vii.1999 — HEB

614 *E. triseriatella* Staint. — Storrington (**13**) 18.viii.1997 — JTR

616 *E. bedellella* (Sirc.) — Kinnoull Hill (**89**) larvae on *Helictotrichon pratense* 24.iv.1999, moths bred — KPB

617 *E. megerlella* (Hübn.) — Penyclawdd Wood (**35**) 15.vii.1999 — SDSB

630 *Biselachista albidella* (Nyl.) — Trellech Bog (**35**) 8.vi.1999 — SDSB; Mexborough (63) 3.viii.1999, second VC record — HEB

OECOPHORIDAE

634 *Schiffermuellerina grandis* (Desv.) — larval description — RJH, *Ent. Gaz.* **50**: 223-224

636 *Denisia similella* (Hübn.) — Olchon Valley (**36**) 12.vii.1999 — MWH

635 *D. subaquilea* (Staint.) — larval description and pabulum — RJH, *Ent. Gaz.* **50**: 224-227

638a *D. albimaculea* (Haw.) — larval description — RJH, *Ent. Gaz.* **50**: 227-228

640 *Batia lunaris* (Haw.) — Dingestow (**35**) 22.vii.1999 — SDSB

641 *B. lambdella* (Don.) — Dinnet (**92**) larvae in dead stems of *Ulex* 18.v.1999, moths bred — RJH & MRY

644 *Borkhausenia fuscescens* (Haw.) — Dingestow (**35**) 23.vii.1999 — SDSB; larval description and pabulum — RJH, *Ent. Gaz.* **50**: 229-229

647 *Hofmannophila pseudospretella* (Staint.) — Borris (**H13**) 23.vii.1999 — KGMB

648 *Endrosis sarcitrella* (Linn.) — Shiskine, Isle of Arran (**100**) 26.vi.1999 — SEM

649 *Esperia sulphurella* (Fab.) — Ordiquhill (**94**) 1.vi.1999 — RL

650 *E. oliviella* (Fab.) — Colchester (19) 17.vii.1999, first vc record for *c.*100 years — BG, *Atropos* **9**: 34

656 *Tachystola acroxantha* (Meyr.) — Chessington (**17**) 12.v. & 29.x.1999 — J. Porter *per* RMP

664 *Diurnea lipsiella* ([D. & S.]) = *phryganella* (Hübn.) — Knockando (**94**) 24.x.1999 — RL, RMP & MRY

877 *Stathmopoda pedella* (Linn.) —Forest of Dean (**34**) 9.viii.1998 — SDSB *per* RG; Dingestow (**35**) 23.vi.1999 — SDSB, **New to Wales**

672 *Depressaria pastinacella* (Dup.) — Annamarran (**H32**) larva 10.vii.1999 — KGMB

674 *D. badiella* (Hübn.) — Tumduff Mor (**H18**) 29.viii.1999, genitalia det. — KGMB

682 *D. chaerophylli* Zell. — Pitsford Water NR (**32**) 8.xi.1999 — DVM

689 *Agonopterix ciliella* (Staint.) — Merkland, Isle of Arran (**100**) larvae on *Angelica sylvestris* 28.vi.1999, moths bred — SEM

698 *A. kaekeritziana* (Linn.) — Llanymynech Quarry (**47**) larva on *Centaurea nigra* 5.vi.1999, moth bred — D.J. Poynton & IFS

701 *A. ocellana* (Fab.) — Glaister Bridge, Isle of Arran (**100**) larvae on *Salix aurita* 29.vi.1999, moths bred — SEM

706 *A. nervosa* (Haw.) — Breidden Hill (**47**) larva on *Cytisus* 5.vi.1999 — D.J. Poynton & IFS

GELECHIIDAE

724 *Metzneria lappella* (Linn.) — South Kensington (**21**) 30.vi.1999 — MRH

730 *Apodia bifractella* (Dup.) — Dixton Embankment (**35**) 31.vii.1999 — SDSB; Stockport (**58**) bred from *Pulicaria* 27.ii.1999 — IFS; Lightfoot Green (**60**) 13.viii.1999 — SMP

735 *Monochroa tenebrella* (Hübn.) — Kildonan, Isle of Arran (**100**) 26.vi.1999 — SEM

736 *M. lucidella* (Steph.) — Gait Barrows NNR (**60**) 10.vii.1999 — SMP

737 *M. palustrella* (Dougl.) — Berrow (**6**) 5.vii.1998 — D.F. Miller, *Ent. Rec.* **111**: 210; Portland (**9**) 31.vii.1999 — M. Cade *per* PHS

742 *M. lutulentella* (Zell.) — Harnham Lines (**8**) — 14.vii.1999, genitalia det. — EGS & MHS

746 *Chrysoesthia drurella* (Fab.) — Dingestow (**35**) 22.vii.1999 — SDSB

747 *C. sexguttella* (Thunb.) — Dingestow (**35**) 23.vii.1999 — SDSB

777a *Bryotropha dryadella* Zell. — Berry Head (**3**) 1984—1999 and Upton Towans (**1**) 1988, moths found between mid-May and end of July — RJH, *Ent. Gaz.* (in preparation). **New to Britain**

779 *B. affinis* (Haw.) — Dingestow (**35**) 29.vii.1999 — SDSB

783 *B. boreella* (Dougl.) — Wartle Moss (**93**) 4.vii.1999 — MRY

787 *B. terrella* ([D. & S.]) — larval description — RJH, *Ent. Gaz.* **50**: 229-230; Dixton Embankment (**35**) 10.vi.1999 — SDSB; Tullybryan (**H32**) 9.vii.1999 — KGMB

789 *B. domestica* (Haw.) — St Ives (**31**) 30.vii.1999 — BD; Tullybryan (**H32**) 9.vii.1999 — KGMB

764 *Pseudotelphusa scalella* (Scop.) — Colchester (**19**) 29.v.1999 — BG

774a *Teleiodes flavimaculella* (H.-S.) — Walberton (**13**) 2.vi.1995 — JTR, *Ent. Gaz.* **50**: 5-10, **New to Britain**

775 *T. sequax* (Haw.) — Llanymynech Quarry (**47**) larvae on *Helianthemum* 5.vi.1999 — D.J. Poynton & IFS

801 *Gelechia scotinella* H. –S. — South Kensington (**21**) 5.vii.1999, genitalia det. — MRH

801a *G. senticetella* (Staud.) — Pitsford Water NR (**32**) 30.vii-5.viii.1999 — DVM; life history and larval description — RJH, *Ent. Gaz.* **50**: 230-232

803 *G. muscosella* Zell. — Goole (**63**) 5.vii.1998, genitalia det. HEB — T. Ezard *per* HEB, *Ent. Gaz.* **50**: 238

822 *Scrobipalpa acuminatella* (Sirc.) — Machrie, Isle of Arran (**100**) mine on *Cirsium palustre* 27.vi.1999 — SEM

823 *Scrobipalpula diffluella* (Frey) — Identity of the British specimens previously thought to be *S. psilella* (H.-S.), *Ent. Gaz.* **50**: 255-260

826 *Caryocolum vicinella* (Dougl.) — Isle of May (**85**) 29.viii.1999 — KPB

845 *Syncopacma sangiella* (Staint.) — Gait Barrows NNR (**60**) 10.vii.1999, det. JRL — SMP

847 *S. taeniolella* (Zell.) — Dixton Embankment (**35**) 29.vii.1998 — SDSB; Chee Dale (**57**) 17.vii.1999, det. SMP — SHH

850 *S. polychromella* (Rebel) — Chessington (**17**) 1.ii.1999, det. K. Sattler — J. Porter, *Atropos* **7**: 56

854 *Anacampsis blattariella* (Hübn.) — Great Hayes Wood (**30**) 19.vii.1999 — DVM

857 *Anarsia lineatella* Zell. — Norwich (**27**) larva in imported peach 29.vi.1999 — A.G. Irwin *per* DH

858 *Hypatima rhomboidella* (Linn.) — Glaister Bridge, Isle of Arran (**100**) larvae on *Betula* 29.vi.1999, moths bred — SEM

864 *Dichomeris ustalella* (Fab.) — Tintern (**35**) 25.vi.1999 —DO'K

868 *Helcystogramma rufescens* (Haw.) — Catacol, Isle of Arran (**100**) 27.vi.1999 — SEM

749 *Sitotroga cerealella* (Olivier) — Saffron Walden (**19**) at m.v. light 11.vii.1999 — AME

808 *Platyedra subcinerea* (Haw.) — Jaywick (19) larvae on *Lavatera arborea* ii –v.1999, previously unrecorded foodplant — J. Young *per* BG

AUTOSTICHIDAE

871 *Oegoconia deauratella* (H.-S. — Filby (**27**) 27.vii.1999 — K.G. Saul *per* DH; Hilcot End (**33**) 30.vii.1999 — MSP

871a *O. caradjai* Pop.-Gorj & Cap. — larval description — RJH, *Ent. Gaz.* **50**: 232-233

BLASTOBASIDAE

873 *Blastobasis lignea* Wals. — Gt Staughton (**31**) 31.vii.1999 — BD; Borris (**H13**) 23.vii.1999; Ballysadare (**H28**) 23.viii.1999 — KGMB

874 *B. decolorella* (Woll.) — Freshwater (**10**) 14.xi.1999, det. JRL — SAK-J; Pennerley (**40**) 20.vi.1998 — D.J. Poynton *per* IFS; Findochty (**94**) 7.vi.1998 — RL & MRY; Shiskine, Isle of Arran (**100**) 25.vi.1999 — SEM

BATRACHEDRIDAE

878 *Batrachedra praeangusta* (Haw.) — Dingestow (**35**) 6.viii.1999 — SDSB

MOMPHIDAE

882 *Mompha locupletella* ([D. & S.]) — Gouganebarra (**H3**) 3.vi.1999 — KGMB

883 *M. raschkiella* (Zell.) — Ballygawley Lough (**H28**) mine 23.viii.1999 — KGMB

891 *M. sturnipennella* (Treits.) — Portland (**9**) 5.v.1999 — M. Cade *per* PHS

892 *M. subbistrigella* (Haw.) — Dingestow (**35**) 29.viii.1999 — SDSB

893 *M. epilobiella* ([D. & S.]) — Pollardstown Fen (**H19**) larvae 14.vii.1999, moths bred — KGMB

COSMOPTERIGIDAE

898 *Limnaecia phragmitella* Staint. — Gaer Pond (**35**) 6.vii.1999 — M.J. White, *Ent. Rec.* **112**: 42

904 *Spuleria flavicaput* (Haw.) — Dingestow (**35**) 15.v.1999 — SDSB

905 *Blastodacna hellerella* (Dup.) — Newcastle House (**H22**) 8.vii.1999 — KGMB

906 *B. atra* (Haw.) — Dingestow (**35**) 29.vii.1999 — SDSB

909 *Sorhagenia lophyrella* (Dougl.) — Anston Stones Wood (**63**) 16.vii.1999, genitalia det. — HEB

TORTRICIDAE

921 *Phtheochroa inopiana* (Haw.) — Penyclawdd Wood (**35**) 27.vi.1998 — SDSB

932 *Phalonidia affinitana* (Dougl.) — Peterstone Wentlooge (**35**) 6.viii.1998 — SDSB; Claughlands, Isle of Arran (**100**) 27.vi.1999, genitalia det., most northerly record — SEM

936 *Cochylimorpha straminea* (Haw.) — Evesham (37) 29.v.1999, first county record for nearly 100 years — ANBS; Machrie, Isle of Arran (**100**) 27.vi.1999 — SEM; Glendine Quarry (**H11**) 2.ix.1999 — KGMB

937 *Agapeta hamana* (Linn.) — Saint Mullins (**H13**) 23.vii.1999 — KGMB

945 *Aethes cnicana* (Westw.) — The Ross, Isle of Arran (**100**) 26.vi.1999 — SEM

946 *A. rubigana* (Treits.) — Ardee Bog (**H31**) 10.vii.1999 — KGMB

952 *Commophila aeneana* (Hübn.) — Evesham (**37**) 6.vi.1999, seemingly associated with *Senecio erucifolius* rather than *S. jacobaea* — ANBS

954 *Eupoecilia angustana* (Hübn.) — Float (**H23**) 25.viii.1999 — KGMB

956 *Cochylidia implicitana* (Wocke) — Dingestow (**35**) 22.vii.1999 — SDSB

962 *Cochylis roseana* (Haw.) — Dixton Embankment (**35**) 29.vii.1998 — SDSB

964 *C. dubitana* (Hübn.) — Brittas Bay (**H20**) 26.vi.1999 — KGMB

965 *C. hybridella* (Hübn.) — Eccles-on-Sea (**27**) 17.vii.1999 — N. Bowman, *Atropos* **9**: 34

966 *C. atricapitana* (Steph.) — Stourport (**37**) 30.vii.1999 — ANBS

970 *Pandemis cerasana* (Hübn.) — Kildonan, Isle of Arran (**100**) 26.vi.1999 — SEM; Turraun (**H18**) 13.vii.1999 — KGMB

985 *Cacoecimorpha pronubana* (Hübn.) — Newport (**35**) 5.vi.1999 — K. Dupe, *Ent. Rec.* **112**: 41

987 *Ptycholomoides aeriferanus* (H.-S.) — Prestbury (**58**) 12.vii.1999 — D.J. Poynton *per* SHH; Wigan Flashes (**59**) 26.vi.1999 — R. Banks, P. Cleary-Pugh & SMP

989 *Aphelia paleana* (Hübn.) — Machrie, Isle of Arran (**100**) 27.vi.1999 — SEM; Newcastle Lough (**H22**) 8.vii.1999; Cordoo Lough (**H32**) 10.vii.1999 — KGMB

1002 *Lozotaenia forsterana* (Fab.) — Newcastle House (**H22**) 8.vii.1999 — KGMB

1009 *Philedonides lunana* (Thunb.) — Pennerley (**40**) 27.iii.1999 — I.F. Smith *per* SHH

1011 *Pseudargyrotoza conwagana* (Fab.) — Inchmarlo (**91**) vii.1999 — C. Holmes, RMP & MRY

1016 *Cnephasia longana* (Haw.) — Dingestow (**35**) 26.vii.1998 — SDSB

1019 *C. conspersana* Dougl. — St Helens (**59**) 23.vii.1999, genitalia det. SMP — D. Owen *per* SMP; Killoughter (**H20**) 24.vii.1999 — KGMB

1023 *C. genitalana* P. & M. — Sulby (**32**) — 23.viii.1999 — DVM

1038 *Acleris laterana* (Fab.) — Float (**H23**) 25.viii.1999; Rindown Wood (**H25**) 16.x.1999 — KGMB

1041 *A. sparsana* ([D. & S.]) — Glenloig, Isle of Arran (**100**) larva on *Acer pseudoplatanus* 27.vi.1999, moth bred — SEM

1042 *A. rhombana* ([D. & S.]) — Glendine Quarry (**H11**) 2.ix.1999 — KGMB

1043 *A. aspersana* (Hübn.) — Corrie, Isle of Arran (**100**) larva on *Filipendula ulmaria* 28.vi.1999, moth bred — SEM; Float (**H23**) 25.viii.1999 — KGMB

1044 *A. ferrugana* ([D. & S.]) — Hazel Grove (**58**) 2.x.1999, genitalia det. SMP — SHH

1047 *A. schalleriana* (Linn.) — Pitsford Water NR (**32**) 13-19.viii.1999 — DVM

1059 *A. abietana* (Hübn.) — Inchmarlo (**91**) x.1999 — C. Holmes, RMP & MRY

1013 *Olindia schumacherana* (Fab.) — Nantgywyn (**44**) 17.vii.1999 — J. Baker, *Atropos* **9**: 34

1070 *Olethreutes mygindiana* ([D. & S.]) — Ben Rinnes (**94**) 21.vi.1998 — RL & MRY

1074 *O. palustrana* (L. & Z.) — The Ross, Isle of Arran (**100**) 26.vi.1999 — SEM

1082 *Hedya pruniana* (Hübn.) — Shiskine, Isle of Arran (**100**) 25.vi.1999 — SEM

1085 *Metendothenia atropunctana* (Zett.) — Shorncliff (**34**) 8.v.1999 — RG

1093 *Apotomis betuletana* (Haw.) —Whitewells (**94**) 7.viii.1998 — RL & MRY

1095 *A. sororculana* (Zett.) — Ordiquhill (**94**) 7.viii.1998 — RL & MRY

1108 *Lobesia abscisana* (Doubld.) — Penyclawdd Wood (**35**) 17.vii.1999 — SDSB

1109 *L. littoralis* (H. & W.) — Kildonan, Isle of Arran (**100**) 26.vi.1999 — SEM

1111 *Bactra lancealana* (Hübn.) — Kildonan, Isle of Arran (**100**) 26.vi.1999 — SEM; Newcastle Lough (**H22**) 30.v.1999; Ardee Bog (**H31**) 10.vii.1999; Cordoo Lough (**H32**) 10.vii.1999 — KGMB

1111a *B. lacteana* Caradja — Freshwater (**10**) 1.viii.1999, genitalia det. RJH — SAK-J

1113 *Eudemis profundana* ([D. & S.]) — Bowden Housteads Wood (**63**) 23.vii.1999 — HEB

1118 *Ancylis uncella* ([D. & S.]) — Trellech Hill & Cleddon Bog (**35**) 11.vi.1999 — J.S. Baker & SDSB

1126 *A. badiana* ([D. & S.]) — The Ross, Isle of Arran (**100**) 26.vi.1999 — SEM

1132 *Epinotia subocellana* (Don.) — The Ross, Isle of Arran (**100**) 26.vi.1999 — SEM; Cloneybeg (**H19**) 10.vi.1999 — KGMB

1135 *E. demarniana* (F.v.R.) — Risley Moss (**59**) 10.vi.1999, det. SMP — P. Cleary-Pugh *per* SMP

1136 *E. immundana* (F. v. R.) — Dingestow (**35**) 15.v.1999 — SDSB; Newcastle Lough (**H22**) 25.viii.1999 — KGMB

1139 *E. tenerana* ([D. & S.]) — Lamlash, Isle of Arran (**100**) 26.vi.1999 — SEM

1142 *E. tedella* (Clerck) — Crochandoon, Isle of Arran (**100**) 26.vi.1999 — SEM

1144 *E. signatana* (Dougl.) — Penyclawdd Wood (**35**) 6.vii.1998 — SDSB

1145 *E. nanana* (Treits.) — Horton Woods (**32**) 17.vii.1999 — DVM

1150 *E. abbreviana* (Fab.) — Shiskine, Isle of Arran (**100**) larvae on *Ulmus* sp. 25.vi.1999, moth bred — SEM

1156 *E. solandriana* (Linn.) — Crochandoon, Isle of Arran (**100**) 26.vi.1999 — SEM

1157 *Crocidosema plebejana* (Zell.) — Pitsford Water NR (**32**) 30.vii-5.viii.1999 — DVM; Kilnsea (**61**) 14.x.1999 — B.R. Spence *per* HEB

1159 *Rhopobota naevana* (Hübn.) — Shiskine, Isle of Arran (**100**) 25.vi.1999 — SEM

1163 *Zeiraphera ratzeburgiana* (Ratz.) — Flixton (**59**) 8.viii.1999 — K. McCabe *per* SMP

1176 *Epiblema trimaculana* (Haw.) — Shiskine, Isle of Arran (**100**) 25.vi.1999 — SEM

1184 *E. scutulana* ([D. & S.]) — Kildonan, Isle of Arran (**100**) 26.vi.1999 — SEM

1186 *E. sticticana* (Fab.) — Corrie, Isle of Arran (**100**) 28.vi.1999 — SEM

1192 *Eucosma conterminana* (Guen.) — Bullen Hill Farm (**8**) 12.vii.1999, genitalia det. — EGS & MHS

1193 *E. tripoliana* (Barrett) — Caldicot (**35**) 24.vii.1999 — SDSB

1201 *E. cana* (Haw.) — Tullybryan (**H32**) 9.vii.1999 — KGMB

1205 *Spilonota ocellana* ([D. & S.]) — Inchmarlo (**91**) viii.1999 — C. Holmes, RMP & MRY

1205a *S. laricana* (Hein.) — Newcastle Lough (**H22**) 7.vii.1999 — KGMB

1212 *Rhyacionia pinivorana* (L. & Z.) — Ordiquhill (**94**) 1.vii.1999 — RL & MRY

1233 *Pammene aurita* Razowski — Pitsford Water NR (**32**) 17.vii.1999 — DVM

1234 *P. regiana* (Zell.) — Shiskine, Isle of Arran (**100**) pupae under bark of *Acer pseudoplatanus* 25.vi.1999, moths bred — SEM

1245 *Cydia janthinana* (Dup.) — Dingestow (**35**) 7.vii.1999 — SDSB

1246 *C. tenebrosana* (Dup.) — Dingestow (**35**) 20.vi.1999 — SDSB

1247 *C. funebrana* (Treits.) — Dingestow (**35**) 7.vii.1999 — SDSB

1250 *C. lathyrana* (Hübn.) — Burton Bradstock (9) larvae on *Genista tinctoria* 31.v.1999, moth bred — PHS

1254 *C. strobilella* (Linn.) — Inchmarlo (**91**) vii.1999 — C. Holmes *per* MRY

1256 *C. servillana* (Dup.) — Shide Chalk-pit (**10**) pupa in galled twig of *Salix cinerea* 14.vi.1999 — D.T. Biggs *per* SAK-J

1257 *C. nigricana* (Fab.) — Pollardstown Fen (**H19**) 14.vii.1999 — KGMB

1259 *C. fagiglandana* (Zell.) — Burton (**58**) 26.vi.1999, det. SMP — SHH; Pennington (**59**) 28.v.199, det SMP — P. Cleary-Pugh *per* SMP; Gait Barrows NNR (**60**) 10.vii.1999, det. SMP — R. Petley-Jones *per* SMP

1260 *C. splendana* (Hübn.) — Clonmannon Fen (**H20**) 24.vii.1999 — KGMB

1262 *C. amplana* (Hübn.) — Stockaton (**2**) 29.viii.1999, genitalia det. K.R. Tuck — W.E. Birkett *per* FHNS & WGT; Spurn (**61**) 3.viii.1999 — B.R. Spence *per* HEB

1273 *Dichrorampha petiverella* (Linn.) — Dixton Embankment (**35**) 10.vi.1999 — J.S. Baker & SDSB

1279 *D. acuminatana* (L. & Z.) — South Kensington (**21**) 18.v.1998, genitalia det. — MRH

1286 *D. sedatana* Busck — Flixton (**59**) 5.v.1999, genitalia det. SMP — K. McCabe *per* SMP

EPERMENIIDAE

477 *Phaulernis dentella* (Zell.) — Pershore (**37**) 6.vi.1999 — ANBS

481 *Epermenia falciformis* (Haw.) — Wakefield (**63**) 10.vi.1999 — HEB

483 *E. chaerophyllella* (Goeze) — Shiskine, Isle of Arran (**100**) larvae on *Heracleum* 25.vi.1999 — SEM

SCHRECKENSTEINIIDAE

485 *Schreckensteinia festaliella* (Hübn.) — Askham Bog (**64**) 10.iv.1999 — HEB

PYRALIDAE

1292 *Calamatropha paludella* (Hübn.) — Weston Moor (**6**) 7.vii.1999 — R. Higgins *per* AMD; Slimbridge (**34**) 6.viii.1999 — N. Woodward *per* RG; Solutia (**35**) 15.vii.1999 — M.J. White, *Ent. Rec.* **112**: 42

1293 *Chrysoteuchia culmella* (Hübn.) — Tullybryan (**H32**) 9.vii.1999 — KGMB

1294 *Crambus pascuella* (Linn.) — Newcastle House (**H22**) 8.vii.1999; Ardee Bog (**H31**) 10.vii.1999 — KGMB; larval description — RJH, *Ent. Gaz.* **50**: 233-234

1297 *C. uliginosellus* Zell. — larval description — RJH, *Ent. Gaz.* **50**: 234-235

1299 *C. hamella* (Thunb.) — Hampstead (**21**) 28.viii.1999 — RAS

1309 *Agriphila geniculea* (Haw.) — Boytonrath House (**H7**) 31.vii.1999; The Curragh (**H19**) 1.viii.1999 — KGMB

1314 *Catoptria margaritella* ([D. & S.]) — Clonmannon Fen (**H20**) 24.vii.1999 — KGMB

1316 *C. falsella* ([D. & S.]) — Rixton Clay Pits (**59**) 9.vii.1999 — S.H. Hind & K. McCabe *per* SMP

1330 *Donacaula mucronellus* ([D. & S.]) — Wigan Flashes (**59**) 26.vi.1999 — R. Banks, P. Cleary-Pugh & SMP; Leighton Moss (**60**) 15.vi.1999 — G. Powell & SMP; Newcastle House (**H22**) 8.vii.1999 — KGMB

1331 *Acentria ephemerella* ([D. & S.]) — Inverurie (**92**) in RIS trap 15.viii.1999 — RMP

1334a *Scoparia basistrigalis* Knaggs — Minehead (**5**) 10.vii.1999 — M. Ellis *per* AMD

1338 *Dipleurina lacustrata* (Panz.) — Bahana Wood (**H13**) 23.vii.1999; Newcastle House (**H22**) 8.vii.1999; Tullybryan (**H32**) 9.vii.1999 — KGMB

1336 *Eudonia pallida* (Curt.) — Turraun (**H18**) 13.vii.1999 — KGMB

1340 *E. truncicolella* (Staint.) — Hugginstown Fen (**H11**) 23.vii.1999; Borris (**H13**) 23.vii.1999; Ballybrackan (**H18**) 21.viii.1999; Newcastle Lough (**H22**) 25.viii.1999 — KGMB

1344 *E. mercurella* (Linn.) — Newcastle House (**H22**) 8.vii.1999 — KGMB

1345 *Elophila nymphaeata* (Linn.) — Shiskine, Isle of Arran (**100**) 25.vi.1999 — SEM; Cornalara Lough (**H30**) 9.vii.1999; Carrickmacross Lough (**H32**) 10.vii.1999 — KGMB

1356 *Evergestis forficalis* (Linn.) — Corragarry Lough (**H32**) 9.vii.1999

1358 *E. pallidata* (Hufn.) — Owenashad Valley (**H6**) 23.vii.1999 — KGMB

1367 *Pyrausta cingulata* (Linn.) — Cwmyoy (**35**) 24.vi.1999 — SDSB

1370 *Sitochroa palealis* ([D. & S.]) — Castlemorton Common (**37**) 14.viii.1999 — P. Garner *per* ANBS

1371 *S. verticalis* (Linn.) — Cranwich Heath (**28**) 5.vi.1999 — J. Clifton *per* AMD

1373 *Paratalanta pandalis* (Hübn.) — Mere Sands Wood (**59**) 27.v.1999, det. SMP — D. Rigby *per* SMP

1376 *Eurrhypara hortulata* (Linn.) — Ballygown (**H11**) 23.vii.1999; Newcastle House (**H22**) 8.vii.1999 — KGMB

1381 *Anania funebris* (Ström) — Twyford Forest (**53**) 17.vii.1999 — R. Johnson, *Atropos* **9**: 34

1384 *Phlyctaenia stachydalis* (Germar) — Trawsmawr (**44**) 1.vii.1999 — J. Baker *per* AMD

1390 *Udea prunalis* ([D. & S.]) — Castlecomer (**H11**) 25.vii.1999; Turraun (**H18**) 13.vii.1999 — KGMB

1392 *U. olivalis* ([D. & S.]) — Newcastle House (**H22**) 8.vii.1999 — KGMB

1400 *Antigastra catalaunalis* (Dup.) — Bradwell-on-Sea (**18**) ix.1999 — A.J. Dewick *per* BG

1403a *Duponchelia fovealis* Zell. — Southsea (**11**) 3.ix.1999 — JRL; Stoke Holy Cross (27) ix.1999 — A. Musgrove *per* DH; Pennington (**59**) 6.v.1999 — P. Cleary-Pugh *per* SMP

1405 *Pleuroptya ruralis* (Scop.) — Bahana Wood (**H13**) 23.vii.1999; Newcastle House (**H22**) 8.vii.1999 — KGMB

1424 *Endotricha flammealis* ([D. & S.]) — Chartley Moss NNR (**39**) 25.vii.1999 — J. Clifton *per* AMD; Misson (**56**) 17.vii.1999 — HEB

1426 *Achroia grisella* (Fabr.) — Trawsmawr (**44**) 8.vii.1999 — J. Baker *per* AMD; Parr, St Helens (**59**) 31.vii.1999 — R. Banks *per* SMP

1436 *Conobathra repandana* (Fab.) — Cog Moors (**41**) 26.viii.1999 — D.R.W. Gilmore *per* AMD

1445 *Pempelia formosa* (Haw.) — Westonzoyland (**6**) 11.vi.1999 — D. Miller *per* AMD; Rossington (**63**) 6.vii.1999 — RIH

1446 *Salebriopsis albicilla* (H.-S.) — Shrawley Wood (**37**) larvae on *Tilia cordata* 11.ix.1999 — MWH & ANBS

1447 *Sciotia hostilis* (Steph.) — Icklesham (**14**) 17.vii.1999, det. MSP — I. Hunter, *Atropos* **9**: 85-86

1453 *Pima boisduvaliella* (Guen.) — Spurn (**61**) 31.vii.1999 — B.R. Spence *per* HEB

1455 *Dioryctria simplicella* Hein. — Newborough Warren NNR (**52**) 13.viii.1999 — J. Clifton *per* AMD

1458 *Myelois circumvoluta* (Fourcroy) — Clonmannon Fen (**H20**) 25.vi.1999 — KGMB, **New to Ireland**, *Ir. nat. J.* in press

1486 *Apomyelois bistriatella* (Hulst) — Heysham (**60**) 6.vii.1999, genitalia det. SMP — P. Marsh *per* SMP

1461 *Assara terebrella* (Zinck.) — near Ludlow (**36**) 22.viii.1999 — MWH

1462 *Pempeliella dilutella* ([D. & S.]) — Cwmyoy (**35**) 24.vi.1999 — SDSB

1464b *Ancylodes pallens* Rag. — Gaunt's Common (**9**) 5.i.1999, genitalia det. PHS — P. Davey *per* PHS, **New to Britain**

1465 *Nephopterix angustella* (Hübn.) — Ipswich (**25**) vi.1998 — J. Higgott *per* AMD; Luton (**30**) 5.viii.1999 — R. Wilson *per* DVM

1481 *Homoeosoma sinuella* (Fab.) — Broad Lough Quarry (**H20**) 26.vi.1999 — KGMB, **New to Ireland**, *Ir. Nat. J.* in press

1483 *Phycitodes binaevella* (Hübn.) — Rossington (**63**) 22.vii.1999 — RIH

1484 *P. saxicola* (Vaugh.) — Machrie, Isle of Arran (**100**) 26.vi.1999 — SEM; Clonmannon Fen (**H20**) 25.vi.1999 — KGMB

1485 *P. maritima* (Tengst.) — Sharnbrook (**30**) 2.viii.1999 — DVM; Hempsted (**33**) 2.viii.1999 — G.R. Avery *per* AMD

PTEROPHORIDAE

1492 *Oxyptilus laetus* (Zell.) — Walberton (**13**) 24.vi.1998, det. C. Hart — JTR, *Ent. Rec.* **111**: 289-290

1494 *Capperia britanniodactyla* (Gregs.) — Clatterin' Brig (**91**) larvae on *Teucrium scorodonia* 11.vi.1999 — K.P. Bland *per* MRY

1509 *Stenoptilia pterodactyla* (Linn.) — Rathbaun (**H13**) 25.vii.1999; Pollardstown Fen (**H19**) 14.vii.1999 — KGMB

1517 *Adaina microdactyla* (Hübn.) — The Derries (**H14**) 10.vi.1999 — KGMB

1518 *Ovendenia lienigianus* (Zell.) — Luton (**30**) 15.vi – 5.vii.1999 — C.W. Plant, *Ent. Rec.* **112**: 38-39

1520 *Hellinsia osteodactylus* (Zell.) — St Cyrus NNR (**91**) 3.vi.1999, most northerly record — MRY, *Ent. Rec.* **111**: 259

1519 *Euleioptilus carphodactyla* (Hübn.) — Dixton Embankment (**35**) 10.vi.1999 — SDSB

1523 *Oidaematophorus lithodactyla* (Treits.) — Dingestow (**35**) 7.viii.1999 — SDSB

The Small Ranunculus *Hecatera dysodea* (D.& S.) (Lep.: Noctuidae): A new moth for the Middlesex Vice-County and a new larval foodplant

The return of this species to Britain, ending its presumed extinction, was summarised by Agassiz and Spice (1998. *Ent. Rec.* **110**: 229-232). Although the moth was at that time (1997 and 1998), apparently confined to a very small area of West Kent near to London, it seemed logical to assume that it would eventually spread along the River Thames on both the southern and northern banks. I was therefore pleased, though not especially surprised, to discover a number of second instar larvae on the flowering head of a prickly lettuce plant *Lactuca serriola* at a disused wharf on the northern bank of the Thames on the Isle of Dogs, Middlesex, on 17 July 2000. Adults were bred through to confirm the identification and a single adult male was found in a malaise trap sample from the same site (trap operated from 17 July to 20 August 2000).

A few days later, on 24 July 2000, at a site in Twickenham, towards the western side of Middlesex, three small larvae resembling the early instars *H. dysodea* were discovered on the flowering head of an isolated plant of bristly ox-tongue *Picris echioides*. No plants of *Lactuca* were growing within any reasonable distance of this plant and, in spite of searching, only these three larvae could be found. Although the similarity in physical structure of the flowering heads of *Lactuca serriola* and *Picris echioides* is remarkably high, it was considered rather unlikely that the larvae would prove to be *H. dysodea*. Nevertheless, they were taken home and supplied with their original foodplant until pupation; a few weeks afterwards, one adult *H. dysodea* emerged (it is assumed that the other two failed to pupate as their remains could not be found in the compost). This would appear to be a completely new foodplant record for this species.

Although Heath and Emmet (1979. *Moths and Butterflies of Great Britain and Ireland*, **9**: 227) refer to the moths and larvae as being "locally common . . . around London . . ." up to about 1895, a complete review of London records (Plant, 1993. *Larger Moths of the London Area*. LNHS) reveals that the moth has never before been recorded in Middlesex (VC 21).

The moth has now also been recorded in Essex. Don Down reported larvae at East Tilbury during 1999 (*Atropos* No. 9: 84) whilst more recently Ian Kimber took an adult at Boscombe Avenue, Grays on the night of 12 August 2000. I am grateful to Ian for permission to mention his record in this note. These are the first Essex records since 1918. Further round the coast, a single adult was taken at light at Landguard Bird Observatory, Suffolk on 16 June [1999?] (*Atropos* No. 9: 71).

There can be no doubt that this species is set to spread further along the Thames, both eastwards into Kent and Essex and westwards past London. Quite what significance can be attached to the switch to a new foodplant is unclear at present, but it is obviously worth looking for larvae on *P. echioides* and possibly other related plant species. As a species whose re-appearance in Britain is well-documented, detailed monitoring of its spread is clearly possible. All new sightings should be reported to the appropriate county moth recorder.– COLIN W. PLANT, 14 West Road, Bishops Stortford, Hertfordshire CM23 3QP (E-mail: Colinwplant@compuserve.com).

ACRONICTA RUMICIS L. (LEP.: NOCTUIDAE): THE DEVELOPMENT AND DECLINE OF MELANISM IN NORTH-WEST KENT

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IN BRITAIN, many moth species have developed melanistic trends, but attention has been bestowed disproportionately upon the Peppered Moth *Biston betularia* L., and the phenomenon has been neglected regarding most other species. *Acronicta rumicis* is one of those other species. It has a well defined melanic form, or forms, stated by Kettlewell (1973) to comprise ab. *salicis* Curtis and ab. *lugubris* Schultz, both industrial melanics, and their descriptions not dissimilar. Added to this there is the further complication that the latter is described by Kettlewell as phenotypically identical with the ancient rural melanics, which he does not identify by name, found in western Scotland and western Ireland. However, these non-industrial melanics are widespread in Ireland (Baynes, 1964) and in Britain (Skinner, 1984).

Thus the melanics of north-west Kent have a dual origin, their appearance is identical and they are invariably referred to as ab. *salicis*. Barrett (1898) states that the melanic form of *A. rumicus* is found "even so far south as Salop" implying that it was absent from southern Britain for most of the nineteenth century. This is substantiated by Chalmers-Hunt (1965) asserting that melanism in *rumicis* was unknown in Kent prior to 1892. In north-west Kent there has also been a development of industrial melanism, but not to the extent attained in central and east London where f. *salicis* has been the dominant form (Plant, 1993).

Several aspects, including melanism and voltinism, of this species were considered in West (1985), but the relative darkening of typical *rumicis* in this area was not noted. Thus, these are a somewhat darker grey than, for example, specimens from the New Forest, or from Co. Clare and Co. Mayo; this feature is a parallel development to that in *A. psi* ab. *suffusa* Tutt which Kettlewell (*op. cit.*) lists as an industrial melanic, and so this form of *rumicis* must be similarly categorised. Although these specimens vary slightly, so far none have been observed to compare with typical New Forest or western Ireland examples.

Table 1 shows the annual percentages of f. *salicis* for the years 1976 to 1999 inclusive, omitting 1980, 1981 and 1986 when samples of *A. rumicis* at the garden m.v. light remained in single figures. Validity of the percentages for several other years is questionable. However, despite these reservations, the table portrays a significant, but erratic decline in the incidence of f. *salicis* over the first half of the period from 20% to under 10%, and for the second half to an average of about 7.5%, with only the initial year possessing a figure over 10%. Presumably the incidence for north-west Kent will stabilise at the figure prevailing for rural south-east England, a figure I have failed to find quoted for any such region. The absence of such information emphasises the somewhat shallow nature of so many county and other regional publications on the macrolepidoptera, yet regularly operated static traps, ideal for such quantative surveys, are legion.

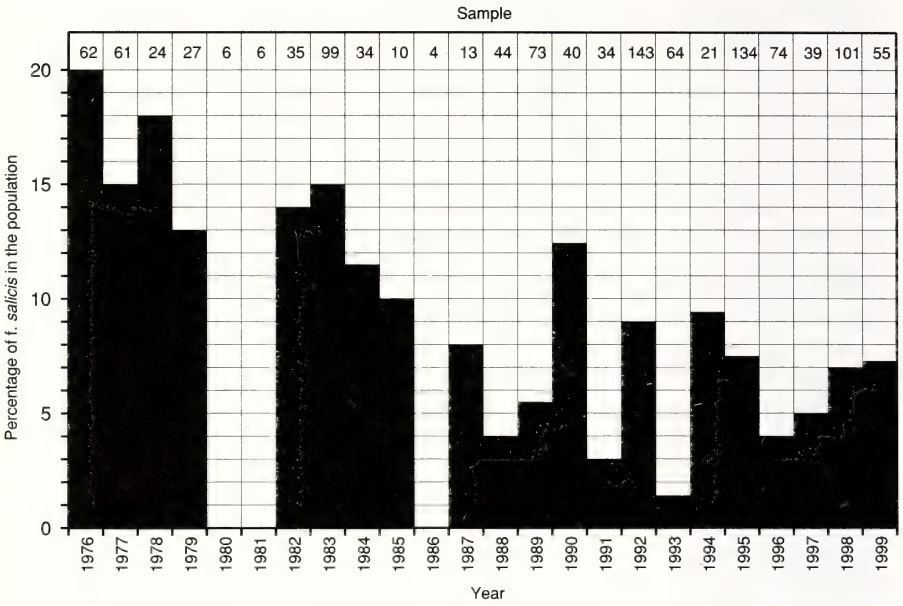

Table 1. *Acronicta rumicis*: annual percentages of f. *salicis* at m.v. light at Dartford for each year from 1976 to 1999. No results are available for the years 1980, 1981 and 1986 when the overall catch fell to single figures.

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THE WALL BROWN *LASIOMMATA MEGERA* L. (LEP.: NYMPHALIDAE) IN CENTRAL ENGLAND, 1997-1999

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THE WALL BROWN has declined more than any other common butterfly within the last few years (Fox and Asher, 1999; Goodhand, 1999), but the causes are unknown. This study reports its current abundance in one region of central southern England, where the decline has been greatest, and identifies the habitats where it does survive.

The abundance of the Wall Brown was measured during 1997, 1998 and 1999 as part of a survey for the *Millennium Butterfly Atlas*. The area covered lay largely within northern Oxfordshire and northern Buckinghamshire, but included a few records from southern Northamptonshire. Recording consisted of visiting one kilometre squares and counting the numbers of adult butterflies seen; exact, rather than approximate, numbers were used. A total of 747 successful visits were made, in each of which at least one butterfly was identified to the species level, and a total of 15,077 individual butterflies was recorded (Table 1). This is a slight underestimate of the total seen, because some individuals of some species (Small White/Green-veined White/female Orange Tip; Small Skipper/Essex Skipper) could not be identified to species level and were therefore not included.

Thirty-four species were recorded. Among them were two Wall Browns (Table 1), which thus made up 0.013% of the total. Only the Black Hairstreak and Clouded Yellow were recorded less frequently (one each); eight "key" species within the area (as defined by Asher, 1994: Grizzled Skipper, Wood White, Green Hairstreak, Purple Hairstreak, White-letter Hairstreak, Small Blue, Brown Argus and White Admiral) were more abundant. The Wall Brown thus remains within the area surveyed, but at a very low level.

A subset of 25 tetrads in ten-kilometre grid squares SP 51 and SP 52, which received an average of 12 visits each (range 8 – 20), were considered well-recorded and were analysed further. Change during the last 20 years was evaluated by comparison with two previous tetrad surveys: Knight and Campbell (1986) for the period 1980-1985, and Asher (1994) for the period 1987-1992. The first survey found the Wall Brown in eight of the 25 selected tetrads (32%); the second recorded it in three (12%), while the present survey found it in only one (4%). Thus the Wall has declined in this area during the last 20 years, as it has done nationally. These figures reflect both the abundance of the butterfly and the recording effort. If the presence of the widespread and common Meadow Brown is used as an indicator of effort, the ratios of tetrads containing the Wall Brown: tetrads containing the Meadow Brown are 8:11, 3:23 and 1:25 respectively. Thus the first survey was incomplete and the decline is even more marked than revealed by the raw figures.

Current habitat preferences within the area were investigated. The 25 selected tetrads were ranked in three different ways: according to total number of individual

butterflies recorded, mean number of individuals per visit, or total number of species. These ranged from 854 to 60 individuals in total (mean 316), 68 to 8 individuals on average per visit (mean 26) and 26 to 14 total species (mean 19). The tetrad containing the Wall Brown was ranked sixteenth according to the number of individuals encountered, twelfth according to the number of individuals per visit and eighteenth according to the number of species. Thus the Wall's habitat was average to poor as defined by these indicators of "butterfly quality". Similarly, there were 32 occurrences of key species within the area (some consisting of more than one individual), but none in the tetrad containing the Wall Brown. It was seen in intensively-farmed agricultural land at the edge of a village, a poor environment for most butterflies. The second Wall Brown record was from a less thoroughly recorded tetrad, but was again in a poor butterfly environment lacking key species, at the side of a road passing through intensively-farmed agricultural land.

Table 1. Summary of butterfly records.

Year	Number of visits	Total butterflies	Wall Browns
1997	257	7,780	1
1998	203	3,205	1
1999	287	4,092	0
Totals	747	15,077	2

Thus within this area of central southern England, the Wall Brown has declined substantially during the last 20 years, and is now rarer than many key species. The only remaining Walls were found in unattractive agricultural habitats. The reasons for their survival in these environments, but apparently not elsewhere, require further investigation.

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Privet Hawk-moths galore!

I usually record from eight to ten Privet Hawk-moths *Sphinx ligustri* L. annually in the light trap in my garden in Saffron Walden, North Essex. In 1999, for example, I had ten, two on one night and eight singletons. In 2000, although I ran the trap intermittently, I had 62. The first was on 9 June and between then and 2 July, during which period I worked the trap on 16 nights, I recorded 53. The peak nights were on 15 June – six; 16 June – nine; 17 June – eight; 18 June – ten. I did not run the trap between 3 and 17 July, partly because of the poor weather and partly for personal reasons. I began again on 18 July and continued until 30th, after which I became unable to carry on. During those 13 days I recorded nine more Privet Hawk-moths.

The last moth was not in the trap. I come down at half light, just before 5 am at the end of July, and after switching off often see a small procession of moths, mostly micros, flying out. So I lift the metal cone that bears the bulb, spread an old net over the Perspex and replace the cone, thus effectively sealing the trap. On this occasion the hawk-moth was on the grass under the garden seat with a Blackbird *Turdus merula*, which had presumably dislodged it from the woodwork, dancing up and down over it. I shuffled to the rescue and finding the moth unharmed picked it up and placed it on the wall of the summerhouse that faces north-east, to be out of direct sunshine (there was no sun that day). It remained where I had put it for at least 16 hours, being still there when I set the trap in the evening. The next morning it had gone and there was no hawk-moth in the trap.

The abundance of Privet Hawk-moths was not confined to Saffron Walden, and a local paper, not printed here, had a photograph and a brief article about the species. It may entertain readers as an example of bad journalism. A couple of old-age pensioners found a large moth on their privet hedge. They caught it in a jug and it was identified for them as a Privet Hawk-moth. The lady said "It was very peculiar. I've never seen anything like it before. It had a lot of fangs so I did not want to handle it – I was quite frightened. You can't be too careful with insects, especially at our age. They could sting you and cause an infection". The couple gave their story to the newspaper and a journalist referred it to an academic at Cambridge University, with a doctorate degree and "an expert on insect classification". He is alleged to have said "Often at this time of year people will see caterpillars which have rather formidable-looking mouth-pieces in their hedges". I never knew that moth and caterpillar appeared at the same time of year. The doctor continued "As this was the moth, I imagine the couple mistook the insect's feet for fangs. It has large feet for sucking nectar from flowers". Either the moth, the learned doctor or the journalist put his foot in it. Possibly the doctor added after "large feet" "and a haustellum" and the journalist, not understanding the word, omitted it and wrote nonsense.

The moths are very docile and some crawl off their tray and onto my clothes, so that I find myself festooned with hawk-moths. However, they can easily be persuaded to walk off on a tree-trunk, wall or fence. I have to do this with most of those that remain in the trap until I liberate the catch at dusk after the Blackbirds have gone to bed.– A. M. EMMET, Labrey Cottage, 14 Victoria Gardens, Saffron Walden, Essex CB11 3AF.

American Painted Lady *Vanessa virginiensis* (Drury) (Lep.: Nymphalidae) on La Gomera, Canary Islands

We visited the Canary Island of La Gomera from 19 to 26 October 1999 mainly to look for *Hypolimnas misippus* L. Unhappily we saw no sign of that butterfly, but we did see sixteen other species. Most interestingly, on 20 October when visiting the town of Hermigua, we found larvae of *Vanessa virginiensis*. They were in nests woven in the leaves and flower heads of Jersey Cudweed *Gnaphalium luteoalbum* which was growing on gravelly, cultivated ground in the middle of the town.

We found the cudweed growing in a few other places, near El Cedro, Valle Gran Rey and in San Sebastian, but found no more larvae.

However this record from Hermigua does confirm that *V. virginiensis* is still resident on Gomera, from where it does not seem to have been recorded for many years.

The other species seen were:

Pieris rapae L. – widely distributed at low to medium altitude.

Pontia daplidice L. – seen at low and high altitudes. Larvae seen on *Hirschfeldia incana*.

Catopsilia florella Fab. – at low levels around *Cassia didymobotrya* planted in gardens. Ova, larvae and imagos present; larvae parasitised by a Tachinid fly whose white ova and points of larval entry were clearly visible. One parasitised larva produced a perfect butterfly, another produced two tachinid fly pupae.

Colias croceus Geoffroy. Only one specimen seen in municipal gardens at San Sebastian.

Gonepteryx eversi Rehnelt. – common in the laurisilva above 600m, mainly on the north slopes of Garajonay.

Lycaena phlaeas L. – only a few seen at El Cedro (900m) and Temocodà (1200m).

Lampides boeticus L. – flying around *Trifolium* sp. in the hotel garden at Santiago.

Cyclyrius webbianus Brullé – at both medium and high altitudes feeding on *Vicia bitumastica*. The possibility of this species being used as a larva foodplant, when their more usual ones eg. *Adenocarpus* sp. are not in flower, could be investigated.

Zizeria knysna Trimen. – Seen at low levels in the hotel garden at Santiago and near the harbour and in gardens at San Sebastian. Observed ovipositing on *Amaranthus* sp. at the latter site. Also seen at El Cedro (900m).

Danaus plexippus L. – a few adults seen in the municipal garden at San Sebastian; no sign of ova or larvae on the vine-like *Asclepiadaceae* species growing there.

Vanessa atalanta L. – a few seen in the laurisilva.

Vanessa indica vulcania Godart. – seen in the laurisilva ovipositing on *Urtica morifolia* Poir.

Vanessa cardui L. – not common, seen occasionally at all levels.

Vanessa virginiensis Drury – see above.

Pseudotergumia wyssii gomera Higgins. – one very worn female at Pastrana (100m) near Targa.

Pararge xiphioides Stand. – observed at Pastrana and in the laurisilva near Temocodá (1200m) and Roque del Diablo (800m).

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LITTLE-KNOWN NOTABLE RECORDS OF CORNISH COLEOPTERA

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MY GOOD FRIEND Keith C. Lewis kindly sent me not long ago a copy of the beetle list for Cornwall, by Prof. J. Clark (1906), in the *Victoria County History* series. Despite its early date, I find in it a number of records of more than ordinary interest which have been very widely, indeed it appears often completely, overlooked in the later literature; and to which I consider it worth drawing attention. In particular they have virtually all been missed by Fowler & Donisthorpe (1913) in their extensive list of additional localities and records brought together in the supplementary volume of Canon Fowler's great work; likewise in the comprehensive review of Hyman & Parsons (1992); and by the present writer. (As far as I am aware no later beetle list for the county has been published.) The following notes are in the order in which the species chosen for comment occur in the list, and include a few additional points of interest.

Carabus intricatus L.: p.188. This rare south-western species is generally thought to have been found in Cornwall only in recent times. However, Clark's entry reads: "Under the bark of trees near Carthamartha; two taken by the Rev. G. Lupton Allen at sugar, near Millook [i.e. Millhook], in 1905". The two places are widely separated, being near Launceston and Bude respectively, in the extreme east of the county; the latter must be our northernmost record so far, widely remote from the nearest Devonshire centres.

Calosoma sycophanta (L.): p.187. "A single specimen captured running along the pavement at Fowey, June, 1899". Fowler & Donisthorpe include a record from Penzance (Rudd).

Nebria complanata (L.): p.188. Not recognised as Cornish today. Yet Clark's rather curious record (for a normally highly gregarious beetle) is: "One specimen obtained at Bude, and two at Tresco, Scilly, under the fronds of *Asplenium marinum* at the foot of some rocks". The second is particularly interesting and can by no means be dismissed as erroneous, the beetle being utterly unmistakable.

Diachromus germanus (L.): p.188. "Taken on the pathway, near Falmouth station, in June, 1904". Of special interest is the late date, 65 years after that given by Hyman & Parsons as the last recorded in Britain "about 1839" – a date which seems, however, too early by two or three decades. This colourful beetle, presumed long extinct here, was possibly always adventitious like *Calosoma sycophanta*. The above appears to be the sole 20th-century find.

Pterostichus aethiops (Panz.): p.188. "Altarnun" – 8 miles S.W. of Launceston. No further details for this moorland and mountain species, known from Devon (Dartmoor and Exmoor districts) northwards.

Bembidion lunatum (Dufts.): p.189. "Four specimens obtained near Morwinstow in 1904; apparently the only record for the south-west of England." It is remarkable that the latter statement remains true today, nearly a century later; as the distribution-map in Luff (1998:63), which shows the record, confirms.

Emus hirtus (L.): p.192. Besides the well-known record of one at the Lizard, autumn 1888, by A.H. Jenkin (Fowler & Donisthorpe, p.232, give the locality as Redruth near Lizard Point), Clark mentions a specimen taken close to Falmouth in 1901, and a few days later another on horse droppings nearby; and one more near Swanpool, on the coast near Falmouth, the same year.

Thanatophilus dispar (Herbst): p.194. "Occurs sparingly under refuse in the Penzance district." No record of this rarity for the south-west in Hyman & Parsons.

Olibrus particeps Muls.: p.195. "Some numbers by sweeping in Whitsand Bay, Sept. 1895 (Keys)." Currently excluded from our list (Thompson, 1958:16). Although J.H. Keys was a highly competent coleopterist, it seems likely that the species in question was really *O.affinis* Sturm.)

Lucanus cervus L.: p.196. The Stag Beetle had, up to 1906, occurred twice in S.E. Cornwall: Mount Edgcumbe (2) and Saltash (1); probably, as Clark comments, casual strays. Whether there are later records I am unable to say.

Aphodius sturmi Harold: p.196. The specimen taken by Keys at Whitsand Bay (near Devonport) in 1902, remains unique as British; its true status in our fauna thus remains an open question (see Allen, 1967:224). However after nearly a century without further records, the presumption of adventive origin becomes strong. Clark's statement contains a curious error: he ascribes the identification to a "Herr Bourkill". How Frank Bouskell (the actual identifier) would have viewed this strange metamorphosis, we can but surmise!

Pleurophorus caesus (Creutz.): p.196. The occurrence of this great rarity in the Scilly Islands is hardly well-known; as Clark states here, two or three (four in the Dale collection at Oxford, according to J.J. Walker) were found on Tresco by C.W. Dale in October, 1890. That year saw the publication of "Fowler" vol.4, so the record was in any case too late for inclusion. There was an example from Tresco (no date) in the G.C. Champion collection. It cannot, of course, be ruled out that the beetles had resulted from an introduction with exotic plants. Clark does not mention the record by Leach from Pentire Point, near Padstow,whence Stephens recorded *Aphodius scrofa* (F.).

Psammodius porcicollis (Ill.): p.196. At Whitsand Bay, the chief British locality, it was eventually found in some quantity, always very locally, by Walker and later by Keys. I quote from the latter's remarks as given in Clark's note: "I find it in sandy places under stones on the cliffs and at roots . . . extremely sluggish in its

movements . . . I once took twenty several inches down in the soil". Jessop (1986) places this in a genus *Brindalus,* which I prefer to regard as subgeneric. (The ever-growing tendency to multiply genera on minute or trivial differences must surely be resisted.)

Donacia simplex F.: p.198. "The larva of this insect in 1903 and 1904 destroyed a number of leaves of the Arum lily by eating inside the petiole"; scarcely a normal larval pabulum for any of the reed-beetles. (Query: are similar instances known?)

Meloe autumnalis Ol.: p.200. "Valley of the Lynher". More detail would have been welcome for this very rare and seldom recorded oil-beetle.

Meloe rugosus March.: p.200. "Looe valley". Likewise no Cornish record in Hyman & Parsons.

Meloe brevicollis Panz.: p.200. "Saltash; on the moors above Liskeard". ("E.Cornwall" in Hyman & Parsons is due to a record of mine from Millhook.)

Sitaris muralis Forst.: p.200. "This extremely interesting species has occurred sparingly for the past three years in a very restricted area not far from Truro about the nests of *Anthophora.* On 14 April, 1904, a female bee was caught with several of the early stage larvae of *Sitaris* attached to the body hairs." The Cornish record seems as unknown today as several others listed in this paper. Not known to have been seen in Britain since 1969.

Ceutorhynchus syrites Germ.: p.202. "Padstow (Lamb)". A very rare species with us, for which Hyman & Parsons give eight county divisions. They include W.Cornwall in its distribution; but because of the location of Padstow, that can hardly refer to C.G. Lamb's find.

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A winter weekend in Epsom for a Red Admiral *Vanessa atalanta* (L.)(Lep.: Nymphalidae)

About 13.00 hours on 19 February 2000, I spent some minutes in the garden here in Epsom watching a Red Admiral flying about a bush of Japanese Apricot *Prunus mume* in full bloom, settling on the blossom and feeding (one could see it using its proboscis). The bush was in full sunshine, but the air temperature round the bush was only 9°C. An immediately adjacent Rosebud Cherry tree *Prunus subhirtella* in full blossom and a bush of the *Lonicera fragrantissima*, also in full blossom a short distance away, were totally ignored. The butterfly itself was quite undamaged.

About the same time on the next day, the butterfly (I can only presume it was the same individual), repeated its performance. The sun was shining, but again the air temperature was only 9°C. The overnight minimum in the garden from 19-20 February was 0°C and there was a sharp ground frost.

On the following day, 21 February, the butterfly was present yet again, settling on the blossom and feeding or, at times, just sunning itself. It was seen first at 11.05 hours and was still flying around at 12.30 hours. The air temperature at the time was 11°C, which was the maximum temperature recorded in the garden during the period 18-22 February.

Sightings of *V. atalanta* in Britain in the first few months of the year are not infrequent. Current thinking (Tucker, 1997. *The Red Admiral Butterfly*. British Butterfly Conservation Society) is that the species over-winters here in a state of quiescence rather than in a state of true hibernation, becoming active whenever the temperature permits. The presence, however, of apparently the same specimen flying in the same garden on three consecutive days in February is, as far as I can determine, unusual.

I thank Howard Mendel for drawing my attention to Tucker's report.– J. A. Owen, 8 Kingsdown Road, Epsom, Surrey KT17 3PU (E-mail: jaowen@talk21.com).

Smaller Heath on the Great Orme

On 29 May, whilst in Llandudno, Caernarvonshire, I took the opportunity to visit rough grassland on the Great Orme, where I caught and released a number of male Small Heath butterflies *Coenonympha pamphilus* L.. These all measured 24 mm in wing span. In Emmet & Heath (1990. *Moths and Butterflies of Great Britain and Ireland*. **7**(1): 277), the male wingspan is given as approximately 33 mm., although the male illustrated on Plate 18 (figure 8) measures only 30 mm. So, these Great Orme specimens could perhaps represent a dwarf race.

Having read long ago of the dwarf races of the Grayling butterfly *Hipparchia semele* and the Silver-studded Blue *Plebejus argus*, then recently discovered in North Wales, I wonder if there is a possibility that other species also appear there in dwarf form.–R. J. R. Levett, 28 The Drive, Tonbridge, Kent TN9 2LP.

***Ethmia funerella* (Fabr.) (Lep.: Oecophoridae) re-found in Somerset**

On 4 June 2000, at Cheddar Wood, Somerset (grid reference ST 4455), I took a striking micro-moth which was unfamiliar to me. This subsequently proved to be *Ethmia funerella,* a Nationally Notable (Na) species, which according to Parsons (1995. *A review of the scarce and threatened ethmiine, stathmopodine and gelechiid moths of Great Britain*) was known from Cheddar prior to 1970. Martin Ellis of the Somerset Moth Group has confirmed that they know of no other records other than that published in Turner, A.H. (1955. *Lepidoptera of Somerset*),namely a record by H. Slater from 1917 listed as "Cheddar".

The current known status of this moth is that it occurs in the Cambridgeshire and Huntingdonshire fens with scattered records on the eastern side of the country from Yorkshire to Kent. The present record suggests that it still persists, probably in low numbers, at this western locality.

The favoured habitat is given as fens and damp woodland, the latter according well with that in Cheddar Wood. Foodplants listed by Parsons are Common Comfrey *Symphytum officinale*, Tuberous Comfrey *S. tuberosum*, Lungwort *Pulmonaria officinalis*, Common Gromwell *Lithospermum officinale* and also Wood Forget-me-not *Myosotis sylvatica*. Although I have yet to confirm the presence of these plants in the wood, the moth was found on a path with a flourishing population of Purple Gromwell *L. purpurocoeruleum* and it is possible that this was the plant being used.

The identity of the specimen was confirmed by Ray Barnett and it is now in the collection of the City Museum & Art Gallery, Bristol.– PAUL FLETCHER, 39 Old Church Road, Axbridge, Somerset BS26 2BE.

***Dioryctria schuetzeella* (Fuchs) (Lep.: Pyralidae) new to North Hampshire**

On 12 July 2000, I was pleased to find an unusual pyralid resting partly in rain water on the top of my moth trap here. Fortunately, the moth was undamaged and I am grateful to Barry Goater who has identified it as *Dioryctria schuetzeella* and confirmed its status as new to North Hampshire.

This species, which is widespread on the continent, feeds on Norway Spruce *Picea abies*, and was first recorded as British in Kent during 1980, with a specimen noted in and Sussex during 1981. The first sighting on the Isle of Wight took place in 1985 and from 1992 to 1999 five specimens were recorded in South Hampshire. Although Selbourne is not prime coniferous country, its occurrence here would suggest that the moth may be spreading northwards in this county.– ALASDAIR ASTON, Wake's Cottage, Selborne, Hampshire GU34 3JH.

***Dioryctria schuetzeella* Fuchs (Lep.: Pyralidae), new to Hertfordshire and a modern county record of *Piniphila bifasciana* (Haw.) (Lep.: Tortricidae)**

Having spent all of the previous night, until 5 am., out with the lamps at Rye Meads Nature Reserve on an outing of the Herts. Moth Group, it was with some initial reluctance that I agreed to join Rob Souter at Bramfield Woods, near to Welwyn

Garden City, on 29 July 2000 (grid reference TL 2816). However, it was a new site in an under-recorded area of the county and Rob managed to persuade me that the number of suitable lamping nights this year had been so low that this one was an opportunity not to be missed!

Our effort was rewarded with the capture of a single, apparently freshly-emerged, male example of a *Dioryctria*, which I considered most likely to be *D. schuetzeella*. I set the specimen, but then, as always when there is something interesting to do, work got in the way of pleasure. It was not until I received the note above from Alasdair Aston recording *schuetzeella* in North Hampshire, that I contrived to make time to critically examine the Hertfordshire moth and thus confirmed that it is indeed *D. schuetzeella*. This constitutes the first record of the species for Hertfordshire, and brings the county moth total to 1458 species. The larval foodplant (*Picea abies*) dominates sections of Bramfield Woods and the moth must surely be breeding there.

Also of interest during the same session was the arrival at the sheet of several examples of the tortricoid moth *Piniphila bifasciana* (Haw.).This is a pine-feeding species that is evidently quite local in its distribution. The only other Hertfordshire record available would appear to be one made at Hitchin in 1934 and included by Foster in his 1937 county list (Foster, A. H., 1937. *Trans. Herts. Nat. Hist. Soc.* **20** (4):157-280).– COLIN W. PLANT, 14 West Road, Bishops Stortford, Hertfordshire CM23 3QP (E-mail: Colinwplant@compuserve.com).

Delayed Emergence of Puss Moth *Cerura vinula* (L) (Lep.: Notodontidae)

In summer 1998, whilst sweep netting in East Field, Monks Wood NNR, I caught a large green caterpillar, which I assumed was that of a Puss Moth or related species. I reared it, in a plastic box, on Aspen *Populus tremula* and willow *Salix* species. It pupated on a piece of branch that I had put in the box with it, spinning an almost invisible cocoon, as described in various text books.

In 1999 I expected it to emerge, and inspected the box on a regular basis. At the end of the summer I assumed that the creature had died, perhaps having found life in a plastic box on top of a bookcase in my bedroom too unnatural.

On 2 June 2000, soon after I switched out my bedroom light, I was roused by a noise, which I soon traced to the plastic box. To my surprise, the moth had emerged, and was fluttering its wings. Its identity as a Puss Moth was later confirmed by my colleague Nick Greatorex-Davies, and the specimen was released in Monks Wood close to where the larva had been captured.

This moth had spent at least twenty-one months in the pupal stage. Such a long period does not appear to have been recorded in this species before, though it has been reported for the related Poplar Kitten *Furcula bifida* (Heath, J. and Emmet, A.M., 1979. *The Moths and Butterflies of Great Britain and Ireland*. **9**. Curwen).

Incidentally, this moth only survived through my lack of tidiness! I thought several times about disposing of the contents of the box on the fire, but never got round to it. Just as well, and a lesson to us all – never throw anything away!– HENRY R. ARNOLD, Windyridge, Shillow Hill, Bury, Huntingdon, Cambridgeshire.

Hazards of butterfly collecting – Juche in Burkina Faso, February 1988

In June 2000, I was inspired to write this column through the grand meeting of Kim Tweedle Dum and Kim Tweedle Doo in Pyongyang, North Korea – *Kimaraderie*, as a gifted scribe in the *Economist* put it.

February 1988 saw me descending on Ouagadougou, the capital of Burkina Faso, one of the poorest and most remote countries in the world. Ouga, as we old West Africa hands call it, is not an inspiring place for butterflies. It is on the border of the Sudan and the Sahel savannah zones and there are very few butterflies. I saw only 50 species during my month-long stay, but it was interesting that 35 of these could also be caught in our back yard in Gaborone, Botswana. The savannah zones of West Africa have very few special species, most inhabiting all the savannah zones of Africa from Senegal right to southern Africa. Why this should be so, I am not very sure. The Somali/North Kenya zone has a very rich and specialised fauna that is entirely missing from West Africa. I think that savannah territory at some time must have been almost squeezed out of West Africa by climatic changes and never re-colonised.

The small family planning association that we had come to evaluate turned out to be a very go-getting outfit. Their main immediate concern was that a large proportion of all girls in secondary schools became pregnant. But they were not allowed by law to give family planning advice to unmarried women with no children. They drew up a fine statistical profile showing that: age 16, enter high school; age 17, get pregnant; age 18, get baby and park with rural family members; age 19, complete high school – with now permissible family planning curbing further pregnancies.

The Association took their fine graphs to the new radical president's Citizens' Tribunal. They received immediate permission to offer family planning advice also to unmarried women. A fine piece of lobbying – and one that was immediately implemented. The incidence of pregnancy in Ouga's secondary schools immediately dropped steeply.

It was deemed necessary for my colleague and I to visit a remote northern province so see the barriers towards expanding the service delivery programme – cultural, logistical, and practical. It was a gruelling six-hour drive. My colleague was good enough to agree to an early start so that we were able to check many small river beds for butterflies along the way, with a signal lack of success. This is typical of the dry savannahs – unless you are in the right spot at the right time, there is nothing.

On the practical side, there are no hotels to speak of in northern Burkina Faso. We were entrusted to the excellent care of the Family Planning Association's local chairman, a charming man who was also the Regional Director of Primary Education. We had an excellent dinner, as far as local circumstances allowed. And we slept well.

The next morning we looked at what little was possible to do in family planning, which was happening in co-operation with the few medical personnel available. After lunch our host told us about his problems with primary education. He was

supervising some 120 primary schools with some 400 teachers. But he had no transport: "Sometimes I can hitch a ride with the District Commissioner when he goes on tour – and when there is space in his car".

However, our host was a resourceful person, and genuinely tried to do his best, and that under circumstances that most would consider impossible. And it was also his resourcefulness that had equipped his home with a huge bookshelf, housing a series of well-bound books – twice as many as the complete *Encyclopedia Britannica*. And this brings us back to Kim & Kim, for this was the total, unabbreviated speeches and writings of Kim il Sung, the Great Leader of the People's Democratic Republic of Korea, weighing in at about 60 kilograms of possibly the most turgid prose ever written, including three volumes on *juche*, Kim's somewhat fantastical and incomprehensible ideas about self-sufficiency (and in French). In those days both Koreas made a point of having diplomatic relations with anyone willing to accept; any country with just one Korean Embassy was a deep embarrassment to the other Korea. The books had actually been delivered in person by a senior diplomat from the North Korean Embassy, a two day journey, but on reflection it is difficult to see what more important work a North Korean diplomat might actually do in Burkina Faso. Our host agreed that the books were quite unreadable, but he still thought that it was fun having ten times the amount of printed matter than the rest of the town combined, and the book cases came for free (he had a good line in humour as well).

On the way back to Ouga the pretty Guineafowl Butterfly *Hamanumida daedalus* Fabr. was everywhere, but our brief stops yielded nothing of interest. However, the thought of our host, trying his best under impossible conditions, and with the largest set of books within 500 km, was a pleasant one.– TORBEN B. LARSEN, 5 Wilson Compound, 2811 park Avenue, Pasay City, Metro-Manila, The Philippines (E-mail: Torbenlarsen@compuserve.com).

Hazards of moth collecting – Uganda

I have read Torben Larsen's series of articles with interest and thought I should add one of my own whilst it is still fresh in my memory.

My wife, Dot, and I have enjoyed spending the last two years in the highlands of Kenya. In holidays and spare moments collecting microlepidoptera has been a delightfully absorbing interest for me. Before returning to England we decided to spend seven weeks travelling in East Africa, the first country to visit was Uganda.

We drove across the country from east to west, camping in wonderful primary forest and filling several plastazote boxes with moths. Our final destination was Murchison Falls National Park. There we decided to stay at Sambiya River Lodge, a hotel overlooking a tributary of the Victoria Nile. Like many East African hotels, the bedrooms are in self-contained "bandas" which are little chalets often modelled on

circular African huts, and these are spread out along the site so that each can enjoy the available view; the bar, restaurant and reception are in a separate block.

On our first evening I asked the manager about putting out my lamp and he said it was fine, but avoid a certain area where some friendly buffalo sometimes wander in and have a drink from the swimming pool, and he didn't want them to damage my apparatus.

The first two evenings produced some good moths, including some Nymphulinae in which I specialise, so we decided to stay a third night. This time I put out two lights, one on a sheet by the furthest banda, and the trap near the main building. After supper I strolled off to see what had come to the sheet. About 20 yards down the path I suddenly noticed, in the half light ahead of me, a large pair of horns speeding towards me. They can't have been more than six feet away so there was no time to consider the etiquette of such an occasion; instinctively I turned and fled. I can still run quite fast, but at maximum speed my control is not what is was and after some yards I stumbled and fell. I lay on the ground wondering what the next sensation would be. There was none. The buffalo had luckily hit a steel lamp-stand and this seemed to put him off his pursuit.

Dot, still drinking her tea in the bar, had heard the pounding of hooves and a yell from me and raised the alarm; the hotel staff appeared and for a while guarded me very closely!

Next morning at breakfast, the waiter told me I did the wrong thing running away, he said "Next time you are charged by a buffalo you should drop to the ground." Until next time!– DAVID AGASSIZ, 23 St James's Road, Gravesend, Kent DA11 0HF.

Lilac Beauty *Apeira syringaria* (L.) (Lep.: Geometridae): Second generation examples at Selborne, North Hampshire

Interesting notes by B. K. West (*antea*: 83) and David Brown (*antea*: 170) on second generation *Apeira syringaria* reminded me to look out some similar records of specimens from my garden light trap. There were four occurrences – 30 August 1994, 3 September 1994, 24 August 1997 and 8 September 1999. In only the last instance did I record the sex of the insect, which was male. The moths may not have had far to fly, since we grow both mauve and white lilacs here. Many more specimens are usually seen here from May to July.– ALASDAIR ASTON, Wake's Cottage, Selborne, Hampshire GU34 3JH.

Index of entomology Web sites

I have been staggered by the huge response to my January request for the electronic addresses of web sites of relevance to British Isles entomologists. A number of conclusions can be drawn from what I have received so far. First, a great many entomologists are evidently able to access the Worldwide Web or have a relative who does it for them. Second, almost everybody is confused by the vast amount of data potentially available and annoyed by the time and effort required to locate web

sites of relevance and by the non-relevant pages they have to search through to get where they want to be. Most people feel that the web is likely to prove an invaluable source of information on entomological topics if only they knew how to access it.

This reassures me that my plan is a good one. I already have a large number of addresses and I am busy visiting each of them to check if they really are what they say they are. I have not forgotten the time that my young son accessed the Spice Girls web page only to find to his disappointment (and my own *purely academic* interest!) that the spice girls featured were not the ones in the pop group! In due course, later this year with luck, I shall produce the list in these pages. I am anxious to include as many sites as possible, though inevitably the list will require updating regularly as new sites appear and some old ones cease to exist.

Meanwhile, I repeat my request for people to send me the addresses of all and any web sites that seem to have some relevance, no matter how insignificant, to British Isles entomology. If you have visited them yourself and are able to include a brief (say 30 words) summary then so much the better. - COLIN W. PLANT, 14 West Road, Bishops Stortford, Hertfordshire CM23 3QP. (E-mail Colinwplant@compuserve.com).

Not really a record of the Slender Burnished Brass breeding in Britain

The Slender Burnished Brass *Thysanoplusia orichalcea* Fabr., is a rare migrant visitor to the United Kingdom. It has not, to my knowledge, been recorded as breeding here. However, on 8 June 2000, I found a nearly fully fed caterpillar, which later developed into this pretty and characteristic moth. I must admit, however, that I did not find the caterpillar "in the wild", but in the supermarket.

On 18 May 2000, a visit to my local supermarket at Dog Kennel Hill, East Dulwich, was enlivened by the discovery of some obvious particles of frass in one of the many packets of fresh basil leaves. I opened the pack, and whilst my two-year-old daughter Verity held the leaves, I extracted a healthy-looking, bright green, striped caterpillar about 40mm long. I brought it to the attention of the grocery manager, and once it was ascertained that I was not some rascal likely to try and sue the supermarket chain, I was duly presented with the animal in the interests of science, to try and rear it.

Many of the basil leaves had been nibbled, but there were enough in the pack for it to continue feeding for a few more days in a large gauze-topped glass vase. About a week later the caterpillar was trying to spin a web on the side of the glass container, but later seemed to have vanished. Some leaves spun together with silk suggested it had pupated and sure enough the dark brown chrysalis was just visible between the greenery. The adult moth emerged on 22 June 2000.

The packet of basil leaves, in which the caterpillar was found, was labelled as having come from Spain, well within the moth's known Mediterranean distribution. Unfortunately, every time we now go into the supermarket, Verity points at the packets of fresh herbs and demands in a loud voice to look at the caterpillars.– RICHARD A. JONES, 135 Friern Road, East Dulwich, London SE22 0AZ. (E-mail: bugmanjones@hotmail.com).

RECORDS OF THE COMMA *POLYGONIA C-ALBUM* L. (LEP.: NYMPHALIDAE) IN NORTH-EAST ENGLAND FROM 1995 TO 1999

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IN A PREVIOUS paper one of us reported the remarkable improvement in the fortunes of the Comma *Polygonia c-album* L. which has occurred in Northumberland (Watsonian Vice County 67) over the period 1995-98 (Ellis, 1999). At the time there was evidence that the species was becoming re-established in the county. This view has been reinforced by further records obtained during the 1999 season, when one of us (HAE) recorded 44 adults in Northumberland. This is more than the personal total of 23 for the previous four years combined. Both the pale *hutchinsoni* Robson and normal dark forms of butterfly occurred, indicating there was a partial double brood. In addition to the adult and pupa, the ovum and larva were also found in the county, for the first time during 1999, thus verifying that the Comma is breeding in Northumberland (Ellis, 2000). Similar changes in the distribution and frequency of the Comma have occurred further south in County Durham (VC66) during the mid to late 1990s (Waller, 1997).

It therefore seems opportune at the close of the 20th century to document the present recorded distribution of the Comma in North-east England as a whole. There are now too many records to be individually listed and the data have been summarised in the accompanying distribution map (Fig. 1). For this purpose we have combined our own records for Northumberland and County Durham with those submitted by numerous other observers who regularly contribute their records to one of us (IJW) who acts as the Biological Records Centre Recorder for the counties.

The map includes all records known to us corresponding to the period 1995-99 for County Durham (VC66), South Northumberland (VC67) and North Northumberland (Cheviot, VC68). Each record is based on the presence of the species within a tetrad (2km × 2km square). Overall the Comma has been recorded in 253 tetrads within sixty-three 10km × 10km squares distributed throughout the three Vice-counties. The tetrad records tend to be concentrated towards the south-east of the region, and are less dense in the west and north. Thus only 6% of tetrads occur in VC68 compared with 37% and 57% respectively in VC67 and VC66. This distribution pattern supports our hypothesis that the Comma has become re-established from the south. However, it may well be exaggerated since there are fewer recorders active in the northernmost parts of the region (VC68).

Fig. 1 illustrates the magnitude of the change in the fortunes of the Comma compared with what is known of its previous history in the region (e.g. Cook, 1990; Ellis, 1999 & 2000). When Cook (1990) expressed the hope "that the Comma may be a more frequent sight before the end of the century", he could not possibly have imagined how widespread and relatively common the species was to become within

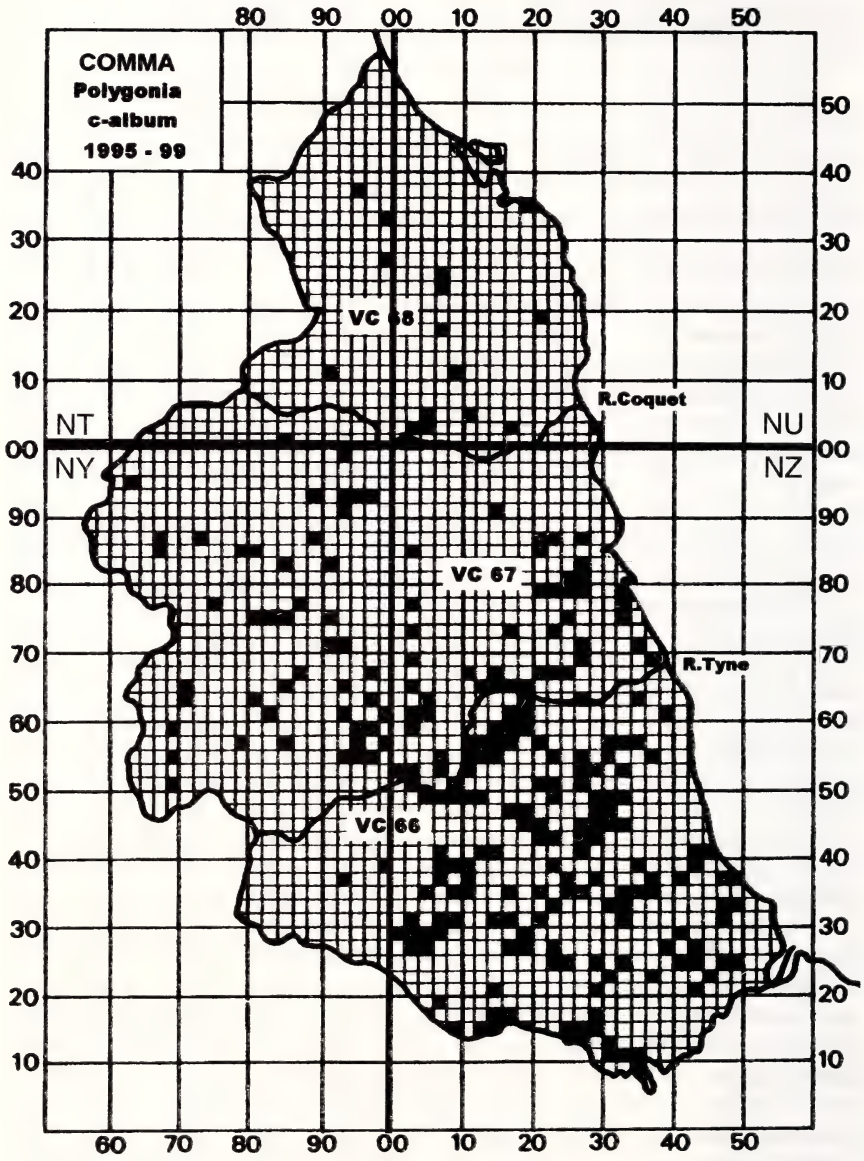

Fig. 1 Distribution map of the Comma *Polygonia C-album* L. in Durham (VC66) and Northumberland (VCs 67 & 68). The map summarises records for 1995-99. The river Tyne forms the boundary between VCs 66 & 67 in the east; the river Coquet forms the boundary between the southern and northern parts of Northumberland, VC 67 & 68 throughout.

a decade! It is truly remarkable that the Comma has recolonised North-east England so rapidly in the course of only about five years. Additionally, in that time the species has extended its range yet further northwards into Scotland (R. Buckland, pers. comm.).

It is worth mentioning that the leaves of Elm *Ulmus* trees continue to be an important foodplant for the Comma larva in North-east England. Apart from an example of a caterpillar feeding on Blackcurrant *Ribes nigrum* (Johnson, 1998) in a garden in Durham City in 1997, to date all larvae and pupae have been found on *Ulmus*.

Acknowledgements

We wish to thank all those individuals who contributed their records of the Comma as part of Butterfly Conservation's "Butterflies for the New Millennium Project".

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Bruchela rufipes (Olivier) (Col.: Urodontidae) in West Suffolk

Since its original discovery in South Essex in 1984 (Hyman, 1987, *Entomologist's mon. Mag.* **123**: 90.) *Bruchela rufipes* has been expanding its range and I have been awaiting its arrival in Suffolk.

A few months ago, Paul Lee very kindly sent me a list of beetles which he had recorded whilst carrying out a contract survey at Mildenhall Airbase for the Suffolk Wildlife Trust on behalf of the USAF. Amongst his captures was *B. rufipes* which he had swept from the grassy heath there (grid reference TL 678771), on 7 July 1999.

Whilst recording at Icklingham on 26 July 2000 I swept numerous individuals from *Reseda lutea* and *R. luteola* beside a field of Flax on the edge of the Plains (TL 7673) as well as from *R. lutea* growing on a set-aside field at Canada (TL 7775).

I thank the Earl of Iveagh and his Conservation Officer Mr. J. Rudderham for permission to record on the Elveden Estate and Paul Lee and the Suffolk Wildlife Trust for allowing me to include his unpublished record.– DAVID R. NASH, 3 Church Lane, Brantham, Suffolk CO11 1PU.

Extreme size variation in the hoverfly *Episyrphus balteatus* (Degeer) (Dip.: Syrphidae)

This very common hoverfly is particularly characteristic, with its double, black bands on tergites 3 and 4, but these abdominal markings can be extremely variable. It also varies tremendously in its size: Stubbs & Falk (1983, *British hoverflies: an illustrated identification guide*. BENHS) give a wing length of from 6 to 10.25 mm. In a collection of set specimens, such variation is easy to overlook; relative proportions and overall appearance seem much more important to the entomologist's eye. But seeing them next to each other in nature can be quite a jolt, as was brought home to me when I took the accompanying photograph. On 8 August 1997, several hogweed umbels on the wayside of a small parking place near the National Trust reserve at Frithsden Beeches (grid reference SP 998110), Buckinghamshire, were dripping with hoverflies. Many dozens of *Episyrphus balteatus*, *Scaeva pyrastri* (L.) and *Eupeodes luniger* (Mg.) were jostling together in the sultry morning warmth. After taking a few general photos I noticed two dramatically different specimens of *Episyrphus* (Figure 1). The original 35mm slide was taken at a magnification of approximately life-size; thus, the lightly-marked male, to the left, has a wing length of about 10mm, whilst the heavily-marked but diminutive female to the right has a wing length of only about 6.5mm.– RICHARD A. JONES, 135 Friern Road, East Dulwich, London SE22 0AZ. (E-mail: bugmanjones@hotmail.com).

Figure 1. Size variation in *Episyrphus balteastus* (Degeer).

TEPHRITIS MATRICARIAE (LOEW, 1844) (DIP.: TEPHRITIDAE) NEW TO BRITAIN AND BREEDING IN EAST KENT

LAURENCE CLEMONS

14 St. John's Avenue, Sittingbourne, Kent ME10 4NE.

THE CURRENT checklist of the Diptera of the British Isles (Chandler, 1998) lists seventy-three breeding species of Tephritidae together with an additional seven occasional imports. The last resident species to be discovered from field work was in 1974 when Stubbs found *Campiglossa malaris* (Séguy) at a site near Folkestone, Kent (Stubbs, 1976) and this has now extended its range within the county (Clemons, 1992, 2000; Plant & Smith, 1996). White (1986) described *Campiglossa solidaginis* (White) as new to science on the basis of museum material from Herefordshire and elsewhere, whilst Allen (1999) recorded the capture of the exotic *Bactrocera cucurbitae* (Coquillett) at light in a suburban situation in south-east London.

On 29 April 2000, I attended a meeting of the Kent Field Club at Sandwich Bay Local Nature Reserve, the major coastal sand-dune site within the county. At about 10.45 British Summer Time, during sunny and warm conditions, two specimens of *Tephritis* were swept along a narrow strip of grassland just inside the Kent Wildlife Trust Reserve and bordering the Prince's Golf Club (Ordnance Survey grid reference TR 357592, Watsonian Vice-County 15). One of these was instantly recognised as *T. vespertina* (Loew), the commonest species of the genus throughout the British Isles, and which occurred sporadically within the site surveyed later the same day. The other, a female, was clearly different being larger and with the hyaline wing spots much more pronounced, even to the unaided eye. An attempt to identify the specimen using White (1988) placed it somewhere within the *Tephritis conura-ruralis* group on the basis of wing-pattern although the colour of the oviscape was different and a dissection of the aculeus revealed it to have a small apical notch akin to that in *vespertina*. The specimen was subsequently sent to Dr Ian White at the Natural History Museum, London who in turn referred it to Dr Bernhard Merz in Geneva. Within three weeks the specimen had been identified as *Tephritis matricariae* (Loew, 1844) and returned with a covering e-mail printout from Dr Merz. He stated "The species is quite widespread and sometimes extremely common in the Mediterranean up to central Germany, but almost absent more in the north, but it was recorded from the Netherlands by van Aartsen. Its host plant in Central Europe is probably only *Crepis taraxacifolia* which is a ruderal plant along roads; I could rear the species in the Mediterranean from some other species of *Crepis* (*foetida*, *pulchra*, *rubra*, ...)".

Armed with this information Sandwich Bay was revisited on 4 June 2000 in an attempt to find more specimens and to elucidate the host plant(s) here. Sweeping the area where the original individual had been found produced more adults of *T. vespertina* and the only fruiting Asteraceae were of *Taraxacum*, most of which were spreading their achenes and hence deemed unsuitable for collection. The first

"green" capitulum of the latter examined contained a relatively large and white dipterous larva which subsequently fell to the ground and was lost and no larvae could be found in further such capitula. A short distance northwards along the Bay, numerous plants of *Crepis vesicaria* L. spp. *taraxacifolia* (Thuill.) Thell. were present and here cautious splitting of some of the seeding capitula revealed dipterous larvae orientated head-down and parallel with the achenes. A collection of seed heads was made and, on returning home, these were spread over a layer of kitchen-roll in an open seed tray to minimise the risk of mould development. By 9 June, seven puparia had formed on the paper and these were transferred to an aerated glass tube containing a wad of tissue paper. The remainder of the capitula were placed within a plastic confectionery container. Between 22 and 24 June, nine males and seven females emerged from both sets of material, the isolated puparia eclosing first. It would appear that the larvae developing in *Crepis vesicaria* are non cecidogenous and feed on the achenes of the host-plant, pupating externally before the fruits are dispersed by the wind.

On 12 July 2000, *T. matricariae* was discovered some 19 kilometres west of Sandwich. On that date, whilst involved in a year 9 ladybird survey within the grounds of St. Anselm's Catholic School, Canterbury (TR 162561), Miss Sarah Dean presented me with a male swept from a hawthorn *Crataegus monogyna* hedge. The adjoining area had been heavily mown and no Asteraceae were visible, although evidence that suitable host-plants must grow nearby came the following day when a single female of *Dioxyna bidentis* (Rob. -Des.) (Tephritidae) was swept from the same hedge. On 26 July 2000, adults were found to be numerous at Cherry Garden Hill, near Folkestone (TR 209382). The site is largely open and grazed, south-facing chalk downland and as the species could only be found in areas where *Crepis capillaris* (L.) Wallr. was growing, it is likely that this plant is an alternative host here as in France (Séguy, 1934 as *Crepis virens* L.). On 30 July 2000, Mr Norman Heal tubed two males (one teneral) as we were recording insects at Lydden LNR near Dover (TR 286447). The latter site is also south-facing chalk downland, but with a much more rank ground flora. Again *Crepis capillaris* seemed the likely host especially as a small Diptera larva was discovered feeding on the achenes of one capitulum examined. A small collection of *Capitula* was made and on 3 and 4 August 2000 one male and one female respectively emerged. Finally, on 28 August 2000, a further female was swept from an area of chalk downland at Round Hill, Folkestone (TR 220383).

Identification

Tephritis matricariae closely resembles *T. conura* (Loew, 1844) and both species were keyed at the same number by Hendel (1927) and Séguy (1934). In Britain, *T. conura* is a northern and western species, mainly associated with *Cirsium* spp. The key to the British species of *Tephritis* by White (1988) may be modified to accommodate *matricariae* thus:

8 Crossvein r-m with adjacent small hyaline spots next to vein R4+5, but not M 8a

8a Larger; WL = 4.6-5.7mm. Posterior notopleural seta dark brown to black. Oviscape orange to dark orange, black at apex. Aculeus apex pointed..... ***conura*** (Loew)

8b Smaller; WL = 3.3-4.5mm. Posterior notopleural seta pale. Oviscape black with orange side-patches. Aculeus with an apical notch..... ***matricariae*** (Loew)

– Crossvein r-m with adjacent small hyaline spots next to both veins R4+5 and M etc. ..... ***ruralis*** (Loew)

A more detailed description based on the reared material is given below.

Head: antennae, proboscis and palpi entirely orange; upper orbits and lunule silvery-grey dusted; ocellar triangle and occiput darker grey.

Thorax: dorsum grey-dusted, covered with small pale scale-like setulae and with faint brown lines in the acrostichal, dorsocentral and intra-alar areas (distinct when viewed in sunlight); postpronotal lobe with orange ground colour; a single long black postpronotal seta; two notopleural setae, anterior long and black, posterior short, pale and scale-like becoming orange towards the base; two pairs of long, black postsutural dorsocentral setae, anterior very close to suture; presutural, anterior and posterior supra alar and intra alar setae long and black; two pairs of long, black scutellar setae, apical pair less than half length of basal pair; halteres orange.

Wings: length in male 3.3-4.3 mm (n = 10, mean = 3.67 mm), in female 3.5-4.5 mm (n = 8, mean = 3.98 mm); three hyaline spots in cell R1, two small hyaline spots at proximal and distal sides of the upper end of r-m (in some specimens there are traces of hyaline spots at the lower end of r-m); apical hyaline spot large, broadest along costa (fig. 1).

Abdomen: grey dusted, tergite 1+2 with narrow orange side patches; tergites 3-6 entirely covered with small, pale, scale-like setulae; oviscape black with broad orange side patches (fig. 2).

Legs (including coxae): orange, usually with faint dark anteroventral stripe on hind femora.

Puparium: approximately 3.4mm x 1.5mm ; entirely dark brown; cephalopharyngeal skeleton as in fig. 3.

Distribution

Tephritis matricariae is largely a Mediterranean species and Foote (1984) simply gave Southern Europe, Turkey and Egypt. Séguy (1934), on the other hand, was much more specific, listing it from Apt, Bicêtre, Cannes, Chérence, Clamart, Corse, Fontainebleau, Hyéres, Lannemezan, Marseille, Meudon, Mont-de-Marsan, Rambouillet, Royan, Saclas, Saint-Sever and Var in France and also Macedonia, Constantinople and Algeria. Van Aartsen (1992) recorded it from Colmont and

Maastricht in the Netherlands and Merz (1994) from Jura, Mittelland, Wallis and Tessin in Switzerland. In the Natural History Museum, London there are specimens from Crete: Aghii Galini, Alikiandu, Alymyrida, Georgioupolis, Geropotamos Estuary, Gonies, Kastelli, Knossus and Rodopon; Corfu: Agios Georgios, Ayia Kiriahi, Glifada, Kaiser's Throne, Lake Korission and Perouli; Corsica: Cateraggio and Etang de Dianne; France: Airaines, Barèges, Montesquien, Peyreleau, St. Paul and Veyreau; Georgia: Kazbegi; Macedonia: Prespa Geul; Montenegro: Kolasin; Morocco: Mikadane and Mouyougou; Spain: Albarracín, Huseca, Ibiza, Jaraco, Lanyaron and Zaragoza; Switzerland: Aigle.

Figure 1. *Tephritis matricariae* - right wing of female.

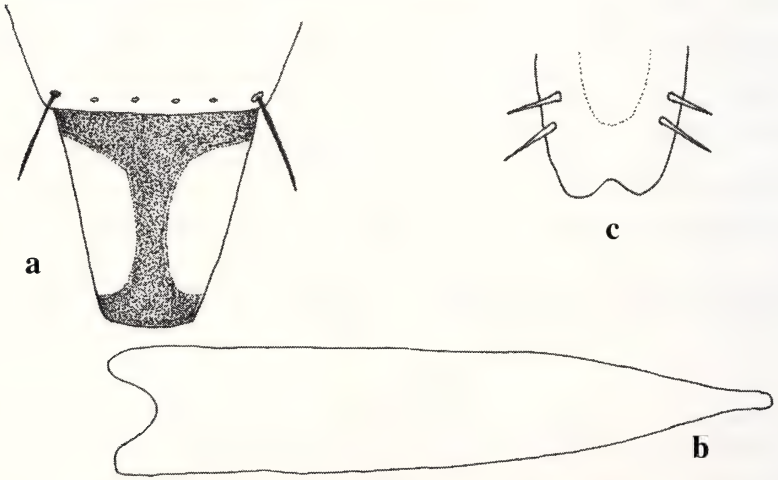

Figure 2. *Tephritis matricariae* - female post-abdomen. a: dorsal view of oviscape showing extent of orange side patches; b: dorsal view of outline of aculeus; c: dorsal view of detail of apex of aculeus.

Given the widespread distribution of *T. matricariae* in the Western Palaearctic it is not surprising that it should eventually be found in Britain although Niblett (1939) did not include it in his list of predicted additions to our fauna. Exactly when the species first arrived here must, in the absence of other records, be a matter for conjecture.

Acknowledgements

In addition to Dr. Bernhard Merz, who identified the original specimen, I am grateful to Dr. Ian White for passing on the latter and for permitting access to the collections in the Natural History Museum, London and to the Kent Wildlife Trust and the White Cliffs Countryside Project for permission to collect on land under their management. Mr. Geoffrey Kitchener advised as to the correct nomenclature of the species of *Crepis*.

Specimens of the reared material have been deposited in the collections of the British Entomological and Natural History Society at Dinton Pastures, Berkshire, in Liverpool Museum and in the Natural History Museum, South Kensington, London.

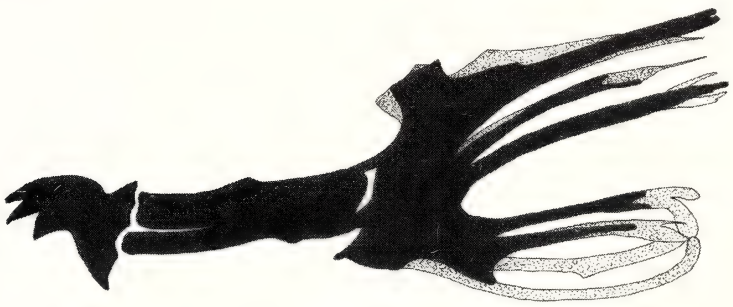

Figure 3. *Tephritis matricariae* - cephalopharyngeal skeleton from puparium.

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BOOK REVIEWS

A fly for the prosecution: How insect evidence helps solve crimes by **M. Lee Goff.** 226 pp., several line drawings in text. 237 x 160 mm., hardbound. ISBN 0 674 00220 2. Harvard University Press, 2000. £15.50.

Generally speaking I am not a great one for the personalised American style of writing, though that is just a personal preference. However, after reading the introductory chapter of Dr Goff's book I was immediately hooked. Unfortunately, work commitments prevented me from continuing the read through for several weeks until I sat down one evening to watch the television with my two offspring. The programme we were watching was concerned with forensic aspects of murder investigations. Suddenly, there on the screen before me was Dr Goff – who is Professor of Entomology at the University of Hawaii, and Consultant in Forensic Entomology to the Honolulu Medical Examiner – extolling the virtues of maggots as agents for solving the difficult problem of placing a time of death on the badly decomposed body of a murder victim. The programme was fascinating and I determined to pick up the book again. I did so the next day, and every quickly found the same case history there that had been presented on the television the night before. The few discrepancies I put down to poor video-editing!

The book is full of case-histories in which insects, in one form or another, have helped convict murderers in Hawaii. In particular, the use of insects to calculate the post-mortem interval (time lapse between death and discovery), is emphasised. The process is not simply a matter of knowing how long a particular fly larva on the body has been there. The interval is complicated by factors such as how long it takes a particular species of fly to actually find the body, and how is this period affected by seasonal temperature variation, by whether the body is naked, or completely wrapped or by other factors. In many cases, the answer to a particular problem may not be known and Dr Goff describes the experiments performed to find out. These generally tend to involve obtaining a dead pig and using it in his garden to duplicate the situation in which the body was found. And my neighbours think I am weird!

Dating decomposed bodies is not the only use of insects in forensic entomology. Maggots taken from a body can be analysed for poisons, for example. Personally, however, I particularly liked the case in which the remains of a grasshopper were found with a body. The grasshopper was missing its left hind leg; nobody gave the insect any great thought, but it was routinely collected in any event. When the suspect was caught and searched, the left hind leg of a grasshopper was found in his trouser turn-up. Microscopy showed that the fracture on leg and insect matched perfectly! The suspect was subsequently convicted.

Although somewhat autobiographical, the book is a serious attempt at enlightenment, aimed at the various law-enforcement agencies around the world that are not aware of the great benefits of forensic entomology.

It is not a text book, but it is a jolly good read in which a great wealth of factual information is effortlessly transferred from page to brain. The considerable enthusiasm of Lee Goff, who clearly loves his job as much as his Harley-Davidson motor-cycle, is evident throughout. As Christmas approaches yet again, I can thoroughly recommend this book to anyone with even a passing interest in insects.

Colin W. Plant

Also received . . .

A checklist of the butterflies and larger moths of Cumbria edited by **Bill Kydd** and **Stephen Hewitt.** 44 pp., A5, folded and stapled. Published by Carlisle City Council from the Tullie House Museum, Castle Street, Carlisle, 2000. £3.

Cumbria consists of the Vice-counties of Westmorland (VC 69) and Cumberland (VC 70), together with a small part of North-west Yorkshire (VC 65). The checklist is presented in "log Book" order and the year of the latest record is given for each of these three Vice-counties. National status and status in Cumbria are also given. Although provisional, this is an essential work of reference for anyone interested in butterflies and moths in north-west England.

The Pioneers of the research on the insects of Dalmatia by **Guido Nonveiller.** 390 pp, 66 text figures. 240 x 170 mm, softback. Croatian Natural History Museum, Zagreb, 1999. ISBN 953-6645-04-1.

This is the first English translation of a work that was originally published in 1989. The Dalmatian coastline of Croatia will be familiar to some readers as a one-time holiday location, though recent troubles have meant that few English people are likely to go there at present. This book is a scholarly summary of the history of entomology of that region of the former Socialist Federal Republic of Yugoslavia, presented as a comprehensive series of 60 biographies of Dalmatian entomologists, 38 of entomologists from neighbouring countries and 274 of foreign entomologists (including three Britons: S. M. Saunders – Hymenoptera, M. Nicholl – Lepidoptera, M. Burr – Orthoptera). There is also a useful chapter entitled "The knowledge on insects of Dalmatia on the eve of Word War II". Though there is little on actual entomology, the book is a very useful reference work for anyone collecting or recording in the region.

The Birder's Bug Book by **Gilbert Waldbauer.** 290 pp., 38 colour photographs. 220 x 155 mm, softback. ISBN 0 674 00206 7. Harvard University Press, 2000. £10.50.

This is the paperback version of the hardbound volume that was reviewed in *Ent. Rec.* **111**: 47 and which sells at £17.50.

Millions of Monarchs, bunches of beetles: how bugs find strength in numbers by **Gilbert Waldbauer.** 264 pp., 240 x 155 mm., hardbound. ISBN 0 674 00090 0. Harvard University Press, 2000. £15.50

Although some may find the personalised approach of the American author difficult, this book nevertheless contains a wealth of useful information on how insects have become so successful through sheer strength of numbers. In spite of the fact that the examples used are all from the Nearctic Region, the book would make excellent background reading for someone studying for an A-level in Environmental Science or a related subject and could be considered as an interesting Christmas present for almost anyone who has an interest in insects at a non-professional level.

Food webs and container habitats: The natural history of the Phytotelmata by **R. L. Kitching.** 432 pp., 235 x 155 mm, hardbound. ISBN 0 521 77316 4. Cambridge University Press, 2000. £65.

The term "Phytotelmata" was coined in 1928 by the German biologist Ludwig Varga to include all the aquatic habitats that occur as plant-based containers, the most familiar of which are surely the pitcher plants. This new book by Roger Kitching, Professor of Ecology at Griffith University, Brisbane, Australia, is a comprehensive study of these plant container habitats. Five principal types occur – bromeliad "tanks", pitcher plants, water-filled tree holes, bamboo internodes and axil waters collected by leaves, bracts or petals; of these at least numbers three and five will surely interest British readers. The aquatic fauna associated with these five principal habitats ranges from the unicellular Protozoa right up to Odonata and amphibians, though inevitably, few of the examples given are from Britain, in spite of the author being an Englishman.

This is an important reference work, but one which is nevertheless written in an easy style. It is recommended reading for anyone with an interest in aquatic ecosystems.

Insect predator-prey dynamics: ladybird beetles and biological control by **A. F. G. Dixon.** 258 pp., 235 x 155 mm., hardbound. ISBN 0 521 62203 4. Cambridge University Press, 2000. £45.

Much of our understanding of insect predator – prey dynamics is based on studies of insect parasitoids. In this book, Dixon, who is Emeritus Professor of Biological Sciences at the University of East Anglia, examines true predators – the ladybirds – to establish if they operate in a similar way and to explore how this affects their use in biological control. The work explores the basic biology of ladybirds, their association with their prey and its effect upon development rate and body size. Optimal foraging theory, field observation and laboratory experiments are used to illustrate how ladybird larvae maximise their rate of energy intake and adults their fitness. The inter-dependence of these life-history parameters is used to develop a predator – prey model which highlights the specific attributes of potentially successful biocontrol agents.

Milton Keynes: More than just concrete cows. compiled by the **Milton Keynes Natural History Society.** 96 pp., 230 x 170 mm., softback. ISBN 0 953 8787 0 8. Milton Keynes Natural History Society, 2000. Available from the Society at The Hanson Environmental Study Centre, Wolverton Road, Great Linford, Milton Keynes MK14 5AH. £3.99 retail: £3.00 if ordered direct from the society.

It was a recently as thirty years ago that Milton Keynes did not exist, other than as a drawing in the planning offices of a development destined to be realised on what was then an agricultural landscape. This compilation of all currently known records of flora and fauna in the Milton Keynes area, presented alphabetically within each of the major groups, is therefore surely a major work of reference not only for anyone interested in this general area of Britain, but also for ecologists, ecological consultancies and town planners involved in the design of new settlements and others besides. The natural history society is to be congratulated for undertaking such a major task.

A NEW RECORDING SCHEME LEAF-MINING LEPIDOPTERA

Following the success of the National Pyralid and Plume Recording Scheme run by Tony Davis, a new national recording scheme, covering the leaf-mining species of Lepidoptera, has been set up. At the helm is Martin Ellis. The scheme covers all of the leaf-mining families of moths as well as the Micropterigidae, Eriocraniidae and Opostegidae. The full list of families covered by the scheme, is as follows:

Family	B & F Log Book Number	Family	B & F Log Book Number
Micropterigidae	1 — 5	Lyonetiidae	254 — 264
Eriocraniidae	6 — 13	Bucculatricidae	265 — 276
Nepticulidae	19 — 118	Gracillariidae	280 — 369
Opostegidae	119 — 122	(includes old Phyllocnistidae)	
Tischeriidae	123 — 127	Douglasiidae	398 — 399
Heliozelidae	154 — 159	Elachistidae	590 — 633

Records of all species within these families are sought from the whole of the British Isles. It would help if records could be submitted by site, rather than by species, although all records are, of course, wanted. A grid reference, preferably to four figures (one-kilometre square), as well as the vice-county name (or number) is needed for each site, please.

For further information on this new scheme, or to submit records, readers are invited to contact the organiser.

MARTIN ELLIS
14 Great Ostry, Shepton Mallet, Somerset, BA4 5TT E-mail: mjellis@tesco.net

AFRAID TO WRITE?

Have you discovered something that might be of interest to other entomologists, but are a little unsure if it is really worth printing? Or perhaps you think it is worth putting into print and are just not sure how to go about it?

If so, then this journal would like to hear from you. Almost all discoveries are of some interest – no matter how small. Very often an isolated observation can become more important when put with others.

In addition to the peer-reviewed papers, this journal also accepts shorter notes on the basis of their content, and has no interest whether the author is a professor of entomology or a road sweeper, nor in whether he or she can write perfect English. You do not have to have a computer to contribute – although we certainly do prefer contributions on disk or by e-mail. This should in no way put you off if all you have is an ancient typewriter. We even accept contributions that are hand-written if there is really no alternative. We will rewrite the note, if necessary, to conform to the house style. At present moment you will rarely have to wait for more than two months to see your name in print. If notes are not suitable for this journal, we can advise you of an alternative and forward them for you.

The main thrust of this journal is British moths (macro and micro) and butterflies, but we also carry material on beetles and other groups. European information of interest to British readers is also considered.

The Editor is always pleased to discuss potential contributions with first time authors and others and welcomes telephone calls on 01279 507697 (daytime or evenings up to about 10pm). The editorial address is printed inside the front cover of this issue.

The Amateur Entomologists' Society

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Announcements

THE ENTOMOLOGIST'S RECORD

AND JOURNAL OF VARIATION

(Founded by J.W. TUTT on 15th April 1890)

Contents

Notes and observations

Continued on inside back cover

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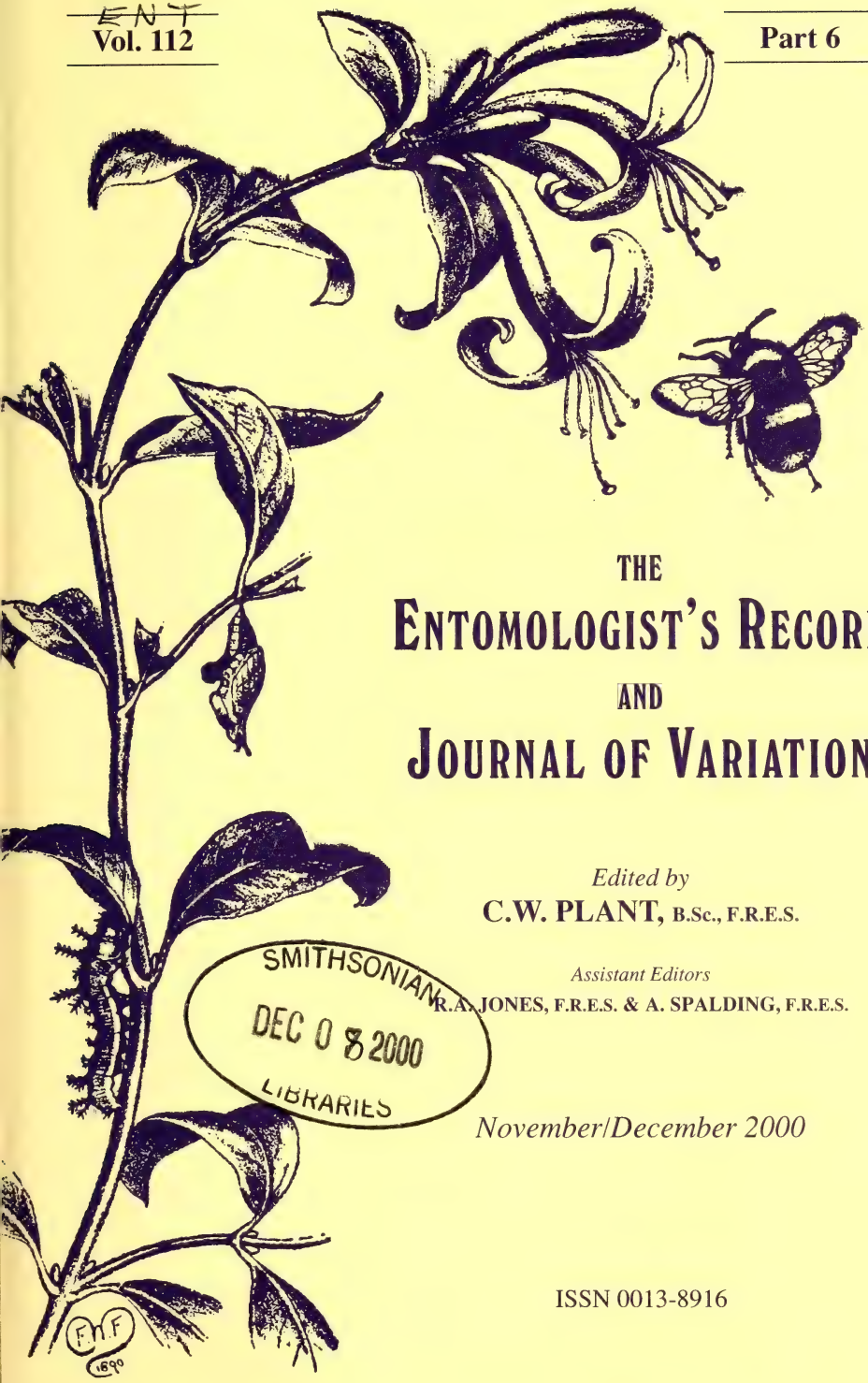

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The preferred method of submission is by e-mail or on floppy disk – even for very short articles. However, we acknowledge that these facilities are not available to everyone and we also accept typed or hand-written manuscripts.

E-mailed contributions are best sent as binary attachments so that formatting is preserved. **Disks** must be PC compatible and the file format must be readable by Word 2000. A single paper copy should accompany disks. In both cases contributions should employ correct use of capital letters, bold and italic type etc and should be single spaced. Leave a single line of space between paragraphs and do not indent the first line. Pay particular attention to the style and punctuation in lists of references. **Typed or hand-written texts** should not use bold or italic. Please underline words to be set in italic and leave the bold type to us; please double space lines so that editorial marks can be added for the typesetter. Only type on one side of the paper. We require two copies of paper contributions: a photocopy is acceptable for the second copy. **In all cases**, we require the originals of photographs, drawings etc.; these will be returned after publication.

All authors should refer to this issue as a guide, particularly with regard to the format of dates, lists of references and lists of species. Names of British Lepidoptera should follow Bradley, J.D. (1998. *A checklist of Lepidoptera recorded from the British Isles*) and authors of species names should be given at the first mention. A full list of instructions may be obtained by sending a stamped addressed envelope marked "Ent. Rec. Guidelines" to the Editor.

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THE IMMIGRATION OF LEPIDOPTERA TO THE BRITISH ISLES IN 1998

BERNARD SKINNER[1] AND GRAHAM A. COLLINS[2]

[1] *5 Rawlins Close, South Croydon, Surrey CR2 8JS.*

[2] *15 Hurst Way, South Croydon, Surrey CR2 7AP.*

In 1998 lepidopterists experienced some of the poorest moth-trap catches of both resident and immigrant species seen this decade. Unfavourable weather was probably the prime cause, but even on seemingly "good" nights trap attendances were frequently abysmally low. Fortunately, even in the poorest years there are always a few species that manage to prosper and in 1998 one of these was *Tebenna micalis* Mann. A number of both larvae and adults were reported in Devon and Co. Cork in 1982, but normally this micro species, which is associated with common fleabane *Pulicaria dysenterica*, is a rather rare visitor. However, during the latter half of the summer there were many sightings of adults and evidence of larval feeding in south-west England and south-west Wales, and even adults in south-west Scotland.

The only new addition to the British Isles was *Herpetogramma licarsialis* (Walk.); an example was captured at light in the Isle of Wight in early November. It is a fairly large pyrale not too dissimilar to the Mother of Pearl *Pleuroptyna ruralis* (Scop.). Most notable amongst the macrolepidoptera were the third British capture of Porter's Rustic *Athetis hospes* (Freyer) taken in the Isles of Scilly on the last day of August and an example of Lesser Belle *Colobochyla salicalis* (D. & S.) from the Norfolk coast on 23 June. This species was formerly resident near Hamstreet, East Kent, but has not been noted since 1977. Until now the only indication that it might occasionally migrate was a record from South Devon in 1965.

In the hope of aiding the compilation of the immigration reports for future years and enabling a quicker publication it is requested that records should be stated clearly with as full details as possible and ideally the Watsonian vice-county should be given. If it is not possible to give the vice-county, a six figure grid-reference would aid the placing of the record within a vice-county at the compilation stage. The dates given for the records should be the day of the sighting, or if from a light trap it should be the date of the evening that the trap was operated.

The species listed in the annexes are laid out following Bradley (1998). Several records were supplied by more than one contributor and it is possible that some duplication of records has occurred, although every effort was made to eliminate this. The abbreviations listed below are used in Annex 1.

Abbreviations

E	Exotic introduction/escape
I	Primary immigrants
In	Introduction (including importations)
R	Resident
R(t)	Temporary resident
V	Vagrant/wanderer

ANNEX 1: RECORDS OF "SCARCER" SPECIES

CHOREUTIDAE

***Tebenna micalis* (Mann) [I/R(t)]**

W. CORNWALL [**1**] St Agnes, Scilly, 19.6, 2.9 (Hale and Hicks, 1999); South Milton Sands (SX6741), 27.7 larva; Porthallow (SW7923), 1.8 larva; Mayon Cliff, (SW3425), 4.8 larva; Porthgwarra (SW3721), 4.8 pupa; Sennen (SW3526), 4.8 larva (BPH). E. CORNWALL [**2**] Tregantle, 31.7, c.30 larvae; Freathy, 31.7, c.12 larvae (RJH). S. DEVON [**3**] Heybrook Bay, 27.7, 30 larvae and an adult, 4.8, 14 larvae; Wembury, 28.7, 49 larvae; Plympton, 31.7, larvae; Clumpfield Plantation, 2.8, 3 larvae; Plymouth, 2.8, feeding signs; Saltram, 10.8, 90 larvae and 2 adults; Chelson Meadow, 10.8, 6 larvae; Bovey Heathfield, 12.8, feeding signs; Plymstock, 14.8, feeding signs; Venton Cross, 15.8, feeding signs; Totnes, 15.8, feeding signs; Stantyway, 22.8, feeding signs (RJH); Abbotskerswell (SX8568), 30.7 larva, 4.9 adult, 9.9 larva; Colyton (SY2494), 12.9 larva (BPH). N. DEVON [**4**] Barnstaple, 6.8, c.12 larvae (RJH). S. SOMERSET [**5**] Brakeley Steps, Selworthy, 8.8, 22+ larvae (RJH). DORSET [**9**] Portland 4.7, 15.8 larval signs and a pupa, 19.8 (2), 29.8 many (MC); Corfe Castle, 19.9, larva, Cogden Beach, 19.9, larva (RJH). PEMBROKE [**45**] Skomer Island, 24.6, 4.9 larval spinnings (Littlewood, 1999b). KIRKCUDBRIGHT [**73**] Abbey Burn Foot (NX7444), 21.6 (3) (Plant, 1999).

OECOPHORIDAE

***Ethmia bipunctella* (Fab.) [I?/V?]**

DORSET [**9**] Portland Bird Observatory, 14.8 (MC).

TORTRICIDAE

***Eupoecilia ambiguella* (Hb.) [I]**

DORSET [**9**] The Grove, Portland, 11.8 (MC); Durlston, August (Davey, 1999).

***Cydia amplana* (Hb.) [I]**

DORSET [**9**] Portland Bird Observatory, 31.8-3.9 (5) (MC).

PYRALIDAE

***Euchromius ocellea* (Haw.) [I]**

W. CORNWALL [**1**] Penrose, 15-19.2 (3) (RH); St Agnes, Scilly, 25.2 (Hale and Hicks, 1999). DORSET [**9**] Portland Bird Observatory, 24.2, 17.3 (MC). S. HANTS [**11**] Fareham, 14.5 (RD). E. SUSSEX [**14**] Rye Harbour, 23.2 (PT). E. KENT [**15**] Tenterden, 29.3 (G. Hollamby). CAERNARVON [**49**] Bangor, 10.1 and 24.2 (Brown, 1998a, 1998b). W. LANCASTER [**60**] Lightfoot Green, Preston (SD5133), 14.2 (2) (SMP).

***Evergestis extimalis* (Scop.) [I?/R?]**

DORSET [**9**] Portland Bird Observatory, 11.8 (MC).
CHANNEL ISLANDS Guernsey: L'Ancresse, 12 and 19.6 (RA); Le Chêne, 19.8 (TNDP); St John, 30.8 (RA) (Austin, 1999).

***Loxostege sticticalis* (L.) [I]**

W. CORNWALL [**1**] St Agnes, 31.8 (4), 1.9 (2) (Hale and Hicks, 1999). S. WILTS [**8**] Sutton Veny (ST8942), 24.9 (FDL).

***Sitochroa palealis* (D. & S.) [I?/R?/R(t)?]**

S. DEVON [**3**] Abbotskerswell (SX8568), 28.7 (BPH); Rousden (SY2990), 13.8 (RFM); Thatcher Point, Torquay (SX9463), 18.8 (RFM). S. WILTS. [**8**] Horse Down, Tilshead

(SU0247), 25.7 (GAC); (SU0348), 27.7 (RFM). DORSET [**9**] Portland Bird Observatory, 9.7-17.8 (11) (MC). IOW [**10**] Binstead, 23.7 (BW); Freshwater, 4.8; Cranmore, 10.8 (SAK-J). N. HANTS [**12**] Sparsholt, 21.7-11.8 (7) (RAB). E. SUSSEX [**14**] Rye Harbour (TQ9418), 8.8 (5) (JHC). E. KENT [**15**] Dungeness, 5.7, 26.7, 31.7 (DW); Littlestone, 26.7 (KR); New Romney, 28.7 (SPC). SURREY [**17**] Field Common, West Molesey (TQ1367), 24.6 (GAC); Featherbed Lane, Addington (TQ3762), 31.7 (GAC). WARWICK [**38**] Bishop's Bowl Lakes, Southam (SP3858), 10.7 (GAC). PEMBROKE [**45**] Skomer Island, 10.8 (Littlewood, 1999b). N. LINCS [**54**] Gibraltar Point, 28.6 (Wilson, 1999).
CHANNEL ISLANDS Guernsey: Le Chêne, 2.8 (TNDP per Austin, 1999).

***Ostrinia nubilalis* (Hb.) [I?/R?/R(t)?]**
W. CORNWALL [**1**] St Agnes, Scilly, 31.8 (Hale and Hicks, 1999); Lizard, 27.9 (MT). N. SOMERSET [**6**] Berrow, 29.11, larvae in stems of *Artemisia vulgaris* (RJH). DORSET [**9**] Portland Bird Observatory, 9.7 (MC). IOW [**10**] Freshwater, 9.7, 17.7 (SAK-J). E. SUFFOLK [**25**] Westleton, 5.7, 8.7 (BLS); Kelsale (TM4064), 19.7 (JHC). E. NORFOLK [**27**] Eccles-on-Sea (TG4128), 27 and 28.7, 7.8 (Bowman, 1999). N. LINCS [**54**] Gibraltar Point, 28.9 (Wilson, 1999).

***Phlyctaenia perlucidalis* (Hb.) [I]**
E. SUSSEX [**14**] Icklesham, 19.6 (3) (IH and PJ).

***Psammotis pulveralis* (Hb.) [I]**
E. KENT [**15**] New Romney, 19.7 (2), 20.7 (3) (KR); Dungeness, 20.7 (TR and DW).

***Phlyctaenia stachydalis* (Germar) [I?]**
E. SUSSEX [**14**] Rye Harbour, 30.6 (PP).

***Udea fulvalis* (Hb.) [I?/R(t)?]**
IOW [**10**] Freshwater, 26.7, 6.8, 8.8, 12.8 (SAK-J).

***Herpetogramma licarsialis* (Walk.) [I]**
IOW [**10**] Freshwater, 9.11 (SAK-J). **New to Britain**

***Antigastra catalaunalis* (Dup.) [I]**
W. CORNWALL [**1**] St Marys, Scilly (SV9011), 28.9 (CT). DORSET [**9**] West Bexington, August (Davey, 1999).

***Diasemia reticularis* (L.) [I]**
DORSET [**9**] West Bexington, 26.7 (R. Eden per Davey, 1999).

***Diasemiopsis ramburialis* (Dup.) [I]**
W. CORNWALL [**1**] Penrose, 3.9 (RH per Tunmore, 1999); St Agnes, Scilly, 21.9, 25.9, 15.10 (Hale and Hicks, 1999); Falmouth (SW7829), 26.10 (JHC). DORSET [**9**] Gaunts Common, 19.9 (Davey, 1999). W. SUSSEX [**13**] Kingston, 11.8 (SP). E. SUSSEX [**14**] Icklesham, c.30.8 (IH). GLAMORGAN [**41**] Pitton, 28.9 (Warmsley per Anon., 1999). CAERNARVON [**49**] Bangor 2.9 (Brown per Anon., 1999). N. LINCS [**54**] Willingham Forest (TF1389), 20.9 (CS).

***Hymenia recurvalis* (Fab.) [I]**
E. SUSSEX [**14**] Rye Harbour (TQ9317), 8.8 (JHC).

***Pleuroptera ruralis* (Scop.) [I?/V?]**
ZETLAND [**112**] Eswick, 28.7 (Pennington & Rogers, 1999).

***Palpita unionalis* (Hb.) [I]**
W. CORNWALL [**1**] Kennack Sands (SW7416), 2.8 (BPH); Lizard, 27.9, 9 and 10.10 (MT); Coverack, 16.10 (2) (MT), 16 others in September and October (Tunmore, 1999). S. DEVON [**3**] Teignmouth (SX9473), mid-August (RFM); Abbotskerswell (SX8568), 21.9 (BPH); Bere Alston (SX4467), 25.9 (RWB); Torquay (SX9463), 27.9 (BD). DORSET [**9**] Portland Bird Observatory, 6-25.7 (3), 25-26.9 (2) (MC). IOW [**10**] Freshwater, 22-28.9 (5) (SAK-J); Binstead, 25.9 (BW). W. SUSSEX [**13**] Walberton, 30.9, 9.10 (JTR). E. SUSSEX [**14**] Peacehaven, 18-20.9 (3) (CRP); Rye, 27.9 (PP and PT). E. KENT [**15**] Densole, 25.9 (TR); Folkestone Warren, 25.9 (TR); Kingsgate, 23.10 (2); Ramsgate, 23.10 (Solly, 1999). S. ESSEX [**18**] Bradwell-on-Sea, 25-30.9 (4) (Dewick, 1999). N. ESSEX [**19**] Wrabness (TM2031), 25.9 (P. Smith per BG). E. SUFFOLK [**25**] Felixstowe, 26.9 (Odin, 1999). IOM [**71**] Claughbane Ramsey (SC4493), 22.6, 10.7 (CW).
CHANNEL ISLANDS Guernsey: Le Chêne, 2.8 (2) (TNDP per Austin, 1999).

***Orthopygia glaucinalis* (L.) [I?/V?]**
IOM [**71**] Claughbane Ramsey (SC4493), 30.8 (CW). First Manx record.

***Conobathra tumidana* (D. & S.) [I?]**
DORSET [**9**] Durlston, August; West Bexington, August (Davey, 1999); Portland Bird Observatory, 1.9 (2) (MC).

***Sciota hostilis* (Steph.) [I?]**
E. KENT [**15**] New Romney, 20.6 (KR).

***Sciota adelphella* (F.v.R.) [I?/R(t)?]**
E. KENT [**15**] Densole, 14.7 (TR). N. ESSEX [**19**] Dovercourt (TM2230), 11.8 (BG).

***Dioryctria abietella* (D. & S.) [I?]**
DORSET [**9**] Portland Bird Observatory, 11.8 (MC). N. HANTS [**12**] Selborne, 3.7 (AA). SURREY [**17**] South Croydon (TQ3363), 5.7 (GAC). N. LINCS [**54**] Gibraltar Point, 28.6 (Wilson, 1999). CHESTER [**58**] Thurstaston Country Park, Wirral (SJ2383), 15.8 (DJP & IFS).

***Vitula biviella* (Zell.) [I?/R(t)?]**
E. KENT [**15**] Lydd, 5.7-26.7 (4) (KR).

PAPILIONIDAE

***Papilio machaon* (L.) Swallowtail [In/I?]**
W. SUSSEX [**13**] Birdham, 12.8 (R. Tell per CRP).
CHANNEL ISLANDS Guernsey: Fosse Andree, 10.7; Beau Sejour, 12.8 (L. Thomson per Austin, 1999).

***Iphiclides podalirius* (L.) Scarce Swallowtail [In/I?]**
CHANNEL ISLANDS Guernsey: Arculon Lane, 5.8 (V. Webb per Austin, 1999).

PIERIDAE

***Colias hyale* (L.)/*alfacariensis* Berger "Pale" Clouded Yellow**
E. SUSSEX [**14**] Cuckmere Valley, 1.8, 2.9, "without black borders to hindwings", vouchers not retained (P. Wilson per CRP).

***Colias croceus* (Geoff.) Clouded Yellow [I/R(t)]**
W. CORNWALL [**1**] St Agnes, Scilly, 19-20.6 (Hale and Hicks, 1999); Porthallow (SW7923), 1.8 (BPH); Truro (SW8245), 5.8, 14.8, 22.9; (SW8443), late August, several dozen; Porthleven

(SW6325), 11.8 (6+); Prussia Cove (SW5527), 30.8 (6+); Godrevy Head (SW5527), 30.8 (13+) (RDP); Coverack, 13.9 (30+) (CH); Drift Reservoir, Penzance (SW4329), 17.9 (6) (RDP). E. CORNWALL [**2**] Tintagel (SX0586), 20.9 (RDP). S. DEVON [**3**] Colaton Raleigh Common (SY0587), 20.6 (per RFM); Thurlestone, 20.6, 30.8, 20.9 (BPH); Bere Alston (SX4467), 20.6, 21.6, 28.8 (2), 19.9; Tavistock, 30.6 (RWB); Berry Head, Brixham (SX9456), 3.7 (BG); Slapton (SX8345), 22.8 (40) (JHC). N. DEVON [**4**] Braunton Burrows, 3.7 (R. Homan per RFM); Morwenstow, 29.8 (6) (RWB); Hartland Quay (SS2224), 24.9 (4+) (RDP). N. WILTS [**7**] Avebury, 19.9 (2) (K. Sattler). S. WILTS [**8**] Great Cheverell, 19.9 (4) (GRE). DORSET [**9**] Portland Bird Observatory, 20.6-18.10 (69) (MC); Burton Bradstock, 31.8, pair in cop.; Cogden Beach, 18.9 (8) (RJH); West Bexington (SY5386), 22.9 (50), 25.9 (10) (JHC). N. HANTS [**12**] Bramley Frith Wood, 23.9 (A. Cleave per AHD). W. SUSSEX [**13**] and E. SUSSEX [**14**] many from 10.5 to 30.10 (per CRP); Rye Harbour, 28.9 (JFB). E. KENT [**15**] Dungeness, 9.5, 12.5, 15.5, 19.7, 24.7, 25.7 (2), 26.7, 9.8, 29.8, 19.9 (2), 18.10 (Bird Observatory per SPC); Dover, 7.8 (4), 25.8 (5) (REL); Lydd 6.9, 22.9 (SPC). SURREY [**17**] Mitcham Common (TQ2868), 24.6 (GAC); Westcott Downs, Dorking (TQ1349), 8.7 (GAC); The Moors, Merstham (TQ3052), 22.7 (GAC); Robins Grove Wood, Oxted (TQ3752), 30.8 (GAC); South Croydon (TQ3363), 1.9 (GAC). S. ESSEX [**18**] Hadleigh, 25.6, 27.8; Pitsea, 19.8 (DD); Bradwell-on Sea, 20 and 27.8, 4.9 (Dewick, 1999); Thundersley, 29.8 (DD). NORTHANTS [**32**] Yardley Chase, 30.7 (GEH). GLAMORGAN [**41**] Harding's Down, Gower, 21.6 (N. Jones per MRH). CAERNARVON [**49**] Llandudno, 21.6 (A. Daw per MRH). N. LINCS [**54**] Gibraltar Point, 18-19.9 (Wilson, 1999). DERBYS [**57**] Holmewood, 5.8 (BLS). W. LANCASTER [**60**] Warton (SD4128), 1.7 (M. Mysercough per SMP); Claughton, 24.9 (MB). S.E. YORK [**61**] Spurn, 21.6-18.9 (12) (BRS). WESTMORLAND [**69**] South Walney, 12.5, 20.6, 6.7 (Littlewood, 1999a); Hutton Roof, Kirkby Lonsdale, 28.6 (MB). IOM [**71**] Lhen (NX3701), 20.6, flew in from sea (AS); Rue Point (NX4103), 20.6 (AS); Kerrowdhoo Reservoir (SC4080), 20.6 (J. Jones per GDC); Doolish Cashen (SC2378), 20.6 (AS); Douglas (SC3677), 20.6 (G. Wilson per GDC); Dalby (SC2477), 20.6 (B. Fraser per GDC); Castletown (SC2667), 20.6, 24.9 (Kneen per GDC); Guthrie (SC4491), 21.6 (AS); Jurby (NX3700), 21-27.6 (4), 3 and 21.9 (LK); Scarlett Malew (SC2566), 27.6 (A. Moore per GDC); Chasms (SC1866), 27.6 (A. Moore per GDC); Gleneedle (SC2679), 27.6 (AS); Lewaigue (SC4692), 28.6 (AS); Ballure (SC4592), 1.7 (AS); Derbyhaven Malew (SC2867), 5.7 (2) (R. Walker per GDC); Knockaloe Moar (SC2382), 7.7 (AS); Bullrenny (SC3692), 7.7 (AS); Dhoon Maughold (SC4586), 25.7 (LK); Jurby East (SC3899), 7.9 (N. Pinder per GDC); Kentraugh (SC2268), 13.9 (A. Moore per GDC); Peel Hill (SC2383), 20.9 (A. Moore per GDC). ORKNEY [**111**] 22.6, 7 and 9.7 (Gauld, 1999). ZETLAND [**112**] Mail, Bressay, 23.6 (Pennington & Rogers, 1999).
LOUTH [**H31**] Ardee, 20.6 (per TB[2]). DOWN [**H38**] Kearney, 20.6 (per TB[2]). [**H38/39**] Belfast, 20 and 21.6 (per TB[2]).
CHANNEL ISLANDS Guernsey: 19.6-15.10, over 40 (Austin, 1999).

***Gonepteryx cleopatra* L. Cleopatra [In?]**
E. SUSSEX [**14**] Friston Forest, 19.9 (M. Oates per CRP).

LYCAENIDAE

***Lampides boeticus* (L.) Long-tailed Blue [I?/In?]**
W. SUSSEX [**13**] Selsey, 20.9, photographed (C. Watkins per CRP). [S. ESSEX [**18**] Billericay, 24.5, inside a greengrocer's window (DD)].

NYMPHALIDAE

***Argynnis lathonia* (L.) Queen of Spain Fritillary [I]**
IOW [**10**] Mottistone, 23.9 (Biggs & Cheverton per SAK-J).

***Danaus plexippus* (L.) Milkweed [I]**
W. CORNWALL [**1**] Coverack, 27.9 (R. James per Tunmore, 1999); Nanquidno (SW3629), 23.9 (Cornwall Birdwatching Soc. newsletter per RDP). W. CORNWALL [**2**] Penlee Point, Rame (SX4449), 17.10 *(ibid.)*. E. SUSSEX [**14**] Beachy Head, 19.10 (2) (Z. Ringwood per CRP).

GEOMETRIDAE

***Aplasta ononaria* (Fuess.) Rest Harrow [I?/V?]**
E. SUSSEX [**14**] Rye Harbour, 20.6 (PT). E. KENT [**15**] New Romney, 20.6 (SPC).

***Cyclophora puppillaria* (Hb.) Blair's Mocha [I]**
W. CORNWALL [**1**] Penrose, 20.6 (RH per Tunmore, 1999). DORSET [**9**] Portland Bird Observatory, 29.9 (MC). IOW [**10**] Freshwater, 30.6 (D. Wooldridge per SAK-J). N. HANTS [**12**] Sparsholt, 22.8 (RAB). W. SUSSEX [**13**] Walberton, 26.9, 1.10 (JTR). FLINT [**51**] Sealand, 24.9 (Raynes per Anon., 1999).

***Scopula rubiginata* Hufn. Tawny Wave [I]**
W. CORNWALL [**1**] Penrose, 19.6 (RH per Tunmore, 1999). HUNTS [**31**] Hemingford Grey (TL2970), 11.8 (NG-D).

***Rhodometra sacraria* (L.) Vestal [I]**
W. CORNWALL [**1**] Lamorna Cove, Mousehole, 25.6 (MT); St Marys, Scilly (SV9011), 26.9-2.10 (13) (CT); Lizard, 27.9, 23.10, 23.11 (MT); Falmouth (SW7829), 28.10 (JHC). S. DEVON [**3**] Bere Alston (SX4467), 20.6 (RWB); Abbotskerswell (SX8568), 14 and 16.8 (BPH); Starcross, 8.9 (AHD). N. SOMERSET [**6**] Catsgore, 6-7.9 (GEH). S. WILTS. [**8**] Horse Down, Tilshead (SU0247), 25.7 (GAC). DORSET [**9**] Portland Bird Observatory, 23.7, 31.8-24.9 (14) (MC). IOW [**10**] Binstead, 9-13.5, 13.8-15.9 (BW); Freshwater, 20.7, 1.9, 3.9 (2) (SAK-J). N. HANTS [**12**] Sparsholt, 7.7-5.10 (29) (RAB); Selborne, 1.9 (2), 28.9 (AA). W. SUSSEX [**13**] Walberton, 21.6, 21-25.7 (4), 16.8, 21.8, 1-9.9 (19), 18-24.9 (3) (JTR); Kingston, 1-2.9 (SP); Atherington (TQ0000), 28.9 (MSP). E. SUSSEX [**14**] Ringmer, 1.8, 9.8, 26.9 (2) (AKB); Newhaven, 12.8 (D. Dey per CRP); Rye, 16.8, 1.9, 17-26.9 (PT and PP); Iden, 17.8 (PT); Peacehaven, 1.9, 5.9, 18.9, 24.9 (CRP); Icklesham, 1.9 (IH); St Leonards, September (4) (SR). E. KENT [**15**] Dungeness, 22.6, 6.9, 7.9, 17.9 (KR and DW); New Romney, 24.7, 25.7, 30.7, 1.9 (KR and SPC); Kingsgate, 27.7 (Solly, 1999); Densole, 1.9 (TR); Newington, 3.9 (REL); Greatstone, 4.9, 6.9 (3), 7.9 (BB); Littlestone, 5.9 (KR); Lydd, 6.9 (KR). SURREY [**17**] Buckland (TQ2250), 12.5 and 5.9 (CH); South Croydon (TQ3363), 1.9 (GAC); Chessington (TQ1864), 1.9 (JP); Lingfield (TQ3842), 3 and 6.9 (JHC); Epsom Downs (TQ2257), 16.9 (BJG). S. ESSEX [**18**] Bradwell-on-Sea, 17.8 (Dewick, 1999); North Chingford (TQ3993), 1-2.9 (2) (B. Pateman per BG); Theydon Bois (TQ4599), 3 and 6.9 (J. Green per BG); Maldon (TL8406), 18.9 (S. Wood per BG); Thundersley (TQ8087), 20.9 (DD). N. ESSEX [**19**] Coggeshal (TL8425), 23.5 (N. Cuming per BG); Dovercourt (TM2230), 9.9 (CG); Kirby-le-Soken (TM2222), 19.9 (P. Bergdahl per BG). BUCKS [**24**] Willen, 10.9 (GEH). E. SUFFOLK [**25**] Westleton, 9.7 (BLS); Walberswick (TM4974), 21.7 (JHC). E. NORFOLK [**27**] Sheringham (TG1642), 4.7; Cawston, 17.8; Eccles-on-Sea (TG4128), 28.8, 7.9; Winterton, 19.9 (Hipperson, 1998). WARWICK [**38**] Rugby, 19.8 (P. Nicholas per DCGB); Charlecote, 30.8, 5.9, 14.10 (AG); Kenilworth, 6.9, 25.9 (P. Atherton per DCGB). SALOP [**40**] Highley (SO7582), 28.6 (CT). S. LINCS [**53**] Temple Wood (TF0528), 14.5 (J. Lamin per RJ). N. LINCS [**54**] Far Ings (TA0123), 22.6 (McGowan & Credland per RJ). DERBYS [**57**] Matlock, 19.9 (BLS). S.E. YORK [**61**] Spurn, 23.6 (BRS). CHEVIOT [**68**] Scremerston, 2.7 (JTR). IOM [**71**] Claughbane Ramsey (SC4493), 29.4, 20.6 (CW); Dhoor Ramsey (SC4496), 20.6 (G. Wilson per GDC); Glenlough Marown (SC3378), 25.6

(K. Hawkins per GDC); Dhoon Maughold (SC4586), 25.6 (LK); Andreas (SC4199), 5-11.7 (6), 22.9 (TC); South Barrule (SC2776), 3.9 (DA).
CHANNEL ISLANDS Guernsey: Le Chêne, 16.8, 22.8, 3.9 (TNDP); La Broderie, 29.8-20.9 (5) (PC) (Austin, 1999).

***Orthonama obstipata* (Fab.) Gem [I]**
W. CORNWALL [**1**] Lizard, 29.3 (RH), 25.9-23.11 (11) (MT); St Marys, Scilly (SV9011), 26.9-2.10 (3) (CT). S. DEVON [**3**] Starcross, 10.5-30.8 (8) (AHD); Abbotskerswell (SX8568), 12.5-7.9 (12) (BPH); Bere Alston (SX4467), 1.9, 27.9 (RWB). N. SOMERSET [**6**] Catsgore, 3-4.9 (GEH). DORSET [**9**] Portland Bird Observatory, 9.5-4.10 (74) (MC). IOW [**10**] Binstead, 9.5-5.9 (16) (BW); Freshwater, 13.5-27.11 (22) (SAK-J). N. HANTS [**12**] Sparsholt, 14.5-1.9 (16) (RAB); Selborne, 8-29.8 (5) (AA); Bramley Frith Wood, 13.10 (AHD). W. SUSSEX [**13**] Walberton, 24.6, 20-28.7 (14), 9.8, 14.8, 17.8, 21.8, 25.8, 27.8, 1-10.9 (8), 26.9, 20-21.10 (3), 9-11.11 (3), 26.11 (JTR); Lyminster, 6.8 (REP); Kingston, 11-16.8 (6), 31.8-2.9 (6) (SP); Littlehampton, 22.10 (REP). E. SUSSEX [**14**] St Leonards 6-19.5 (12), 18.7, 5.8-11.11 (31) (SR); Rye, 19.5, 24.6, 16 and 17.8, 1.9 (PT and PT); Peacehaven, 25.5, 5.7, 20.7, 31.7, 6 and 7.8, 15.8, 18.8, 18.10 (CRP); East Grinstead, 3.7 (JHC); Icklesham, 3.7 (2), 10.7 (4), 14.8 (3) (IH and PJ); Ringmer, 9.7, 9.8, 27.9 (AKB); Staplefield, 20.7 (R. Revell per CRP); Balcombe, 18.8 (D. Dey per CRP); Iden, 18.8 (PT). E. KENT [**15**] New Romney, 10 and 11.5, 26.6, 30.6, 6.7, 25.7, 26.7, 29.8, 5.9 (KR); Littlestone, 10.5, 11.5 (2), 13.5, 14.7, 25.8, 31.8, 1.9 (KR); New Romney, 10.5, 13.5, 10.8, 18.8, 28.9, 29.9 (2) (SPC); Greatstone, 11.5, 4.7, 13.8-6.9 (9), 19.9 (BB); Lydd, 11.5, 24.8, 5.9, 1.10 (KR); Dungeness, 13.5, 24.6, 20.7, 12.8-5.9 (7), 18.9 (DW), 20.7 (TR); Densole, 21.5, 23.5, 3.6, 19.9, 24.9 (TR); Folkestone Warren, 19.6 (TR); Kingsgate, 5.7, 26.7 (2), 19.8, 24.9 (2) (Solly, 1999); Sandwich Bay, 11.8 (Tordoff, 1999). SURREY [**17**] Lingfield (TQ3842), 11.5, 5.7, 16.7, 10.8, 11.8, 1.9, 10.11 (JHC); Buckland (TQ2250), 15.5, 21.7, 21.8, 9.9 (CH); South Croydon (TQ3363), 5.7, 11.8 (GAC). S. ESSEX [**18**] Bradwell-on-Sea, 23 and 25.7, 25.9, 11 and 12.10 (Dewick, 1999); Thundersley (TQ8087), 4.9 (DD); Ingatestone (TQ6499), 19.9 (G. Smith per BG). N. ESSEX [**19**] Frinton-on-Sea (TM2320), 20.8 (B. Lock per BG); Jaywick (TM1312), 24.9 (J. Young per BG). OXON [**23**] Merton, 22.6 (L. Murphy per GEH). BUCKS [**24**] Willen, 17.7, 8.8, 10.10 (GEH); Radnage (SU7996), 18.9 (AMG); Stony Stratford, 23.9 (M. Killeby per GEH). E. NORFOLK [**27**] Eccles-on-Sea (TG4128), 29.9 (Hipperson, 1998). WARWICK [**38**] Charlecote, 8.5, 13.5, 21.5, 15 and 16.7, 14.8, 29.8, 10.9 (DCGB and AG); Wilmcote, 10.7 (DCGB). STAFFS [**39**] Highgate Common (SO8489), 3.8 (CT). PEMBROKE [**45**] 2.7, 15.7, 21.7, 26.8 (Littlewood, 1999b). W. LANCASTER [**60**] Lightfoot Green (SD5133), 20.8, 2.9 (SMP). S.E. YORK [**61**] Spurn, 19.5, 17.8, 8.9, 15.9, 28.9, 3.10 (BRS). WESTMORLAND [**69**] South Walney, 27.8-19.9 (6) (Littlewood, 1999a). IOM [**71**] Calf of Man (SC1565), June (T. Bagworth per GDC); Ballacriy Colby (SC2370), September (Scott per GDC); Claughbane Ramsey (SC4493), 3.9 (CW). ZETLAND [**112**] Baltasound, Unst, 21.9 (Pennington & Rogers, 1999).
CHANNEL ISLANDS Guernsey: La Broderie, 11.5, 20.6, 8.8, 24.8-5.9 (8) (PC); L'Ancresse, 19.5, 29.8 (2) (RA); St John, 11.8 (RA); Le Chêne, 18.8 (TNDP) (Austin, 1999).

***Chloroclysta miata* (L.) Autumn Green Carpet [I?]**
S.E. YORK [**61**] Spurn, 12.10 "resembling the Scandinavian form", det. H.E. Beaumont (BRS).

***Ennomos autumnaria* (Werneburg) Large Thorn [I?]**
N. LINCS [**54**] Gibraltar Point, 19.9 (Wilson, 1999).

***Selenia lunularia* (Hb.) Lunar Thorn [I]**
E. KENT [**15**] Greatstone, 10.8 (BB).

***Cleorodes lichenaria* (Hufn.) Brussels Lace [I]**
E. KENT [**15**] Dymchurch, 5.6 (JO per SPC); Dungeness, 20.7 (KR).

SPHINGIDAE

***Agrius convolvuli* (L.) Convolvulus Hawk [I]**
W. CORNWALL [**1**] Lizard, 29.6, 26-27.9 (5) (MT), 12.9 (CH); St Agnes, Scilly (SV8808), 2.10, a larva (CT); 2 adults and a number of larvae (Hale and Hicks, 1999). S. DEVON [**3**] Dawlish (SX9679), 22.8, dead in road (PF); Abbotskerswell (SX8568), 7.9 (BPH); Torquay (SX9463), 26.9 (BD). N. DEVON [**4**] Bideford (SS4326), 28.9 (ASH). S. WILTS [**8**] Longleat (ST8342), 26.9 (BPH). DORSET [**9**] Portland Bird Observatory, 16.8-1.10 (6); Southwell, Portland, September, a larva (MC). IOW [**10**] Binstead, 24-31.9 (5) (BW); Freshwater, 26.9 and 3.10 (SAK-J). N. HANTS [**12**] Sparsholt, 30.9 (RAB). W. SUSSEX [**13**] Littlehampton, 25.7, 30.9 (REP); Kingston, 6.9 (SP); Walberton, 1.10 (JTR); Lancing, 14.10, a larva on bindweed (D. Sadler per CRP). E. SUSSEX [**14**] St Leonards, 19.7, 18.8, 2.10 (2) (SR); Beachy Head, 9.8 (S. Young per CRP); Icklesham, 16.8, 29.9 (IH); Rye, 11.9, 19.9, 26.9, 4.10 (per CRP); Seaford, 12.9 (P. Wilson per CRP); Peacehaven, 20.9 (CRP). E. KENT [**15**] Ramsgate, 29.6 (Solly, 1999); New Romney, 30.6, 1.10 (KR); Sandwich Bay, 18.7, 14 and 19.8 (Tordoff, 1999); Densole, 24.9 (TR); Folkestone Warren, 25.9 (TR); Dymchurch, 29.9 (JO); Kingsgate, September (4) (Solly, 1999). S. ESSEX [**18**] Bradwell-on-Sea, 2.9-1.10 (12) (Dewick, 1999); Little Baddow (TL7806), 6.9 (J. Stockton per BG). N. ESSEX [**19**] Beaumont-cum-Moze (TM1725), 4.9 (J. Fisher per BG); Kirby-le-Soken (TM2222), 18.9 (A. Bergdahl per BG); Jaywick (TM1312), 2.10 (J. Young per BG); Great Bentley (TM0921), 4.10 (W. Kempster per BG). BERKS [**22**] Silwood Park, 9.9, dead on road (M. Cock per MSP). E. SUFFOLK [**25**] Felixstowe, 3.9 (Odin, 1999). E. NORFOLK [**27**] California (TG5114), 24.8 a larva; Winterton, 31.8 (2); Blickling, 8.9; Eccles-on-Sea (TG4128), 12.9, 27 and 28.9 (Hipperson, 1998). W. NORFOLK [**28**] Holme, 29.8; Stiffkey, 2, 4 and 9.9; Thornham, 6.9; Hindringham, 9.9; Titchwell, 17 and 20.9; Heacham, 18.9 (Hipperson, 1998). WARWICK [**38**] Bishops Tachbrooke, 24.8 (M. Hancock per DCGB); Charlecote, 10.9 (DCGB). PEMBROKE [**45**] Skomer Island, 13.8, 31.8 (2), 26.9 (2) (Littlewood, 1999b). N. LINCS [**54**] Muckton (TF3781), 20.8, 1.10 (GW); Mablethorpe (TF5085), 31.8 (P. King per RJ); Dalby (TF4070), 21.9 (M. Dawson per RJ); Gibraltar Point (TF5660), 25.9 (Wilson, 1999). S.E. YORK [**61**] Spurn, 25.8 (2), 2.9, 16.9, 3.10 (BRS). WESTMORLAND [**69**] South Walney, 18.9 (Littlewood, 1999a). IOM [**71**] Andreas (SC4199), September (per Manx Museum per GDC); South Barrule (SC2776), 8.9 (2) (DA); Kirk Michael (SC3190), 27.9 (D. and L. Ford per GDC); Blue Point (NX3902), 5.10 (J. Thorpe per GDC). S. ABERDEEN [**92**] Aberdeen, 10.9 (A. Buchan). ORKNEY [**111**] 11.8, 2.9, 10.10 (Gauld, 1999). ZETLAND [**112**] Mainland, mid-July; early September (c.8) (Pennington & Rogers, 1999).
CHANNEL ISLANDS Guernsey: St Peter's Port, 24.7 (R. Lord per MSP); Le Chêne, 30.8, 3.9 (TNDP); La Broderie, 21.9 (PC); Icart, 22.9 (C. David) (Austin, 1999).

***Acherontia atropos* (L.) Death's-head Hawk [I]**
S. DEVON [**3**] Widdon Down, Chagford (SX7289), 5.6 (2) (Mrs Newsome per RFM); Dawlish (SX9679), 12.8 (PF). DORSET [**9**] Arne, 23.7; Poundbury, November (Davey, 1999). E. SUSSEX [**14**] Exceat, 1.9, full-grown larva (P. Wilson per CRP). E. KENT [**15**] Willesborough, 12.9 found dead (per SPC). W. KENT [**16**] Tonbridge, 6.9 fully grown larva (M. Hill per AHD). SURREY [**17**] Gatwick Airport, 10.8 (K. Ruff per CRP). N. ESSEX [**19**] Fingringhoe (TM0320), 10.6, 2 larvae (Mr Bowler per BG); Dovercourt (TM2230), 8.7 (CG). MIDDX [**21**] Camden, 27.9 (G. Crow per MSP). E. NORFOLK [**27**] St Olaves, 29-30.5 (5) (J. Crouch). W. NORFOLK [**28**] Titchwell, 6.9 (Skeen per Anon., 1999). WARWICK [**38**]

Barford, 16.9 larva (C. Cadogan per DCGB). IOM [**71**] Maughold (SC4689), 8.10 (C. Christian per GDC).
CHANNEL ISLANDS Guernsey: Le Chêne, 11.8 (TNDP) (Austin, 1999).

***Hyloicus pinastri* (L.) Pine Hawk [I?/V?]**
DORSET [**9**] Portland Bird Observatory, 9 and 11.8 (MC).

***Macroglossum stellatarum* (L.) Humming-bird Hawk [I]**
W. CORNWALL [**1**] St Agnes, Scilly, 19-20.6 (Hale and Hicks, 1999); Upton Towans, 1-4.7 (up to 31 at valerian) (MT); Loe Bar, Helston (SW6424), 17.9 (CH); St Keverne (SW8021), 19.9 (A. Allcorn per RDP); Constantine (SW7429), 23.9 (H. Jonas per RDP); Lizard, 24.9, 27.10 at light (MT). S. DEVON [**3**] Prawle (SX7836), 2.3 (J. Bailey per RFM); Bere Alston (SX4467), 25.4, 1.5, 20.6, 21.9 (RWB); Exeter (SX9790), 19.6, 17.7 (R. Rowden per RFM); Lydford (SX4783), 6.7 (J. Hale per RFM); Pew Tor, Dartmoor, 8.8 (RWB); Slapton (SX8345), 22.8 (JHC). DORSET [**9**] Portland Bird Observatory, 22.7-5.10 (MC); West Bexington (SY5386), 25.9 (JHC). S. HANTS [**11**] Northney, Hayling Island, 20.9 (GRE). N. HANTS [**12**] Bramley Frith Wood, 31.8-7.9 seen daily (A. Cleave per AHD). W. SUSSEX [**13**] Hove, 19-20.3 (4), 19.7 (2), 25 and 26.7 (RMC); Kingston, 28.8 larva (J. Holloway per CRP). E. SUSSEX [**14**] Northiam, 15.5, 28.6, 4.7 (D. Burrows per CRP); Rye, 30.5 (PT), 31.7, 8.8 (B. Yates per CRP); Peacehaven, 20.7-5.8 (7), 17 and 18.8, 25.9 (CRP); Heathfield, 20.8 (AKB); Ringmer, 10 and 22.10 (AKB); St Leonards, 25.8 (SR); Battle, 28.8 (P. Belchamber per CRP); Seaford/Cuckmere Valley, 8-24.9 (3) (P. Wilson per CRP); East Dean, 12.11 (SR). E. KENT [**15**] Sandwich, 22.6 (JHC); 25.6 (3) (TR); 24.6-9.8 (13) (Tordoff, 1999); Dungeness, 26.7, 22.8-4.9, 22.9-10.10 (Bird Observatory per SPC); Densole, 9 and 10.8 (TR); Lydd, 29.9 (KR). S. ESSEX [**18**] Bradwell-on-Sea, 23-25.6 (4), 8.7-8.8 (18), 14.8-5.9 (4), 20-21.8 (5 larvae) (Dewick, 1999). HERTS [**20**] Ware, 28.6 (per MRH). BUCKS [**24**] New Bradwell, 1.10 (A. Wood per GEH). E. NORFOLK [**27**] Filby, 24.6; Barnham Broom (TG0707), 25.6; Hainford (TG2110), 22.7 (Hipperson, 1998); Reedham (TG4270), 24.7 (JHC). W. NORFLOK [**28**] Foulden, 20.6; Beeston (TG1641), 21.6; Caston, 8.8 (Hipperson, 1998). PEMBROKE [**45**] Skomer Island, 20-21.6 (c.7), 27.7 (2) (Littlewood, 1999b). N. LINCS [**54**] Roughton Moor (TF2164), 3.7 (JJ); Barton upon Humber (TA0322), 9.7 (A. McGowan per RJ); Scunthorpe (SE8910), 22.7 (P. Medland per RJ); Haxey (SK7799), 23.9 (CS). CHESTER [**58**] Halton Common (SJ5482), 26.6, 7.7 (SJM). W. LANCASTER [**60**] Claughton, 21.6 (MB). S.E. YORK [**61**] Bridlington, 27.6 (C. Griffin); Spurn, 4.7, 25.7, 6.8 (larva, adult reared) (BRS). IOM [**71**] Jurby (SC3699), 20.6 (2) (K. McCallum per GDC); Andreas (SC3999), 20.6 (B. Leach per GDC); Castletown (SC2667), 21.6 (GDC); Peel (SC2584), 21.6 (I. Heard per GDC); Marown (SC3678), 27.6 (J. Atkinson per GDC); Kirk Michael (SC3190), 28.6 (L. Sheen per GDC); Peel (SC2484), 4.7 (A. Moore per GDC); Calf of Man, 3.10 (TB). ZETLAND [**112**] Yell, 12.7; Whalsay, 7.9 (Pennington & Rogers, 1999).
DOWN [**H38**] Helen's Bay, 21.6 (per TB[2]).
CHANNEL ISLANDS Guernsey: 14.4-20.10 (15) (Austin, 1999).

***Hyles gallii* (Rott.) Bedstraw Hawk [I]**
DORSET [**9**] Portland Bird Observatory, 5.7 (MC). E. KENT [**15**] Sandwich Bay, 21.8 (Tordoff, 1999). E. SUFFOLK [**25**] Westleton, 8.7 (BLS). W. NORFOLK [**28**] Brancaster, 15.8 (Skeen per Anon., 1999). S.E. YORK [**61**] Spurn, 2.7 (C. Jones per BRS). E. PERTH [**89**] Enochdu, 8.8 (Boyd per Anon., 1999). S. ABERDEEN [**92**] Wartle, 1.8 (Francis per Anon., 1999); Balmedie, 17.8 (Landsman per Anon., 1999). ORKNEY [**111**] 15 and 21.7 (Gauld, 1999). ZETLAND [**112**] 15-29.7 (c.20 including 7 at Eswick) (Pennington & Rogers, 1999).

***Hyles livornica* (Esp.) Striped Hawk [I]**
W. CORNWALL [**1**] Penzance, 3.3 (SJB). DORSET [**9**] Weymouth, 15.2 (Harris per Anon., 1999); Portland Bird Observatory, 21.3 (MC). E. SUSSEX [**14**] Winchelsea, 20.7 (PP). E. KENT [**15**] Herne Bay, 20.2 (Hunt per Anon., 1999). BUCKS [**24**] High Wycombe, 24.2 (Wedd per Anon., 1999). GLAMORGAN [**41**] Kenfig, 14.2 (S. Moon).

NOTODONTIDAE

***Notodonta tritophus* (D. & S.) Three-humped Prominent [I]**
N. ESSEX [**19**] Jaywick (TM1312), 22.6 (J. Young per BG).

THAUMETOPOEIDAE

***Thaumetopoea processionea* (L.) Oak Processionary [I]**
IOW [**10**] Freshwater, 1 and 6.9 (SAK-J).
CHANNEL ISLANDS Guernsey: L'Ancresse, 30.8 (RA); La Broderie, 30 and 31.8 (PC) (Austin, 1999).

LYMANTRIIDAE

***Lymantria dispar* (L.) Gypsy Moth [I]**
E. KENT [**15**] Dungeness, 26.7 male (KR).

ARCTIIDAE

***Eilema sororcula* (Hufn.) Orange Footman [I?]**
DORSET [**9**] Portland Bird Observatory, 14.5 (MC).

***Lithosia quadra* (L.) Four-spotted Footman [I?]**
W. CORNWALL [**1**] St Agnes, Scilly, 31.8 (83), 1.9 (111), 2.9 (29), 4.9 (1) - all males (Hale and Hicks, 1999). IOM [**71**] South Barrule (SC2776), 21.7 (DA).
CHANNEL ISLANDS Guernsey: L'Ancresse, 1.8 (RA); Le Chêne, 17.8 (TNDP) (Austin, 1999).

***Euplagia quadripunctaria* (Poda) Jersey Tiger [I?/R?]**
DORSET [**9**] Portland Bird Observatory, 28.7, 13.8, 19.8 (MC). E. SUSSEX [**14**] Rye, 11-21.8, on four occasions, possibly the same individual (PP); St Leonards, 16.8 (SR).

NOLIDAE

***Meganola albula* (D. & S.) Kent Black Arches [I?/R?]**
E. NORFOLK [**27**] Eccles-on-Sea (TG4128), 9.7-8.8 (24) (Bowman, 1999). N. LINCS [**54**] Gibraltar Point (TF5660), 7.7 (K. Wilson per RJ).

***Nola aerugula* (Hb.) Scarce Black Arches [I]**
E. KENT [**15**] New Romney, 20.6 (KR), 22.7 (SPC).

NOCTUIDAE

***Agrotis crassa* (Hb.) Great Dart [I]**
E. KENT [**15**] Dungeness, 13.8 (DW).

***Actebia praecox* (L.) Portland Moth [R?/I?]**
E. SUSSEX [**14**] Winchelsea, 21.7 (PP).

***Eurois occulta* (L.) Great Brocade [I]**
ORKNEY [**111**] 4.9 (Gauld, 1999). ZETLAND [**112**] Eswick, 11-13.8 (c.2), 6.9 (Pennington & Rogers).

***Mythimna albipuncta* (D. & S.) White-point [I/R?]**
W. CORNWALL [**1**] Coverack, 25.9 (Tunmore, 1999). S. DEVON [**3**] Lydford (SX4783), 6.7 (J. Hale per RFM); Abbotskerswell (SX8568), 10.7 (BPH). DORSET [**9**] Portland Bird Observatory, 28.5-25.9 (37) (MC). IOW [**10**] Freshwater (15)(considered resident) (SAK-J). S. HANTS [**11**] Hayling Island, 24.9 (2) (RAB). N. HANTS [**12**] Sparsholt, 1.9, 23.9 (RAB). W. SUSSEX [**13**] Littlehampton, 7.8 (SP); Walberton, 11.8-28.9 (14) (JTR); Kingston, 12-16.8 (2) (SP); Arundel, 14.8 (JTR). E. SUSSEX [**14**] Icklesham, 15.5, 15.8-28.9 (30) (IH); Peacehaven, 30.5, 11.8, 27.8-3.9 (3), 20-22.9 (4) (CRP); Rye, 2-7.6 (4), 16.8-28.9 (14) (PT and PP); St Leonards, 17.7, 14.8-28.10 (20) (SR); Ringmer, 31.8, 1.9 (AKB); Eastbourne, 28.9 (AKB). E. KENT [**15**] Folkestone Warren, 13.5, 3-25.9 (8) (TR); Greatstone, 20.5, 14-8.24.9 (24) (BB); Lydd, 1-26.6 (4), 24.8-28.9 (7) (KR); Densole, 1.6-10.10 (15) (TR); Dungeness, 3.6, 22.6, 29.8-25.9 (11) (KR, DW and DD); New Romney, 5.6 (SPC), 19.6, 28.8-18.9 (8) (KR); Kingsgate, 10.8, 4.9 (Solly, 1999); Littlestone, 25.8-23.9 (15) (KR); Faversham (TQ9860), 15.9 (JHC); Sandwich Bay, August-September (6) (Tordoff, 1999); Ramsgate, 1.10 (Solly, 1999). SURREY [**17**] Buckland (TQ2250), 6.6, 14.8 and 18.8 (CH). S. ESSEX [**18**] Bradwell St Peters (TM0308), 20.5 (G. Smith per BG); Bradwell-on-Sea, 8.6-12.10 (40) (Dewick, 1999); Steeple (TL9202), 30.7 (DD). N. ESSEX [**19**] Jaywick (TM1312), 1.9 (J. Young per BG); Little Oakley (TM2129), 24.9 (G. Slater per BG). E. SUFFOLK [**25**] Felixstowe, 21.5 (Odin, 1999). E. NORFOLK [**27**] Eccles-on-Sea (TG4128), 3.6, 1.9, 6.9, 11.9 25.9 (Bowman, 1999); Winterton, 31.8 (2), 3.9 (Hipperson, 1998).

***Mythimna vitellina* (Hb.) Delicate [I]**
W. CORNWALL [**1**] Lizard, 28-30.6 (4), 26.9-26.10 (27) (MT); St Marys, Scilly (SV9011), 26.9-2.10 (13) (CT); Coverack, 4.10 (2), 16.10 (MT). S. DEVON [**3**] Teignmouth (SX9473), 4.7, 3.10 (RFM); Abbotskerswell (SX8568), 6.7 (BPH); Torquay (SX9463), 26.9 (BD); Prawle Point (SX7735), 28.9 (4) (RFM). DORSET [**9**] Portland Bird Observatory, 10.6-12.10 (69) (MC); Maiden Newton (SY5998), 24.9 (JHC); West Bexington (SY5386), 25.9 (2) (JHC); Portland, 27.9 (5) (TR). IOW [**10**] Freshwater, 8.9-20.10 (15) (SAK-J); Binstead, 26.9 (BW). N. HANTS [**12**] Sparsholt, 16.7, 29.9 (RAB). W. SUSSEX [**13**] Walberton, 20.6, 26.7, 24 and 26.9, 9.10, 21-23.10 (3) (JTR); West Wittering, 5.9 (2) (C. Dewhurst per CRP); Atherington (TQ0000), 28.9 (MSP). E. SUSSEX [**14**] Rye, 12-30.6 (3), 4.8, 27.9-5.10 (5) (PP and PT); Icklesham, 30.6, 3.7, 19.9-2.10 (6) (IH); Peacehaven, 24.9, 23.10, 14.11 (CRP); Eastbourne, 25.9 (MSP); St Leonards, 4.10-7.11 (5) (SR). E. KENT [**15**] New Romney, 22.6, 29.9 (KR); Dungeness, 29.6 (DW), 20.7, 30.8 (6), 24.9 (TR), 6-28.9 (6) (KR and DW); Densole, 9.7, 14.7, 9.10 (TR); Greatstone, 13.7 (BB); Lydd, 28.9, 21.10 (KR); Sandwich Bay, 30.9 (Tordoff, 1999); Kingsgate, 21.10 (2), 22.10 (Solly, 1999). SURREY [**17**] Lingfield (TQ3842), 5.7 (JHC). S. ESSEX [**18**] Bradwell-on-Sea, 2.10 (Dewick, 1999). N. ESSEX [**19**] Dovercourt (TM2230), 27.9 (CG). BUCKS [**24**] Willen, 28.7 (GEH). E. SUFFOLK [**25**] Felixstowe, 2.5 (Odin, 1999). PEMBROKE [**45**] Skomer Island, 25 and 27.9 (Littlewood, 1999b).
CHANNEL ISLANDS Guernsey: 23.5-15.10 (Austin, 1999).

***Mythimna l-album* (L.) L-album Wainscot [I]**
IOW [**10**] Binstead, 4.7 (BW). E. KENT [**16**] Dymchurch, 29.9 (3) (JO). S. ESSEX [**18**] Bradwell-on-Sea, 24.6, 27.9 (Dewick, 1999).

***Mythimna unipuncta* (Haw.) White-speck [I]**
W. CORNWALL [**1**] Penrose, 5 and 13 .1 (RH); Lizard, 26.3, 24.9-27.11 (28) (MT); St Agnes, Scilly, 12.5 (4), 27.11 (18) (Hale and Hicks, 1999); Lamorna Cove, Mousehole, 25.6 (MT); St Marys, Scilly (SV9011), 26.9-2.10 (26) (CT); Coverack, 15-16.10 (3) (MT). S. DEVON [**3**] Torquay (SX9463), 19.9 (BD); Abbotskerswell (SX8568), 19.9 (BPH); Teignmouth (SX9473),

27.9 (RFM). DORSET [**9**] Portland Bird Observatory, 21 and 23.3, 21 and 26.5, 17.9-2.10 (8), 9-16.12 (5) (MC); Durlston Head (SZ0377) 14.12 (SN). IOW [**10**] Freshwater, 20.9, 14.12 (SAK-J). N. HANTS [**12**] Selborne, 25.9 (AA). E. KENT [**15**] Greatstone, 27.9 (BB). PEMBROKE [**45**] Skomer Island, 13.8, 24.9, 2.10 (Littlewood, 1999b). IOM [**71**] Dhoon Maughold (SC4586), 30.8, 1.9 (LK); Calf of Man, 21 and 28.9 (TB); Ballacriy Colby (SC2370), 27.9 (Scott per GDC); South Barrule (SC2776), 21.10 (DA); Knocksharry German (SC2785), 22.10 (DA).
CHANNEL ISLANDS Guernsey: Le Chêne, 28.8 (TNDP); La Broderie, 1.9, 16.11 (PC) (Austin, 1999).

***Mythimna loreyi* (Dup.) Cosmopolitan [I]**
W. CORNWALL [**1**] Lizard, 27.6, 27.9-27.11 (11) (MT); St Marys, Scilly (SV9011), 26.9 (2) (CT). DORSET [**9**] Portland Bird Observatory, 17.8 (MC). E. KENT [**15**] New Romney, 19.9 (KR). PEMBROKE [**45**] Skomer Island, 13.6, 7.10 (Littlewood, 1999b).

***Conistra erythrocephala* (D. & S.) Red-headed Chestnut [I]**
E. SUSSEX [**14**] Peacehaven, 10.1 (CRP).

***Xanthia ocellaris* (Borkh.) Pale Lemon Sallow [I?]**
E. KENT [**15**] New Romney, 28.9 (KR).

***Cryphia raptricula* (D. & S.) Marbled Grey [I]**
E. SUSSEX [**14**] St Leonards, 10.8 (SR).

***Trachea atriplicis* (L.) Orache Moth [I?]**
DORSET [**9**] Portland Bird Observatory, 20.6 (MC).

***Chortodes elymi* (Treits.) Lyme Grass [I?/V?]**
W. KENT [**16**] Isle of Grain, 10.8 (AJGB).

***Spodoptera exigua* (Hb.) Small Mottled Willow [I]**
W. CORNWALL [**1**] St Agnes, Scilly, 9.5, 12.5 (2) (Hale and Hicks, 1999); St Marys, Scilly (SV9011), 26.9-1.10 (7) (CT); Lizard, 27.9, 2.10 (MT). E. CORNWALL [**2**] Wadebridge (SW9672), 16.9 (RFM). S. DEVON [**3**] Lydford (SX4783), 7.7 (J. Hale per RFM); Abbotskerswell (SX8568), 2.10 (BPH). DORSET [**9**] Portland Bird Observatory, 12.1, 9.5-26.9 (39) (MC). IOW [**10**] Freshwater, 9 and 22.5 (SAK-J); Binstead, 11.5 (BW). N. HANTS [**12**] Sparsholt, 12-21.5 (4), 21.7 (RAB). W. SUSSEX [**13**] Kingston, 1-2.9 (2) (SP); Walberton, 25.9 (JTR). E. SUSSEX [**14**] Peacehaven, 20.5, 24.7-9.8 (6) (CRP); Rye, 30.6, 3.7, 19.7, 30.8 (PP and PT); Icklesham, 3.7, 28-30.7 (2) (IH); Iden, 18.8 (PT). E. KENT [**15**] New Romney, 24.6, 26.7 (2), 1.8, 10.8, 3 and 5.9, 24.9 (KR and SPC); Lydd, 8.7, 1.9 (KR); Greatstone, 7.8, 11.8, 3.9 (BB). S. ESSEX [**18**] Bradwell-on-Sea, 30.6, 25.7, 30.8, 6 and 8.9 (Dewick, 1999). E. NORFOLK [**27**] Barnham Broom (TG0707), 3.7 (Hipperson, 1998). WARWICK [**38**] Charlecote, 15.5, 25.7 (AG). WESTMORLAND [**69**] South Walney, 4.7, 11.8, 30.8 (Littlewood, 1999a). IOM [**71**] Calf of Man, 19.6 (TB); Claughbane Ramsey (SC4493), 20.6 (CW); Dhoor Ramsey (SC4496), 20.6 (G. Wilson per GDC); Dhoon Maughold, 20.6 (4), 27.6, 5.7, 26.7 (3), 28 and 29.7, 1.8 (2), 2.8 (3), 9.8, 30.9 (LK); Andreas (SC4199), 7.7 (2) (TC).
CHANNEL ISLANDS Guernsey: L'Ancresse, 20.5, 15.8 (RA); Le Chêne, 22.6 (TNDP); La Broderie, 16.8 (PC) (Austin, 1999).

***Proxenus hospes* (Freyer) Porter's Rustic [I]**
W. CORNWALL [**1**] St Agnes, Scilly, 31.8 (Hale and Hicks, 1999).

***Helicoverpa armigera* (Hb.) Scarce Bordered Straw [I/In]**
W. CORNWALL [**1**] Penrose, 12.1 (RH); St Agnes, Scilly, May (Hale and Hicks, 1999); Lizard, 27.9-4.10 (17) (MT); St Marys, Scilly (SV9011), 28.9-1.10 (7) (CT); Coverack, 16.10 (MT). S. DEVON [**3**] Lydford (SX4783), 20.6 (J. Hale per RFM); Teignmouth (SX9473), 9.9, 28.9, 5.10 (RFM); Torquay (SX9463), 27.9 (BD); Prawle Point (SX7735), 28.9 (6) (RFM); Kingskerswell (SX8868), 5.10, 7.10 (BD). N. DEVON [**4**] Bideford (SS4326), September (ASH). S. WILTS [**8**] Longleat (ST8342), 26.9 (2) (BPH). DORSET [**9**] Portland Bird Observatory, 3.9, 24.9-4.10 (46) (MC); West Bexington (SY5386), 25.9 (JHC); Portland, 27.9 (10) (TR). IOW [**10**] Freshwater, 2.9, 26.9 (4), 27.9 (4), 28.9 (3), 2.10, 4.10, 5.10 (SAK-J); Binstead, 26.9-12.10 (3) (BW). N. HANTS [**12**] Sparsholt, 25.9-5.10 (5) (RAB); Selborne, 9.10 (AA). W. SUSSEX [**13**] Walberton, 1.9, 27.9-2.10 (8), 13 and 23.10 (JTR); Littlehampton, 5.10 (2) (REP). E. SUSSEX [**14**] Rye, 5.7, 7.7, 25.7, 26 and 28.9, 14.10 (PT and PP); Ringmer, 26.9 (AKB); Eastbourne, 28.9 (5) (AKB); Peacehaven, 1.10 (CRP); St Leonards, 4, 13 and 22.10 (SR). E. KENT [**15**] Folkestone Warren, 29.8 (TR); New Romney, 26.9, 29.9 (2), 1.10 (KR); Kingsgate, 27.9, 28.9 (3), 5.10, 21.10 (Solly, 1999); Greatstone, 27 and 28.9 (BB); Dungeness, 28.9 (2) (DW); Densole, 28.9 (TR); Sandwich Bay, 28 and 30.9, 2.10 (Tordoff, 1999); Littlestone, 29.9 (KR). SURREY [**17**] Lingfield (TQ3842), 26.9 (JHC). S. ESSEX [**18**] Bradwell-on-Sea, 18.9-9.10 (7) (Dewick, 1999); Theydon Bois (TQ4599), 2.10 (J. Green per BG). E. SUFFOLK [**25**] Felixstowe, 26.9 (Odin, 1999). WARWICK [**38**] Charlecote, 6 and 7.10 (AG). PEMBROKE [**45**] Skomer Island, 27.9 (Littlewood, 1999b). N. LINCS [**54**] Roughton Moor (TF2164), 25.9 (JJ); Muckton (TF3781), 26.9, 9.10 (GW). [IOW [**10**] larva in a supermarket pepper (SAK-J)].
CHANNEL ISLANDS Guernsey: La Broderie, 20.6 (PC); Le Chêne, 26.9-4.10 (8) (TNDP) (Austin, 1999).

***Heliothis viriplaca* (Hufn.) Marbled Clover [I?/V?]**
S. ESSEX [**18**] Chelmsford (TL6808), 26.6 (S. Wilkinson per BG). W. NORFOLK [**28**] Stiffkey, 28.7 (MT).

***Heliothis peltigera* (D. & S.) Bordered Straw [I]**
W. CORNWALL [**1**] St Agnes, Scilly, May (Hale and Hicks, 1999). S. DEVON [**3**] Lydford (SX4783), 20.6 (3) (J. Hale per RFM). DORSET [**9**] Portland Bird Observatory, 19.5 (2), 1.7, 11 and 13.8 (MC); West Bexington (SY5386), 25.9 (JHC). IOW [**10**] Freshwater, 23.6 (SAK-J); Binstead, 27.9 (BW). W. SUSSEX [**13**] Walberton, 26.8 (JTR). E. SUSSEX [**14**] Rye, 22-26.6 (3), 7.7, 6.8, 17.8, 1.9, 1.10, 10.10 (PP and PT), 8.8 a larva (JHC). E. KENT [**15**] Dungeness, 24.6, 29.8 (DW); Kingsgate, 24.6, 10.8, 19.8 (2); Ramsgate, 2.7 (Solly, 1999); New Romney, 9.8 (SPC); Sandwich Bay, 11.8 (Tordoff, 1999); Folkestone Warren, 29.8 (TR). S. ESSEX [**18**] Bradwell-on-Sea, 24.6, 27.8 (Dewick, 1999); 26.7, c.20 larvae (DD). BUCKS [**24**] Willen, 25.6 (GEH). E. SUFFOLK [**25**] Felixstowe, 26.9 (Odin, 1999). E. NORFOLK [**27**] Winterton, 4.9 (Hipperson, 1998). STAFFS [**39**] Wall Heath (SO8890), 25.6 (CT). N. LINCS [**54**] Muckton (TF3781), 28.6 (GW). CHESTER [**58**] Thurstaston Country Park, Wirral (SJ2383), 15.8 (DJP & IFS). W. LANCASTER [**60**] Lightfoot Green (SD5133), 10.7 (SMP). S.E. YORK [**61**] Spurn, 3.7 (BRS). IOM [**71**] Knocksharry German (SC2785), 25.4 (DA); Dhoon Maughold (SC4586), 20.6, 27.6 (LK); Peel Hill (SC2383), 22.6 (CW); Calf of Man, 2.7 (TB).
CHANNEL ISLANDS Guernsey: La Broderie, 26.9 (PC) (Austin, 1999).

***Schinia scutosa* (D. & S.) Spotted Clover [I]**
N. LINCOLN [**54**] Laughton Common, Gainsborough, 25.8 (K. Rodgers).

***Eublemma ostrina* (Hb.) Purple Marbled [I]**
W. CORNWALL [**1**] Penrose, 5.7 (RH). S. DEVON [**3**] Slapton Ley, 22.8, a larva in *Carlina vulgaris* (JHC). S. SOMERSET [**5**] Yeovil, 6.7 (J. Astley per PAD). DORSET [**9**] Portland Bird Observatory, 20.5 (MC).

***Eublemma parva* (Hb.) Small Marbled [I]**
W. CORNWALL [**1**] Lizard, 27.6 (MT); St Agnes, Scilly, 30.6 (Hale and Hicks, 1999); St Marys, Scilly (SV9011), 27.9 (CT). S. DEVON [**3**] Lydford (SX4783), 20.6 (J. Hale per RFM); West Hill, Ottery St Mary, 8.7 (PJB); Teignmouth (SX9473), 20.7 (RFM). DORSET [**9**] West Bexington, 1, 2, 6, 9, and 10.7 (R. Eden per PAD), 26.7 larvae in *Pulicaria* (PS); Portland Bird Observatory, 7.7 (MC). FLINT [**51**] Hawarden (SJ3066), 23.6 (G. Neal). NOTTS [**56**] Woollaton Hall, 27.7 (S. Wright per PAD). W. LANCASTER [**60**] Lightfoot Green (SD5133), 2.7 (SMP); Gait Barrows, 10.7 (George, 1999). CHEVIOT [**68**] Holy Island, 29.6 (JTR). IOM [**71**] Smeale (NX4303), 24.6 (LK). WIGTOWN [**74**] Drummore, 20.6 (R. Mearns per PAD).
CHANNEL ISLANDS Guernsey: La Broderie, 11.5 (PC); Le Chêne, 22.6 (TNDP) (Austin, 1999).

***Deltote deceptoria* (Scop.) Pretty Marbled [I]**
E. SUSSEX [**14**] Icklesham (TQ8815), 24 6 (PJ and IH). E. KENT [**15**] Greatstone, 20.6 (BB).

***Deltote bankiana* (Fab.) Silver Barred [I?/V?]**
E. SUSSEX [**14**] Winchelsea, 24.6 (PP).

[*Acontia lucida* (Hufn.) Pale Shoulder [In]
S. DEVON [**3**] Thorverton (SS9202), 10.7 (K. Bailey) - probable importation]

***Chrysodeixis chalcites* (Esp.) Golden Twin-spot [I/In]**
N. HANTS [**12**] Sparsholt, 23.9 (RAB). E. SUSSEX [**14**] Rye Harbour, 25.9 (PP and PT). S. ESSEX [**18**] Steeple, 23.9 (Anon., 1999). E. NORFOLK [**27**] Eccles-on-Sea (TG4128), 1.10 (Bowman, 1999). [IOW [**10**] larva on supermarket celery (SAK-J)].

***Trichoplusia ni* (Hb.) Ni Moth [I]**
S. DEVON [**3**] Dawlish, 14.5 (PF); Lydford (SX4783), 20.6 (J. Hale per RFM). IOM [**71**] Knocksharry German (SC2785), 24.9 (DA).

***Thysanoplusia orichalcea* (Fab.) Slender Burnished Brass [I]**
W. CORNWALL [**1**] Penzance, 28.8 (SJB); St Agnes, Scilly, 1.9 (Hale and Hicks, 1999); Boskenna, 5.9 (A. Kennard per Anon., 1999); Lizard (SW6721), 17.9 (CH). E. CORNWALL [**2**] Downderry, 20.9 (Madge per Anon., 1999). S. DEVON [**3**] Bere Alston (SX4467), 24.9 (RWB); Dawlish, 29.9 (PF). GLAMORGAN [**41**] Pilton, 21.9 (Warmsley per Anon., 1999).
CHANNEL ISLANDS Guernsey: Le Chêne, 30.8, 1.9 (TNDP) (Austin, 1999).

***Macdunnoughia confusa* Steph. Dewick's Plusia [I]**
S. DEVON [**3**] Prawle Point (SX7735), 28.9, fertile female (RFM). N. HANTS [**12**] Greywell, 2.10 (Dr P. Boswell per AHD).

***Abrostola triplasia* (L.) Dark Spectacle [I?]**
DORSET [**9**] Portland Bird Observatory, 15-21.5 (3), 26.9 (MC).

***Catocala fraxini* (L.) Clifden Nonpareil [I]**
IOW [**10**] Freshwater, 4.10 (SAK-J). BERKS [**22**] Fernham, 26.9 (Nash per Anon., 1999). E. NORFOLK [**27**] Beccles, 20.9 (Fairless per Anon., 1999).

***Minucia lunaris* (D. & S.) Lunar Double-stripe [I]**
CHANNEL ISLANDS Guernsey: Le Chêne, 6.6 (TNDP) (Austin, 1999).

***Colobochyla salicalis* (D. & S.) Lesser Belle [I?]**
E. NORFOLK [**27**] Eccles-on-Sea (TG4128), 23.6 (Bowman, 1999).

***Parascotia fuliginaria* (L.) Waved Black [I?]**
E. KENT [**15**] New Romney, 5.8 (KR).

***Hypena obsitalis* (Hb.) Bloxworth Snout [I?/V?]**
DORSET [**9**] The Grove, Portland, 29.7 (MC); Portland Bird Observatory, 15.10 (MC).

***Pechipogo plumigeralis* (Hb.) Plumed Fan-foot [I?/R(t)?]**
E. SUSSEX [**14**] Rye Harbour, 20.7, 25.7, 10.8 (Troake, 1999).

***Trisateles emortualis* (D. & S.) Olive Crescent [I?/V?]**
S. ESSEX [**18**] Bradwell-on-Sea, 20.6 (Dewick, 1999).

ANNEX 2: SELECTED RECORDS OF "COMMONER" SPECIES

YPONOMEUTIDAE

***Plutella xylostella* (L.)**
Records received from the following vice-counties: [**1**]; [**3**]; [**8**]; [**9**]; [**10**]; [**12**]; [**13**]; [**14**]; [**15**]; [**17**]; [**21**]; [**25**]; [**26**]; [**27**]; [**34**]; [**58**]; [**59**]; [**60**]; [**61**]; [**71**]; [**112**].

PYRALIDAE

***Udea ferrugalis* (Hb.)**
An above average year, reported from January to December and across the country. Annual counts from fixed traps included: W. CORNWALL [**1**] Lizard, 33 (MT); S. DEVON [**3**] Starcross, 129 (AHD); DORSET [**9**] Portland Bird Observatory, 610 (MC); IOW [**10**] Freshwater, 84 (SAK-J); N. HANTS [**12**] Selborne, 82 (AA); S. ESSEX [**18**] Bradwell-on-Sea, 166 (Dewick, 1999); E. NORFOLK [**27**] Eccles-on-Sea (TG4128), 39 (Bowman, 1999); S.E. YORK [**61**] Spurn, 21 (BRS).
Earliest dates: CHANNEL ISLANDS Guernsey, 9.1 (Austin, 1999); N. HANTS [**12**] Selborne, 9.1 (AA); DORSET [**9**] Portland Bird Observatory, 9.5 (MC); IOW [**10**] Binstead, 9.5 (BW); Freshwater, 13.5 (SAK-J); E. KENT [**15**] Densole, 11.5 (TR); IOM [**71**] Calf of Man, 18.5 (TB).
Latest dates: W. CORNWALL [**1**] Lizard, 27.11 (MT); DORSET [**9**] Portland Bird Observatory, 27.11 (MC); S. DEVON [**3**] Starcross, 9.12 (AHD); IOW [**10**] Freshwater, 9.12 (SAK-J).
Other significant records: EASTERNESS [**96**] Kincraig Wood (NH8205), 27.6 (GAC). ZETLAND [**112**] Eswick, 26.6, 11.7, September (20); Unst, 22.9 (Pennington & Rogers, 1999).

***Nomophila noctuella* (D. & S.)**
An excellent year with a very significant increase over the previous one. Annual counts from fixed traps include: S. DEVON [**3**] Starcross, 33 (AHD); DORSET [**9**] Portland Bird Observatory, 2035 (MC); IOW [**10**] Freshwater, 349 (SAK-J); N. HANTS [**12**] Selborne, 144 (AA); S. ESSEX [**18**] Bradwell-on-Sea, 253 (Dewick, 1999); E. NORFOLK [**27**] Eccles-on-Sea (TG4128), 23 (Bowman, 1999); S.E. YORK [**61**] Spurn, 52 (BRS).

Earliest dates: CAERNARVON [**49**] Bangor, 10.1 (Brown, 1998a); W. LANCASTER [**60**] Lightfoot Green (SD5133), 14.2 (SMP); E. CORNWALL [**2**] Mevagissey, 16.2 (RE); S. ESSEX [**18**] Bradwell-on-Sea, 19.2 (Dewick, 1999); DORSET [**9**] Portland Bird Observatory, 24.2 (MC); W. CORNWALL [**1**] Lizard, singletons throughout March (RH).
Latest dates: S. ESSEX [**18**] Bradwell-on-Sea, 8.11 (Dewick, 1999); IOW [**10**] Freshwater, 9.11 (SAK-J); E. KENT [**15**] Densole, 10.11 (TR); DORSET [**9**] Portland Bird Observatory, 13.11 (MC); W. CORNWALL [**1**] Lizard, 27.11 (MT).
Other significant records: ORKNEY [**111**] 25.7-8.9 (Gauld, 1999). ZETLAND [**112**] Eswick, 30.6, 29.9 (13) (Pennington & Rogers, 1999).

PIERIDAE

***Pieris brassicae* (L.) Large White**
Significant records: W. CORNWALL [**1**] Portreath, 2.8, hundreds, possibly thousands, in a field (RWB); DORSET [**9**] Portland Bird Observatory, 1-2.8 a steady stream of some hundreds flying in off the sea (MC); W. SUSSEX [**13**] Hove, 25.7 (c.100) (RMC).

NYMPHALIDAE

***Vanessa atalanta* (L.) Red Admiral**
Earliest dates: W. SUSSEX [**13**] Chichester, 9.1 (S. Curson per CRP), 10.2 (N. Mitchell per CRP); E. SUSSEX [**14**] Isfield, 9.1 (G. Parris per CRP), Staplecross, 9.1 (S. Webb per CRP), Northiam, 13-24.2, many sightings (D. Burrows per CRP); SURREY [**17**] West Byfleet, 7.2 (D. Carter), Wotton, 10.2 (J.D. Holloway), Kew Gardens, 14.2 (MRH); S. DEVON [**3**] Bere Alston (SX4467), 28.3 (RWB); N. LINCS [**54**] Gibraltar Point, 28.3 (Wilson, 1999); DORSET [**9**] Portland Bird Observatory, 30.3 (MC); S.E. YORK [**61**] Spurn, 31.3 (BRS).
Latest dates: W. CORNWALL [**1**] Lizard, 24.11 (MT); DORSET [**9**] Portland Bird Observatory, 11.12 (MC).
Other significant records: DORSET [**9**] Portland Bird Observatory, 100+ arriving in off the sea on 2.10 (MC); ORKNEY [**111**] 29.5-8.10 (Gauld, 1999); ZETLAND [**112**] late May-early September (Pennington & Rogers, 1999).

***Vanessa cardui* (L.) Painted Lady**
Earliest dates: E. SUSSEX [**14**] Brighton, 9.1 (D. Sladen per CRP); SURREY [**17**] South Croydon (TQ3363), 14.3 (GAC); CHANNEL ISLANDS Guernsey, 24.3 (Austin, 1999); W. CORNWALL [**1**] Gunwalloe, 24.3 (MT); S. DEVON [**3**] Bere Alston (SX4467), 28.3 (RWB); DORSET [**9**] Portland Bird Observatory, 28.3 (MC)
Latest dates: CHANNEL ISLANDS Guernsey, 2.11 (Austin, 1999); W. CORNWALL [**1**] Mullion, 9.11 (MT).
Other significant records: ORKNEY [**111**] 25.6, 2.8 (Gauld, 1999); ZETLAND [**112**] Unst, 6.7, 21.9, Noss, 14.7 (Pennington & Rogers, 1999).

NOCTUIDAE

***Agrotis ipsilon* (Hufn.) Dark Sword-grass**
A better year than the previous one. Annual counts from fixed traps include: DORSET [**9**] Portland Bird Observatory, 452 (MC); IOW [**10**] Freshwater, 92 (SAK-J); S. ESSEX [**18**] Bradwell-on-Sea, 410 (Dewick, 1999); E. NORFOLK [**27**] Eccles-on-Sea (TG4128), 113 (Bowman, 1999); S.E. YORK [**61**] Spurn, 140 (BRS).
Earliest dates: W. CORNWALL [**1**] Lizard, 20.2, 13.3, 28.3, 30.3 (RH/MT); DORSET [**9**] Portland Bird Observatory, 24.2 (MC); S. ESSEX [**18**] Bradwell-on-Sea, 6.3 (Dewick, 1999); IOW [**10**] Binstead, 8.3 (BW), Freshwater, 12.3 (SAK-J); CHANNEL ISLANDS Guernsey,

18.3 (Austin, 1999); ZETLAND [**112**] Eswick, 22 and 26.3 (Pennington & Rogers, 1999); S. DEVON [**3**] Abbotskerswell (SX8568), 22.3 (BPH), Bere Alston (SX4467), 28.3 (2) (RWB); IOM [**71**] Calf of Man, 30.3 (TB).
Latest dates: E. NORFOLK [**27**] Eccles-on-Sea (TG4128), 2.11 (Bowman, 1999); S. ESSEX [**18**] Bradwell-on-Sea, 3.11 (Dewick, 1999). E. KENT [**15**] Densole, 8.11 (TR); DORSET [**9**] Portland Bird Observatory, 17.11 (MC); W. CORNWALL [**1**] Lizard, 26.11 (MT).

***Peridroma saucia* (Hb.) Pearly Underwing**
An average year. Annual counts from fixed traps include: DORSET [**9**] Portland Bird Observatory, 104 (MC); IOW [**10**] Freshwater, 22 (SAK-J); S. ESSEX [**18**] Bradwell-on-Sea, 24 (Dewick, 1999); E. NORFOLK [**27**] Eccles-on-Sea (TG4128), 28 (Bowman, 1999); S.E. YORK [**61**] Spurn, 6 (BRS).
Earliest dates: W. CORNWALL [**1**] St Agnes, Scilly, 11.1 (Hale and Hicks, 1999); S. DEVON [**3**] Teignmouth (SX9473), 20.2 (RFM); DORSET [**9**] Portland Bird Observatory, 29.3 (MC).
Latest dates: E. KENT [**15**] Densole, 9.11 (TR); DORSET [**9**] Portland Bird Observatory, 10.11 (MC); W. CORNWALL [**1**] Lizard, 27.11 (MT); IOW [**10**] Freshwater, 21.12 (SAK-J).
Other significant records: IOM [**71**] Calf of Man, 7.8, 26.9 (2) (TB), Andreas (SC4199), 20.8, 6.10 (TC), Dhoon Maughold (SC4586), 10-18.9 (5) (LK). ZETLAND [**112**] Eswick, 22 and 29.9 (Pennington & Rogers, 1999).

***Autographa gamma* L. Silver Y**
An average year. Annual counts from fixed traps include: DORSET [**9**] Portland Bird Observatory, 1389 (MC); IOW [**10**] Freshwater 303 (SAK-J); S. ESSEX [**18**] Bradwell-on-Sea, 1952 (Dewick, 1999); E. NORFOLK [**27**] Eccles-on-Sea (TG4128), 17.5-23.10 (843) (Bowman, 1999).
Earliest dates: IOW [**10**] Freshwater 15.2 (SAK-J); W. CORNWALL [**1**] Lizard, 24.2, 14.3, 27.3 (RH/MT).
Latest dates: W. CORNWALL [**1**] Lizard, 27.11 (MT); DORSET [**9**] Portland Bird Observatory, 28.11 (MC).
Other significant reocrds: S.E. YORK [**61**] Spurn, 17.8 c.5000, 28.8 c.7000 (BRS).

Initials of recorders

AA	A. Aston	BW	B. Warne	GEH	G.E. Higgs
AG	A. Gardner	CG	C. Gibson	GM	G. Martin
AKB	A. K. Batten	CH	C. Hart	GRE	G. R. Else
AGJB	A. G. J. Butcher	CRP	C.R. Pratt	GW	G. Wright
AHD	A.H. Dobson	CS	C. Smith	IDS	I.F. Smith
AMG	A.M. George	CT	C. Timmins	IH	I. Hunter
AS	A. Sapsford	CW	C. Wormwell	JFB	J.F. Burton
ASH	A.S. Henderson	DA	D. Allan	JHC	J.H. Clarke
BB	B. Banson	DCGB	D.C.G. Brown	JJ	J. Jaines
BD	B. Deakins	DD	D. Down	JO	J. Owen (Dymchurch)
BG	B. Goodey	DJP	D.J. Poynton	JP	J. Porter
BJG	B.J. Grabasky	DW	D. Walker	JTR	J.T. Radford
BLS	B.L. Statham	FDL	F.D. Lowe	KR	K. Redshaw
BPH	B.P. Henwood	GAC	G.A. Collins	LK	L. Kneale
BRS	B.R. Spence	GDC	G.D. Craine	MB	Mrs M. Broomfield

MC	M. Cade	RA	R. Austin	SAK-J	S.A. Knill-Jones
MRH	M. Honey	RAB	R.A. Bell	SJB	S.J. Barron
MSP	M.S. Parsons	RAS	R.A. Softly	SJM	S.J. McWilliam
MT	M. Tunmore	RD	R. Dickson	SMP	S.M. Palmer
NG-D	N. Greatorex-Davies	RDP	R.D. Penhallurick	SN	S. Nash
PAD	P.A. Davey	RE	R. Edmondson	SP	S. Patton
PB	P. Butter	REL	R.E. Lane	SPC	S.P. Clancy
PC	P. Costen	REP	R.E. Pratt	SR	S. Richardson
PF	P. Franghiadi	RFM	R.F. McCormick	TB	T. Bagworth
PJ	P. Jones	RH	R. Howard	TB [2]	T. Boyd
PJB	P.J. Baker	RJ	R. Johnson	TC	T. Callister
PP	P. Philpott	RJH	R.J. Heckford	TNDP	T.N.D. Peet
PS	P. Sterling	RMC	R.M. Craske	TR	T. Rouse
PT	P. Troake	RWB	R.W. Bogue		

Other contributors

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Rediscovery of Hoary Footman *Eilema caniola* (Hb.) (Lep.:Arctiidae) on Anglesey

On the evening of 23 August 2000, I visited the RSPB reserve at South Stack on Anglesey. In 1999 we had found Square-spot Dart *Euxoa obelisca* at this site in early August and the aim of the trip was to survey for that insect. Two m.v. traps were run around the highest car park. The night was very windy, and few moths were caught. Although Square-spot Dart failed to appear, a pristine Hoary Footman *Eilema caniola* was taken at one of the lights.

Both Skinner (*Colour Identification Guide to Moths of the British Isles*. Viking, 1984) and Heath & Emmet (1983. *Moths and Butterflies of Britain and Ireland* vol 9, Harley) give the range of Hoary Footman as the coasts of Devon and Cornwall reaching north to Pembrokeshire and formerly resident on Anglesey. The only records listed in Heath & Emmet (*op. cit.*) for Anglesey are pre-1960. I therefore contacted Doug Murray (the recorder for Anglesey), who kindly informed me that this species was last seen on Anglesey "new Holyhead" in 1949. Given the ideal habitat for the insect at the site and the lack of migrants present on the night in question (only a single Silver Y *Autographa gamma* was caught), it seems highly possible that Hoary Footman is still resident at South Stack.– ADRIAN WANDER, 5 Almond Grove, Weaverham, Cheshire CW8 3ET.

Two uncommon immigrants to Westmoreland (VC 69)

I had the good fortune to attract two rarities to my garden m.v. light here in Grange-over-Sands (O.S. grid reference SD 401768) recently. On the night on 7/8 June 2000, a male Ni Moth *Trichoplusia ni* (Hb.) was taken. I nearly failed to see it as, resting on the inside wall of the trap it looked like a small, rather worn Silver Y *Autographa gamma* (L.). Working on the principal that anything which looks odd should be boxed and examined more closely indoors, I confirmed that the insect was indeed *T. ni*. So far as I know this is only the third specimen to be recorded in Westmoreland (VC 69). Bernard Skinner took an example at light at Witherslack on 7 July 1968 (*Ent. Rec.* **81**: 110). The second record is from South Walney Nature Reserve, where one was taken in the light trap there by the then-warden, W. Makin, on 17 June 1996.

The second rarity to my trap was a female Bedstraw Hawk-moth *Hyles gallii* (Rott.), on 17/18 July 2000. The moth was a little tattered, at least in part owing to the fact that she was emulating the habits of the May bugs *Melolontha* spp. and had become partly stuck in the down spout of the rain funnel in the trap. *H. gallii* has been much more frequently recorded than *T. ni* in this district. The hawk-moth is more usually found in the larval stage and in general on the coastal sandhills of the district.– NEVILLE L. BIRKETT, Beardwood, Carter Road, Grange-over-Sands, Cumbria LA11 7AG.

Crescent Dart *Agrotis trux* ssp. *lunigera* Steph. (Lep.: Noctuidae) in Staffordshire

A female Crescent Dart *Agrotis trux lunigera* Stephens was caught in a moth trap at Norton near Stourbridge, Staffordshire (VC 39) by Mr D. N. Friday on 24 July 2000. This constitutes only the second record for the Vice-county; the first being at Himley Hall on 20 July 1981. Both these records are extraordinary given the usually coastal distribution of the species. They also indicate that Crescent Darts may be more migratory than is generally appreciated. The latter record occurred at a time when Humming-bird Hawk-moths *Macroglossum stellatarum* L. were also being widely reported.– DAVID EMLEY, School of Earth Sciences and Geography, Keele University, Keele, Staffordshire, ST5 5BG (E-mail: d.w.emley@esci.keele.ac.uk).

SUBSCRIBER NOTICE

Fisher's Estuarine Moth *Gortyna borelii lunata* Freyer

As a part of my continuing research into the biology and ecology of Fisher's Estuarine Moth *Gortyna borelii lunata* Freyer (see *antea*: 93), I am currently trying to find out if *G. borelii* feeds as an adult. In spite of many hours in the field observing the moths I have not observed them feeding and it does not seem as if anybody else has either. I would be very keen to hear from anyone who has – either in the field or in captive stock.– ZOE RINGWOOD, Writtle College, Writtle, Chelmsford, Essex CM1 3RR. (E-mail: zoe@orbweb.freeserve.co.uk)

RHAGOLETIS MEIGENII (LOEW, 1844) (DIP.: TEPHRITIDAE) REDISCOVERED IN BRITAIN

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ON 19 JUNE 2000, I swept a small tephritid fly from dense herbage on "Goose Island", one of three, small, man-made islands on the ornamental lake in London's Battersea Park (O.S. grid reference TQ 2877, VC 17 – Surrey). It worked, in the key by White (1988), to a small and lightly-marked male *Rhagoletis meigenii*, a species thought to be extinct in Britain. According to various works (e.g. Hendel, 1927; Séguy, 1934; White, 1988), this fly breeds in the fruits of barberry *Berberis vulgaris* L., an uncommon and only doubtfully native plant in Britain. A return visit to the island on 6 July 2000 failed to find any further specimens of the fly, or indeed any *Berberis* plants.

Another visit to the island on 17 July 2000 again failed to find either fly or host plant. However, many exotic *Berberis* bushes are widely planted elsewhere in the park's ornamental gardens and from one of these bushes, later identified as *Berberis thunbergii* DC, another *Rhagoletis* was swept. This specimen, a large and strongly marked female, confirmed the identification.

White (1988), Falk (1991) and Clemons (1996) all relate that the only known record of this insect is a single male collected at Lyndhurst, Hampshire, in 1897. Falk (1991) and Clemons (1996) also give an unconfirmed record from Moseley, Worcestershire, in 1908, but both agreed that the fly was undoubtedly extinct in Britain, if, indeed, it ever was a truly established native species. The discovery of two specimens, male and female, on different dates and from slightly different localities must indicate that the insect is firmly, if not well-established, in Battersea Park.

Battersea Park

As an ornamental garden, Battersea Park contains a large number of garden and exotic plants. The Park was created in 1846 when spoil from the newly dug Surrey Docks at Rotherhithe was used to landscape and fill what had previously been the open-aspect Battersea Fields, an oft-cited locality in many Victorian natural histories. In 1854, the carriage drives, lake and several large mounds, which still define the park's landscape today, were laid out. The park was officially opened by Queen Victoria in 1858. It seems unlikely that the fly could have existed undetected in the locality from that date.

The last major horticultural work carried out in the park is likely to have been done in 1950/51, when Battersea Park hosted the pleasure gardens for the Festival of Britain celebrations. Certainly the islands have remained largely untouched for very many years and have overgrown into dense, secondary woodland. At present major "restoration" work is being undertaken to restore the park to something resembling

its original, newly landscaped state. Much new planting has been carried out, but only of waterside and emergent plants along the lakeside. Thinning of some trees has been undertaken on the islands and, in the case of "Goose Island", where the first *Rhagoletis* specimen was found, a large area has been felled to create a sizeable clearing. This area is now shoulder high in new herb growth, largely stinging nettles, sow thistles, greater cabbage and deadly nightshade. No new planting has been carried out on the islands. No *Berberis* appears to have been planted anywhere in the park for many years. The stand of *Berberis* where the second specimen was discovered could have been laid out at any time from the 1960s to the 1980s.

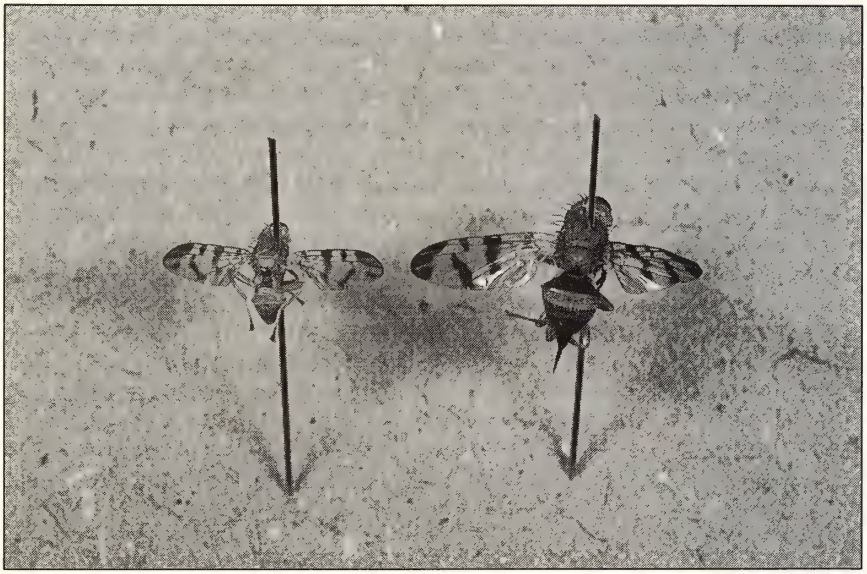

Fig. 1: *Rhagoletis meigenii* (Loew) from Battersea Park, London. Male (left) and female (right).

Origin of the Battersea population

The discovery (or rediscovery) of *Rhagoletis meigenii* in Britain prompts the questions where did it come from, how did it get here and when did it discover *Berberis thunbergii*?

On the Continental mainland, *Rhagoletis meigenii* is known from much of central and northern Europe (Hendel, 1927; Séguy, 1934). Its distribution in Europe and its spread into Britain is most likely to have been constrained by the limited abundance of its natural foodplant. *Berberis vulgaris* occurs throughout Europe, except the extreme north, but is rare in the Mediterranean region (Clapham et al., 1989; Stace, 1991). In Britain it is widespread in hedges, but is everywhere very local. There is no full agreement on its British status; Clapham et al. (1989) suggest that it is possibly native in a few places in England, whilst Stace (1991) reports that it is probably

introduced and anyway is long naturalised here. Ironically, it was probably more common in previous times, having been widely planted for its berries. However, at the end of the 19th century it was blamed by farmers as being an alternative host for a widespread smut on wheat and was vigorously grubbed up. Despite initial scepticism by the scientific and agricultural authorities, the farmers' fears were later proved to be correct. Our "native" Barberry, *Berberis vulgaris*, is widespread, but still very uncommon. However, *Berberis thunbergii* is widespread and abundant. Originally a native of Japan, this tough and thorny bush is now often mass planted in parks and gardens for its spikes of flowers, and later berries. Both the typical green-leaved form and the purple-leaved cultivar *atropurpurea* were planted in the bed where the second *Rhagoletis* was found. Many other *Berberis* species are also planted in parks and gardens throughout the United Kingdom. The 1897 record from Hampshire suggests that the fly can reach Britain either on its own or by some human agency. Situated in central London, Battersea Park and surrounding gardens are full of imported exotic plants and it must be expected that the mass movement of horticultural material will also move invertebrates around too. Battersea Park is already home to a growing band of odd invertebrate hitch-hikers and invaders, including the Australian terrestrial amphipod *Arcitalitrus dorrieni* Hunt (Jones, 1999a), the Australian scarabaeid beetle *Saprosites mendax* Blackburn(Jones, 1999b) and an African ichneumon *Ctenochares bicolorus* (L.) (Jones, in press).

The occurrence of *Rhagoletis meigenii* on *Berberis thunbergii*, a novel foodplant record, suggests that it may have developed a taste for something new. Perhaps this distinctive little tephritid will become well and truly established in Britain this time round.

Acknowledgements

Robert Wells, project manager for the Battersea Park restoration project commissioned the survey of Battersea Park and its islands and arranged access; London botanist Nick Bertrand located and then identified the *Berberis thunbergii* and Ian White of the Natural History Museum re-confirmed the flies' identification.

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Sarcophaga subulata Pandellé (Dip.: Sarcophagidae): Probable first record for West Kent and the London area

On 3.vii.1967, I took a single male of this rare species, probably better known to many as *S. laciniata* Pand., in a shrubbery in my former garden at Blackheath in this district – also a favourite haunt of *S. rosellei* Böttcher in the garden. Van Emden (1954. *Hand. Ident. Brit. Insects,* **10**(4a): 113), who provides very useful figures, notes only six records of the present species from four counties, of which that for Kent concerns the eastern vice-county (Ham Street). Laurence Clemons, to whom I am grateful for much information, tells me that this last record (1937) is due to C. J. Wainwright, and that he has himself taken the species in East Kent, on three occasions.– A.A. Allen, 49 Montcalm Road, Charlton, London SE7 8QG.

Notes on breeding the Small Ranunculus *Hecatera dysodea* (D.&S.) and the Flame Brocade *Trigonophora flammea* (Esp.) (Lep.: Noctuidae)

Rob Dyke kindly gave me eight pupae of *Hecatera dysodea* obtained from Stone Marshes in Kent at the end of 1998. Five emerged in the summer of 1999 during May, June and July and a sixth emerged the following year on 26 May 2000. Two pupae failed to hatch. Brian Warne was given six pupae by Barry Goater in the spring of 1999. One emerged that year, but the other five hatched during the summer of 2000 giving further evidence that this species can spend two years as a pupa. Whether this is the case in the wild remains to be seen, but it is probably most likely.

On 26 October 1999 I captured a female *Trigonophora flammea* at light at Freshwater, which laid over one hundred ova. Many of these, or young larvae, were distributed to other collectors and I kept about forty for myself. About thirty of these were kept indoors in the hall, by the front door, and they fed up quickly on coarse grasses and buttercup, then finally on privet in the final two instars. The first pupated in March and the first emerged on 19 June 2000. The remaining larvae I kept in the outside greenhouse in the cold. These fed up more slowly and pupated at the end of May and the first of this batch emerged on 15 August 2000. The last to emerge was on 27 September 2000. I had very few casualties and it seems that forcing this species presents no problem. I was successful in breeding them both that way and by keeping them cool in the winter months.–S.A. Knill-Jones, Roundstone, 2 School Green Road, Freshwater, Isle of Wight PO40 9AL.

ARGYRESTHIA TRIFASCIATA STDGR., 1871 (LEP.: YPONOMEUTIDAE) NEW TO HERTFORDSHIRE (VC 20) AND SOUTH ESSEX (VC 18), WITH FURTHER RECORDS FROM LONDON (VC 17, 21) AND WITH A SUMMARY OF ITS BRITISH DISTRIBUTION AND STATUS

[1]Colin W. Plant, [2]Martin R. Honey & [3]Geoff Martin

[1] 14 West Road, Bishop's Stortford, Hertfordshire CM23 3QP

[2&3] The Natural History Museum, Department of Entomology, Cromwell Road, London SW7 5BD.

TWO MALES OF *Argyresthia trifasciata* Staudinger presented themselves at CWP's garden light trap in Bishops Stortford, at around 11 pm on 15 May 2000. This constitutes the first record of the moth for Hertfordshire (VC 20). A stand of mature *Cupressocyparis leylandii* trees was a mere three metres from where the trap was situated. A few days later, Brian Elliott, in a telephone conversation with Dennis O'Keefe (pers. comm.), also recorded the species presence in Hertfordshire, stating that the moth was present "in dozens" around a coniferous shrub in his daughter-in-law's garden in Letchworth. There were also signs of feeding, i.e. brown tips to the plant shoots.

On the night of 19 May 1999 MRH, who runs a light trap in the grounds of The Natural History Museum, London, found, among the 19 species of Lepidoptera trapped that night, a single specimen of an unrecognised *Argyresthia* species. The specimen was retained and was later identified, using the plates in Emmet (1996: pl. 10, fig. 8) and from a comparison of the specimen with others in the Museum's British collection, as *Argyresthia trifasciata*. Subsequent research has shown that the specimen is the second record of this species for Middlesex (VC 21). A further specimen was taken at the same locality on 12 May 2000.

On the morning of 7 May 2000 GM found in his garden m.v. trap at Plaistow, South Essex (VC 18), a specimen of an unrecognised *Argyrethia* species. It was later shown to MRH who was able to identify it immediately as *Argyresthia trifasciata*. This specimen constitutes the first record for VC 18, further specimens were taken in the same location on 14 May and 19 June.

This small and rather attractive moth which, when at rest in a moth trap, may perhaps be overlooked by the inexperienced Lepidopterist as a peculiar *Phyllonorycter* species, is evidently becoming widespread in Britain and, since its first appearance at Ray Softly's balcony trap in Hampstead, north London, has spread (or been spread) as far north as Aberdeen. Whilst its origins and the cause of its spread may remain open to discussion, it would seem sensible to pull together, at this relatively early stage, all the available records of the species into a single summary, so that future researchers may be able to locate the early records rather more easily.

After the publication of the original article adding *A. trifasciata* to the British list (Emmet, 1982), 15 years elapsed before the second specimen was discovered in Heald Green, Greater Manchester (VC 58) (Shaw, 1999). Since then there have been reports of numerous further examples from a total of 14 separate vice-counties. The following summary is an attempt to list, in chronological order, all known British records of

Argyresthia trifasciata, though there will almost certainly be additional records of which we are unaware. Some of these records are previously unpublished and we are grateful for the permission to publish them, and some were found from web sites as indicated. This highlights the problems of recording in general and of publishing records in particular.

Hampstead, Middlesex (VC 21), [3] June 1982, R. A. Softly (first British record. Reported by Emmet, 1982).

Heald Green, Cheadle, Greater Manchester, Cheshire (VC 58), 19 June 1997, (Shaw, 1999: 74). The record for Stockport, 19 June 1997, attributed to B. T. Shaw, and incorrectly given as relating to VC 57 in the Microlepidoptera review of 1997 (Langmaid & Young, 1999a: 109), but corrected later (Langmaid & Young 1999b: 258), refers to this example.

Farnborough, North Hampshire (VC 12), 20 May 1998 [and one earlier in May that escaped and so is unverified] (Parfitt, 1999; Langmaid & Young, 1999b: 252).

Raynes Park, Surrey (VC 17), 20 and 23 May 1998, four examples (Parsons, 2000) – also reported by Langmaid & Young, 1999b: 252, and exhibited at the 1998 Annual Exhibition of the British Entomological and Natural History Society.

Castlegate, Prestbury, Cheshire (VC 58), two on 18 May 1999 and nine more on subsequent nights. A hedge of "Leylandii" surrounds the garden (Poynton, 1999).

Raynes Park, Surrey (VC 17), 28.v.1998 (M. Parsons, pers. comm.).

The Natural History Museum Wildlife Garden, South Kensington, Middlesex (VC 21), 19 May 1999, M. R. Honey (mentioned in Paston, 1999).

Colchester, North Essex (VC 19), 26 May 1999 (Goodey, 2000; Langmaid & Young, 2000: 194).

Norwich, East Norfolk (VC 27), 28 May 1999 (Paston, 1999; Langmaid & Young, 2000: 194).

Bucksburn, Aberdeen (VC 92), 3 June 1999, at rest on *Cupressocyparis leylandii* (Palmer, 1999; Langmaid & Young, 2000: 194).

Northampton (VC 32), 3 June 1999, G. Boyd (Langmaid & Young, 2000: 194).

Chessington, Surrey (VC 17) [two specimens, undated 1999] (Porter, 2000).

Plaistow, South Essex (VC 18) 6 May 2000, G. Martin (here reported).

Raynes Park, Surrey (V. C.) 6/7.v.2000 (Mark Parsons, pers. comm.).

Petts Wood, West Kent (VC 16), 8 May 2000, D. O'Keeffe (pers. comm. to MRH, unpublished record held by John Langmaid).

South Kensington, Middlesex (VC 21) on 12 May 2000 a further specimen, M. R. Honey (here reported).

Castlegate, Prestbury, Cheshire (VC 58), one in the Rothamsted Insect Survey light trap in the week ending 14 May 2000 (S. Palmer, pers. comm.).

Plaistow, South Essex (VC 18) 14 May 2000, G. Martin (here reported)

Bishops Stortford, Hertfordshire (VC 20), 15 May 2000, two males, C. W. Plant (here reported)

Buckhurst Hill, South Essex (VC 18), 20 May 2000, G. Beccaloni (det. GM, here reported)

Letchworth, Hertfordshire (VC 20) 22 May [2000?] (Brian Elliott pers. comm. via D. O'Keefe to MRH "in dozens around a coniferous shrub in his daughter in law's garden where there are also signs of feeding (brown tips)").

Flixton, Greater Manchester (VC 59) 12 & 14 May 2000 singletons at mv light by Kevin McCabe (Ian Kimber pers. comm.; Stephen Palmer, microlepidoptera recorder for Lancashire, pers. comm.; and Lancashire Moth Group Newsletter, Nov. 2000).

Buckhurst Hill, Essex (VC 18), 13 June 2000, G. Beccaloni (det. GM, here reported).

Littleborough, Lancashire (VC 59), 16th June 2000 (Ian Kimber pers. comm.). This specimen is illustrated in colour on Ian's web site (UKmoths) (URL http://www.ukmoths.force9.co.uk) a second individual was caught two nights later (18 June 2000).

Plaistow, Essex (VC 18) 19 June 2000, G. Martin (here reported).

Walberton, W. Sussex (VC 13) 2000 (no date available), John Radford (pers. comm. via Mark Parsons to MRH).

Undated record

Eakring & Kersall district, Nottinghamshire (VC56) (no date available) from: http://www.eakring99.freeserve.co.uk/MOTH%20LIST.htm

The distribution of these records is presented in Figure 1.

Many of the specimens recorded to date have been collected from gardens or primarily urban locations and are thought to be specimens emerging from recently introduced, infested plants. The disjunct distribution, involving no fewer than 14 vice-counties, is mainly centred in the southern half of Britain and especially around the Greater London area, with the most surprising record being from Aberdeen. This would also suggest a species that is being transported artificially, perhaps on *C. leylandii* plants from garden centres, rather than one which is spreading naturally after either unaided arrival or accidental introduction. Obtaining proof of such introductions is often difficult. The first specimen of *trifasciata* from The Natural History Museum garden in May 1999 was quite unexpected and initially thought unlikely to have been a recent introduction as most of the juniper in the garden had been planted in a chalk

grassland area in 1994/95. Two additional juniper shrubs, however, were planted in 1998 in a small island bed adjacent to where the trap had been in operation. These plants had been purchased from Natural Surroundings, a wildlife garden centre near Holt, Norfolk. Perhaps it is pure coincidence, but GM, who first trapped the species in his garden in May 2000, had also recently purchased a native Juniper plant from the same garden centre. Stuart Paston was kind enough to contact the company and was informed that their stock came from the only supplier of British provenance Juniper, a nursery in Hampshire.

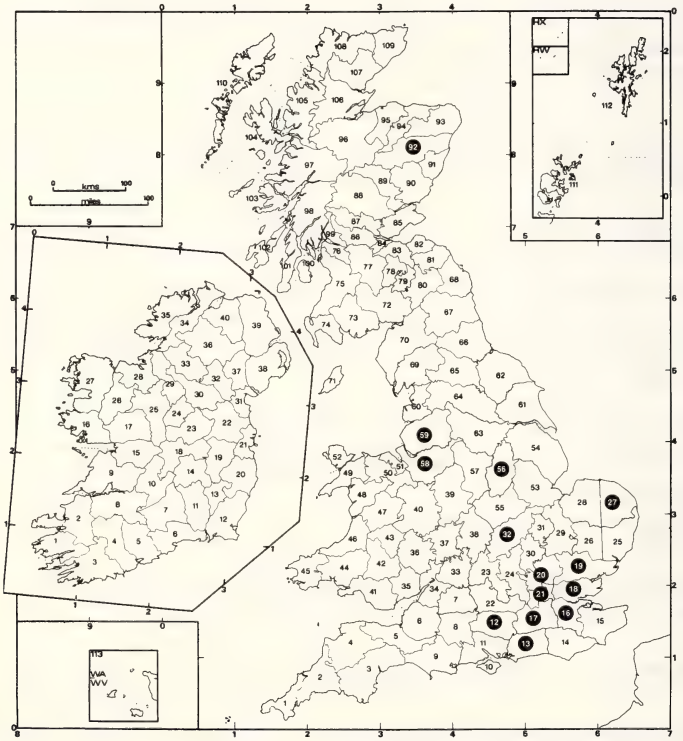

Fig. 1. Known distribution, by Vice-County, of *Argyresthia trifasciata* Stdgr. in the British Isles at November 2000.

The spread of this species has not just been confined to Britain as it is also expanding (or being introduced), to other parts of northern Europe. Parsons (2000) cites references to it as new to the Netherlands in 1982 (the same date as its occurrence in Britain, another coincidence?) and Denmark in 1987. Svensson (1994) recorded it as new to Sweden in 1993 and it is supposed to be found in Germany and Belgium. It also occurs in France, Spain, Switzerland, Austria and possibly Italy.

Alford (1991), in his book on pests of ornamental trees and shrubs, gives details of the life history, damage (figured) and control measures. The written description he gives of the adult "fore wings blackish, each marked with whitish crosslines" is erroneous and no doubt based on the photograph reproduced as a half-tone illustration in Emmet (1982), rather than the accurate description given there "fore-wings glossy golden". Sokoloff (1992) also discusses briefly its pest status in the Netherlands and cites damage to *Chamaecyparis*, *Cupressocyparis* and *Thuja*, as well as to *Juniperus*.

After publication of a paper (Agassiz & Tuck, 1999), in which another *Cupressus* feeding *Argyresthia* species was added to the British fauna, (*A. cupressella* Wals.), we became aware that there is a legal requirement, under Article 20 of the Plant Health (Great Britain) Order 1993, to notify the Ministry of Agriculture Fisheries and Food (MAFF) of pests/potential pest insects (i.e. "any plant pest which is of a description specified in Schedule 6, or which is not normally present in Great Britain"). The occurrence of *Argyresthia trifasciata* was mentioned to Justine Clark of the Invertebrate Identification Team, Central Science Laboratory, and she has since informed the Plant Health Division of the MAFF. A copy of this paper will be forwarded to the PHD for information.

Acknowledgements

The authors are most grateful to John Langmaid for much helpful information and for previously unpublished records of this species, as well as to George Beccaloni, Dennis O'Keefe, John Radford, Brian Elliot, Mark Parsons, Stephen Palmer and Ian Kimber for details of their unpublished records.

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Parfitt, R.W., 1999. *Argyresthia trifasciata* Stdgr. (Lep.: Yponomeutidae) new to Hampshire. *Entomologist's Rec. J. var.* **111**: 44.

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Paston, S., 1999. *Argyresthia trifasciata* Stdgr. (Lep.: Yponomeutidae) new to Norfolk. *Entomologist's Rec. J. var.* **111**: 238.

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The Light Knot Grass *Acronicta menyanthidis* (Esp.) (Lep.: Noctuidae) in Norfolk

Seven light traps (three mercury-vapour bulbs and four actinics), were operated at Dersingham Bog, Norfolk (grid reference TF 665283) on the very foggy night of 8 May 2000. Dersingham Bog is an extensive area of acid bogland, managed by English Nature, with flora typical of this habitat, including Cotton grass *Eriophorum* sp. and Bog Myrtle *Myrica gale*. It is one of only a handful of such sites in north Norfolk. We were hoping to encounter the somewhat local plume moth *Buckleria paludum* (Zell.), which feeds as a larva on sundew *Drosera* spp., and can also be seen during daylight. No examples of the plume moth were seen, but we were quite surprised when we visited one of the more secluded mercury vapour traps out on the bog amongst boggy Heather *Calluna vulgaris*, and discovered a very fresh looking Light Knot Grass.

The British distribution of this species is not now much altered from that presented by Heath & Emmet (1983. *Moths and Butterflies of Great Britain and Ireland* (*MBGBI*), volume 10, distribution map on page 138). In this work, records are shown confined to the north and west of a line drawn between the Humber and the Severn, with a single pre-1970 locality shown for Norfolk in grid square TF91. Records are also shown for Ireland. The Norfolk records are, therefore, apparently worth reviewing here.

The record shown in *MBGBI* is that included on a recording card submitted to Monks Wood by K. C. Durrant and gives a list of macro moths for the 10-km square TF91, which he labels "East Dereham area: arable with small plantations". The records come from the period 1940-1960, but there is no further information of relevance.

In the nineteenth century, single larvae were found at Hickling Broad (grid reference TG42) and Barton Turf (grid reference TG32) in about 1870, and an adult was reared so confirming the records (Barrett, 1901. *Lepidoptera*. In *Victoria County History* **1**: 135-162). Bog myrtle still grows at Barton Turf, though no longer at Hickling. These records evidently escaped the compilers of *MBGBI*.

The moth is known currently from Roydon Common (grid reference TF 6922), which lies some six kilometres to the south-east of Dersingham. Bernard Skinner attracted twenty adults to a single light on 13 June 1980 (of which two were the melanic ab. *suffusa* Tutt), whilst Gerry Haggett informs me that several have been

taken since, including by himself in 1992 and 1993. I therefore visited Roydon Common myself on 15 May 2000 to see if I could demonstrate its continuing presence and was delighted to capture four examples – all of the typical form. As much a surprise was a Flame Wainscot *Mythimna flammea* (Curtis) at the sheet, rarely known away from the Broads and the fens of Cambridgeshire. A Barred Hook-tip *Watsonalla cultraria* (Fabr.) also came to light as well as a good selection of moorland/heathland tortrix moths such as *Ancylis uncella* (D.& S.), *A. unguicella* (L.). *Pseudococcyx turionella* L.), *P. posticana* (Zett.), *Epinotia rubiginosana* (H.-S.) and *Acleris rufana* (D.& S.). In spite of being known to a select, though evidently fairly wide, circle of entomologists, it would appear that the existence of this locality has never before made it in to print?

There do not appear to be any other records of this species away from north-west Britain.

I am most grateful to Mark Telfer at the Biological Records Centre, ITE Monks Wood, to Gerry Haggett, Bernard Skinner and Colin Plant for helpful information on the Norfolk records of this species.– JON CLIFTON, Kestrel Cottage, Station Road, Hindolveston, Norfolk NR20 5DE.

The Nine-spotted *Amata phegea* (L.) (Lep.: Ctenuchidae) in Essex

Mr Peter Smith recently passed to me a photograph taken in the Clacton-on-Sea area of an adult moth, apparently *Amata phegea*, sitting on a cluster of developing blackberries. The image was taken on 24 July 2000 by Mr R. Goodson. Mr Goodson at first thought the insect was a butterfly, but fellow amateur photographer Mr R. Cowling recognised it as being a moth and sought confirmation with Mr E. Sewell, who realised the possible importance and showed the picture to Peter. Peter made some enquiries and acquired the slide, and with his help I was able to interview Mr Goodson and find out a little more of the circumstances, although by now two months had passed. Mr Goodson, who was not at all interested in the record and found the fuss his picture had generated rather a surprise, is retired and noticed the insect during a cycle ride, the purpose of which was to try out his new camera with some shots of the local railway. Having a lens with macro capability allowed Mr Goodson to take a sharp, well-exposed picture of what we assume is most likely to be *Amata phegea*.

The only other British occurrence of *A. phegea* was on the Kent coast between Folkestone and Dover, on 24 June 1872, when one was taken flying in sunshine (Batchelor, 1874. Entom. **7**: 88 as *Syntomis phegea* – see also Emmet & Heath 1979. *Moths and Butterflies of Great Britain and Ireland*, vol. 9: 111); that specimen is figured in South (1961. *The Moths of the British Isles*. Warne).

The distribution map given in de Freina & Witt (1987. *Die Bombyces und Sphinges der Westpalaearktis*. Verlag) shows that *A. phegea* is widespread in Europe. Although absent from Iberia, the Mediterranean islands and southern Italy, it extends eastwards from France through the entire Western Palaearctic Region, but

not extending further north than approximately latitude 50 degrees north. Thus, it is absent from Denmark and the entire coastal area of the English Channel, the North Sea and the Baltic. There are, however, two sibling species in Europe, from which *A. phegea* can only be reliably separated by examination of the genitalia. *A. ragazzi* Turati is endemic to central and southern Italy whilst *A. kruegeri* Ragg. affects Italy, former Yugoslavia, Bulgaria, Greece, Romania and eastwards around the north coast of the Black Sea. The larvae of all three species are polyphagous, though *A. phegea* is said to prefer *Rumex*, *Plantago* and *Galium* (de Freina & Witt *op. cit.*) and thus none are particularly likely to be accidentally imported to Britain with produce. Of the three, neither *A. ragazzi* nor *A. kruegeri* seem likely to be good candidates for immigration to Britain. On the basis of all this information, the identification of the Essex specimen as *A. phegea* is considered to be about 99% certain.

I am grateful to Colin Plant for drawing my attention to the existence of the two sibling species of *A. phegea* in Europe, and for providing biological and distributional information on all three.– BRIAN GOODEY, 298 Ipswich Road, Colchester, Essex CO4 4ET. (brian.goodey@dial.pipex.com)

The larval habitat and biology of *Anoplodera livida* (F.) (Col.: Cerambycidae)

It would seem that no proper account has yet appeared in British works of the very unusual life-history, recently discovered, of the above-named smallish longicorn – better known to most of us as *Leptura livida*. The natural assumption had been, up to lately, that it develops in dead wood, stumps, boughs or twigs like the vast majority of its family. I therefore reproduce here a brief account freely translated from Klausnitzer and Sander (1981), kindly furnished by Dr R.R. Uhthoff-Kaufmann. The beetle's life-history was worked out in detail by B. Burakowski, 1979 *Ann. Zool.* **35**: 25-42.

"Researches have revealed an extraordinary metamorphosis, quite unlike that of any normal *Leptura* species. Egg, larva and pupa are described in detail. The female with her specially adapted ovipositor lays her eggs in meadowland, preferably on bare, sunbaked patches, from July until August; dried earth particles adhere to the egg's chorion; it hatches in ten days' time. Any other information regarding the early stages of this beetle is entirely untrue. The larva is found at a depth of 2-6cm where it feeds on the mycelium of the fungus *Marasmias oreades* Bolt, already established, and perhaps on some humus fragments and the dead roots of the fungus.

Larval growth lasts two years; in the second winter it constructs an earthen cell, 2-5cm underground, and in the following spring weaves a parchment-like pupal case inside the earthen cell. During April and May, the imago emerges from its cocoon into the open after some ten days, towards the end of May or beginning of June. The adult takes a week to attain full coloration and is then found on flowers."– A.A. ALLEN, 49 Montcalm Road, Charlton, London SE7 8QG.

The occurrence of *Oedemera* species in Surrey (Col.: Oedemeridae)

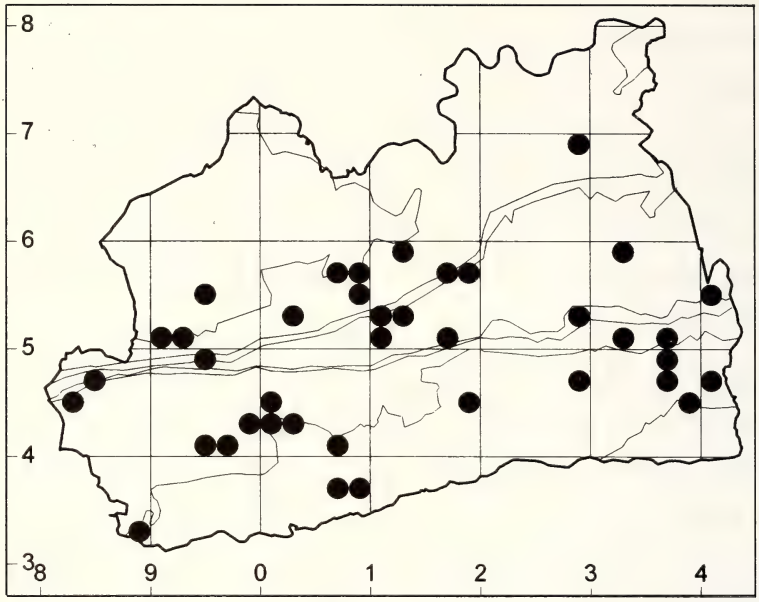
I noted with interest Laurence Clemon's article (*Ent. Rec.* **111**: 141-143) on the occurrence of *Oedemera* species in Kent. This prompted me to look at the records I hold for Surrey. These records, which were collected on an *ad hoc* basis in the course of recording hoverflies from 1985 to 1999, may not be fully representative; however, they are probably sufficient to give a fair idea of overall distribution of both *O. nobilis* (44 records) and *O. lurida* (69 records). Both species occur throughout the summer months from early May through to August (see Table 1). The data for *O. nobilis* suggest that this species may have two broods a year, whilst the picture for *O. lurida* is less clear, but it is possibly multiple brooded.

In Surrey, *O. nobilis* occurs widely across the Chalk, Lower Greensand and the London and Wealden clays (see Map 1), but would appear to be poorly represented on the Bagshot Sand and within the London suburbs. Overall distribution does not correlate with the distribution of commoner thermophilic species or those associated with dry habitats; rather, it seems to coincide more with grassland habitats with no obvious affinities to either hard rock or drift geology. Habitat notes include woodland rides and open grasslands. Adults are regular flower visitors and I have noted visits to dog rose *Rosa canina,* upright hedge parsley *Torilis japonica,* perennial sow-thistle *Sonchus arvensis* and ox-eye daisy *Leucanthemum vulgare.*

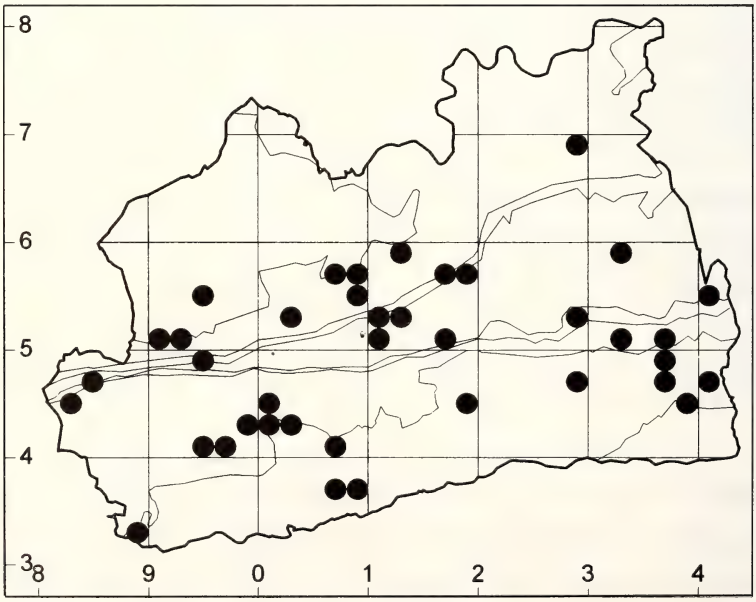
Oedemera lurida																			
	May				June					July				August					Sept.	
Week	1	2	3	4	1	2	3	4	5	1	2	3	4	1	2	3	4	5	1	2
Recs.	–	1	7	4	5	5	4	2	5	1	7	3	5	4	7	3	–	4	2	–
Oedemera nobilis																				
	May				June					July				August					Sept.	
Week	1	2	3	4	1	2	3	4	5	1	2	3	4	1	2	3	4	5	1	2
Recs.	1	1	1	4	–	9	4	3	5	–	–	4	3	4	2	1	1	1	–	–

Table 1. Weekly records of *Oedemera* spp. in Surrey. Week 1 starts on 1 May and the week numbers follow sequentially.

It is apparent that *O. lurida* is much the commoner species (Map 2), which seemingly occurs more extensively into the London suburbs and north Surrey. Records suggest that it may be more frequently associated with ruderal habitats such as waste ground and roadside verges. The only note I have for flower visits is to ox-eye daisy *Leucanthemum vulgare*.– Roger K.A. Morris, c/o 241 Commonside East, Mitcham, Surrey CR4 1HB.



Map 1. Distribution of *Oedemera noblis* in Surrey.



Map 2. Distribution of *Oedemera lurida* in Surrey.

STICTOPLEURUS PUNCTATONERVOSUS (GOEZE, 1778) (HEM.: RHOPALIDAE) BREEDING IN MIDDLESEX

RICHARD A JONES

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I SWEPT TWO specimens of a *Stictopleurus* from the flowery area of rough grassland on the embankment of the River Thames, next to Chelsea Power Station (O.S. grid reference TQ 264769, VC 21 – Middlesex), on 8 August 2000. A third specimen escaped. Several more, including some nymphs, were found on a follow-up visit on 16 August 2000.

At first, I took them to be *Stictopleurus abutilon* (Rossi), which I had previously found elsewhere in the London conurbation in West Acton and Woolwich (Jones, in press). But reference to Moulet (1995) showed that the Chelsea specimens were in fact *S. punctatonervosus*. This medium-sized, brown, ground bug is known, in Britain, from just a handful of specimens. Several were found during the 19th century, suggesting that it became temporarily resident in the Charlwood area of Surrey. It was listed as "extinct" by Kirby (1992), who reported that a record from Kent probably referred to *S. abutilon* and one from Essex was unsupported by a specimen. The Essex specimen was later discovered to be a misidentification of *Rhopalus subrufus* (Gmelin) (Kirby, 1997).

However, the bug was rediscovered in Britain in 1997, when three specimens were found in separate localities in North Essex (Bowdrey, 1999), suggesting that it had again become established. Jerry Bowdrey visited The Moors, Colchester, in that county, on 21 September 2000 and located two adult *Stictopleurus punctatonervosus*, so it still appears to be thriving in at least one site (Bowdrey, pers. comm.).

Careful examination of the Chelsea specimens made me realise that I had actually found *S. punctatonervosus* before in the London area, but had assumed that they were *S. abutilon*. This was because I had relied on the male genitalia to identify the insects and named accompanying female by association. As it turns out, both species occurred together on the same site at West Acton, as they have on at least one other site (P. Kirby, pers, comm.)

Having, now, a number of specimens of both sexes of both species, it is clear that *S. punctatonervosus* is the more widespread species in London, and I also have two specimens from Woodlands Farm, Bexley (TQ 4476, West Kent, VC 16), 7 July and 20 August 1998, swept in derelict farm building site, and one from West Acton, (TQ 197817, Middlesex, VC 21), 5 October 1999, swept on rough grassy railway embankment.

The insect's ecological requirements are unclear, since so little is known of its ecology, but Kirby (1992) states that the maintenance of dry, open and sunny conditions might be important, with long and short vegetation and areas of bare ground. The Chelsea population is breeding on a small (approximately one hectare) site, exactly fitting these requirements. The site is a prime example of "London

urban derelict" habitat. It had once been a riverside oil-intake terminal for the Chelsea Power Station, but since its disuse several years ago had been bulldozed and abandoned. It was now taken over with a rough growth of thin grasses, flowering herbs, some brambles and many bare areas.

The Bexley site was also a sparsely-vegetated derelict plot, and very similar in character. Once a farmyard, it had been roughly levelled or bulldozed then abandoned for several years. The West Acton railway embankment was a mixture of tall grass and bramble scrub, but with some bare areas where recent digging had taken place.

Other noteworthy species, found at Chelsea, were typical of such a sparsely vegetated London site and included the local shieldbugs *Aelia acuminata* (L.) and *Podops inuncta* (Fabr.); the mainly coastal rhopalid bug *Chorosoma schillingi* (Schum.); the recently established lygaeid *Nysius senecionis* (Schilling); the clouded yellow butterfly *Colias croceus* (Geoff.); the nationally scarce sphecid *Gorytes bicinctus* (Rossius) and its cuckoo parasite *Nysson trimaculatus* (Rossius); the nationally scarce eumenid wasp *Microdynerus exilis* (H.- S.); the nationally scarce Adonis ladybird *Adonia variegata* (Goeze); the *Red Data Book* (RDBK – insufficiently known to categorise) beetle *Olibrus flavicornis* (Sturm); and the uncommon pill woodlouse *Armadillidium nasatum* Budde-Lund. All are warmth-loving species, characteristic of the sparsely vegetated, dry, well-drained plots which are London's threatened ruderal habitats.

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Bruchidius varius (Ol.) (Col.: Bruchidae) in south-east London

This recent addition to our list was discovered in East Sussex in 1994 by P.J. Hodge (*Coleopterist* **5**(3): 65-8). The description and admirable figures there given show it to be very distinctive among our members of the family. In conversation with Mr Hodge I learnt that the species appeared to be spreading outward from Sussex, so – given that the chief foodplant, red clover, often grows freely on Woolwich Common here – it was not wholly unexpected when among my captures there on 10.vi.2000 a single female *B. varius* was found. Now that the species has reached this locality, it will doubtless be encountered again in due course.– A.A. Allen, 49 Montclam Road, Charlton, London SE7 8QG.

A concentration of the Wall Brown *Lasiommata megera* L. (Lep.: Nymphalidae) in Cambridgeshire, August 2000.

The recent note by Chris Tyler-Smith concerning the scarcity of the Wall Brown butterfly in central England from 1997 to 1999 (*antea:* 207-208) prompted me to record an observation made in Cambridgeshire this year.

On 10 August, at 11.00 am, I walked along the bank of the Old Bedford River, the northern boundary of the Ouse Washes Nature Reserve, to see which butterflies were feeding on the teasel, thistle and ragwort plants that abound here. The steep bank rises to some twenty-five feet above ground level and runs from south by south-west to north by north-east, creating a warm, south-easterly aspect. The banks are lightly grazed by cattle in summer; no shrubs are present, but stands of the above mentioned perennials are extensive. Cattle have worn their tracks into the bank at various levels and created bare patches close to the river's edge, surrounded by coarse grasses.

The weather was fine and warm. It was soon obvious that a number of Wall Browns were present and in little more than a quarter of a mile of walking at least fifteen were noted. Care was taken to avoid double-counting in view of the species' habit of "accompanying" observers by flying a short distance ahead, settling and reappearing. If anything, the count underestimates the number present. Males and females were seen in approximately equal numbers. No oviposition was observed, but females were watched fluttering close to the ground, particularly where grass grew over the indentations made by cattle's hooves; this habit is described in Heath and Emmet (1990. *Moths and Butterflies of Great Britain and Ireland*, **7(1)**: 250). No doubt egg-laying was taking place, and it is unfortunate that these banks are invariably flooded for several weeks each winter and spring. Presumably this would result in the loss of over-wintering larvae.

The Wall Brown was not uncommon in this part of Cambridgeshire in 2000. Several other records involving smaller numbers were made, but it is interesting that they were all associated with bare earth on tracks and droves, close to arable fields. – ROBERT PARTRIDGE, 11 New Road, Mepal, Ely, Cambridgeshire CB6 2AP.

Is this the return of the Wall Brown *Lasiommata megera* (L.) (Lep.: Nymphalidae)?

Whilst participating in a butterfly count on some waste ground on Canvey Island, Essex, I was very pleased to see a few freshly emerged Brown Argus. Many Peacock, Green-veined White, Orange-tip and Large White were also present, but the greatest delight was the recording of sixteen-plus Wall Brown. This species has been thin on the ground in recent years and so it was a surprise to observe so many on one count. It generally seems to be mainly coastal at the moment, perhaps this year may give us a population spread.

One of the rarest butterflies this spring in this part of Essex has been the Small Tortoiseshell. Last summer and autumn this species was low in numbers and at the time of writing this note (27 May), I have not seen a single larval nest anywhere during my many local rambles.– D.G. DOWN, Aegeria, 16 Woodend Close, Thundersley, Essex SS7 3YA.

Red-necked Footman *Atolmis rubricollis* (L.) (Lep.: Arctiidae) in Essex

On the night of 17 June 2000, with two other members of Essex Moth Group, Ian C. Rose and Reg Fry, a mercury-vapour lamp and a trap were run at Bunting's Meadow, Lexden, Colchester from 10pm until midnight to monitor the moth population in this municipal open space and small nature reserve, which is owned by Colchester Borough Council. The 25 acres of grassland, hedgerows, flowery banks and field margins and three small spinneys adjoin a larger Council-owned open space and invertebrate reserve known as The Hilly Fields. The Bunting's site once covered 52 acres and was a seed production farm and a trial ground for flower and vegetable varieties.

Among the night's total of 54 species (macros and micros) was a fresh specimen of the Red-necked Footman *Atolmis rubricollis* found in Reg Fry's Robinson trap. This is only the second record for Essex for the past two decades, the other being from Friday Wood, south of Colchester, recorded by B. Goodey and R. Arthur on 27 June 1986. Single specimens, probably immigrants, were recorded by A.J. Dewick at his Bradwell-on-Sea light in 1951 and 1952.

In case the Lexden specimen of *rubricollis* could indicate possible residency rather than being an immigrant or vagrant, Ian Rose and I returned to Bunting's Meadow with an m.v. lamp on the night of 19 June. No luck with *rubricollis* on this occasion, but among the 42 species recorded was a Dotted Fan-foot *Macrochilo cribrumalis*. This is the first record of this usually fen and salt marsh species for this inland site, which is on the outskirts of Colchester, but close to a recently-created wetland area fed by springs.

These records from Bunting's Meadow give me much personal pleasure as I grew up before and during the war on the Bunting's farm, where my late father was the manager for 40 years and where I started my lifelong interest in Lepidoptera among the acres of flowers grown for seed.–Joe Firmin, 55 Chapel Road, West Bergholt, Colchester, Essex.

***Bledius talpa* Gyll. (Col.: Staphylinidae) – a former British species?**

That this very distinctive *Bledius* was once a member of our fauna is strongly suggested (but by no means proved), by the presence in the British beetle collection at The Natural History Museum of two ancient specimens, labelled as determined by P.M. Hammond, 1975. Most unfortunately they are without data, and in extremely bad condition through having originally been pinned and the pins removed at some later time. They are marked only "W.A. Power / B.M. 1896-69". Whether he was related to the well-known coleopterist J.A. Power I cannot say, but it would appear likely. For the above details I am indebted to my friend K.C. Lewis. *Bledius talpa* may at once be known by its dark metallic-blue elytra with long, pale, waved pubescence. It is a rare species of scattered and mainly southern distribution, but is found in (for instance) Denmark, so its occurrence in Britain can hardly be excluded.– A.A. Allen, 49 Montcalm Road, Charlton, London SE7 8QG.

Lepidoptera observed in Lanzarote during February 2000

Between 10 and 17 February 2000, I spent a holiday based at the Hotel Beatriz just inland from Costa Teguise, on the east coast of the island of Lanzarote, during which time only five species of butterfly were seen. However, for two, *Danaus plexippus* (L.) and *Cacyreus marshalli* (Butler), my observations appear to represent the first reported sightings from Lanzarote. Neither are included in publications such as Owen (1988, *Ent. Rec.* **100**: 259-260) or Baldwin (1991, *Ent. Rec.* **103**: 79-81).

A single adult *D. plexippus* was seen in the grounds of the Hotel Melias Salinas in Costa Teguise town on 11 February. This example may well have been a stray from the neighbouring island of Fuerteventura, where it has been reported by Owen (1992, *Ent. Gaz.* **43**: 87-92), though even there Owen considered that it may not be a permanent resident. Alternatively the Lanzarote example could have originated from further afield, such as from Madeira, where it known to be established. It would seem doubtful that this striking species is resident in Lanzarote. The acknowledged larval food plant was not seen during my stay and it is hardly likely to have been overlooked by previous observers. However, Owen (*loc.cit.*) reports that larvae of the related *Danaus chrysippus* (L.) feed on the cactus-like milkweed *Carraluma burchardii* on the neighbouring island of Fuerteventura; this plant also occurs in the northern half of Lanzarote.

Cacyreus marshalli is probably established on the island and is presumably a recent arrival. Two adults were seen flying around a planted *Pelargonium* sp. within the grounds of the Hotel Beatriz on 15 February, and closer examination revealed a few empty pupal cases, presumed to be of this species, on walls adjacent to other flower beds containing *Pelargonium* within the hotel grounds. The spread of this South African species and its association with planted *Pelargonium* is well known, especially in the Mediterranean area, e.g. Reid (1998, *Ent. Gaz.* **49**: 253-256), though so far as I know this is the first reported sighting from the Canary Islands. Importation of larvae on a food plant would seem a likely source of origin for the Lanzarote population. Incidentally, I have also seen adults of this species in mainland Spain, in central Barcelona, Catalonia, during October 1997; and in Mijas, Andalucía during June 1998.

The other butterflies seen on Lanzarote were: *Elphinstonia charlonia* (Donzel), a few fresh examples in the arid terrain inland from Costa Teguise on most days, with adults repeatedly seen visiting the flowers of a small yellow flowered crucifer; *Vanessa atalanta* (L.), only two – one at Costa Teguise, 12 February, and one near El Islote in the centre of the island, 13 February; and *Cynthia cardui* (L.), common around Costa Teguise most days.

Adult moths were virtually absent in and around Costa Teguise. Examination of street and hotel lights revealed only a few Silver Y *Autographa gamma* L., though on 14 February, eight approximately half-grown larvae of *Hyles tithymali* (Bois.) were found on a single plant of a bushy *Euphorbia* sp. (probably *E. obtusifolia*) growing the sea front at Costa Teguise.– A. P. Foster, 23 The Dawneys, Crudwell, Malmesbury, Wiltshire SN16 9HE.

***Chrysoteuchia culmella* (L.) (Lep.: Pyralidae) captured in September**

I was most surprised indeed to attract a single male of the very common grass moth *Chrysoteuchia culmella* to an m.v. light on 10 September 2000, whilst trapping in the grounds of Hillmead School in Bishops Stortford, Hertfordshire.

I normally associate this moth with earlier in the year and a quick check in Barry Goater's 1986 book *British Pyralid Moths* (Harley) confirmed my own experience – "Single-brooded; flies in June and July". An identical flight period is given by Palm (1986. *Nordeuropas Pyralider*. Bøger/Apollo) though the range of months is longer, from June to August, in Błezyński (1965. *Microlepidoptera Palaearctica: Crambinae*. Fromme). A conversation with Barry Goater on 14 September revealed that he was not aware of any other records of *C. culmella* so late in the year, and it thus appears that this may be the first autumn record of the species for Britain. The moth was fresh on arrival, though it has since lost its forewing cilia in the pill box!

Goater (*op. cit.*) suggests that since the moth is reported at lightships well out to sea it is evidently sometimes migratory; this could perhaps account for the present record from Bishops Stortford? There had been a number of reports of a variety of immigrant moth species in the weeks prior to this record, although the only other potential immigrant at my lights on the night in question was a single *Plutella xylostella* (L.). In June and July *C. culmella* is usually abundant, and it is perhaps surprising that only one arrived at the sheet if it represented a genuine second generation?

The record presents something of a problem for me as Hertfordshire Recorder. The sheet was laid out on the school playing field at Hillmead School, firmly in Hertfordshire, but the moth was watched flying in from under the trees of Birchanger Wood, the edge of which is defined by a fence exactly 2.7 metres from the light bulb – and beyond which is North Essex, from where records are the province of my good friends Brian Goodey and Maitland Emmet!– Colin W. Plant, 14 West Road, Bishops Stortford, Hertfordshire CM23 3QP. (E-mail: Colinwplant@compuserve.com).

***Epiphyas postvittana* (Walker) (Lep.: Tortricidae) assembling on a cool night in May**

Thursday 25 May 2000, was a fairly cool evening after a day of sunny intervals. At 21.30 hours I had just been examining a netted flowerpot of mixed larvae when I noticed a small moth flying around outside of the netting. This was soon to be joined by a second, then a third and on closer inspection they turned out to be male *E. postvittana* assembling to a freshly emerged female. I had no sooner boxed them when others began to arrive and by 22.00 hours I had a total of thirty-five specimens.

Despite this species being rather a pest in my garden, I was astonished to see so many assemble to this one female. It looks as if I am going to experience another troublesome year with my show Chrysanthemums. During 1998-99 I had a few moths of this species in my trap practically every suitable night of each month of the year, including December.– D.G. Down, Aegeria, 16 Woodend Close, Thundersley, Essex SS7 3YA.

***Judolia cerambyciformis* (Schrank) (Col.: Cerambycidae): tThe first Kent record**

This attractive longhorn is above all a western species in our islands, as a glance at Map 25 in the valuable *Provisional Atlas* of the group (Twinn & Harding 1999, Biological Records Centre) will at once show. Southern records are concentrated in Wales and the south-west, with a smaller group occupying the area of (roughly) Surrey, Berkshire and Hampshire; in the first of these it is extremely local. The occurrence of the species in Kent is thus of interest as the eastern-most British record, even though not recent: A single specimen was found (I believe, on an umbel), in Squerry's Park, Westerham, West Kent about fifty years ago, in June, by my late friend Arthur Gould, but the record I think was never published. The park is an extensive partly wooded area and it was in such a part that the beetle was taken. It is a safe conclusion that *J. cerambyciformis* must be very rare in the county.– A.A. ALLEN, 49 Montcalm Road, Charlton, London SE7 8QG.

***Lacanobia w-latinum* (Hufn.) (Lep.: Noctuidae) at Charlton, south-east London**

On 29.v.2000, I detected an unfamiliar, well-marked noctuid moth at rest on a fence under lime trees in a residential road near here. Wishing to take it for identification, but not being equipped for so unlikely an event, I was (for once) grateful to the litter-lout who had left some dirty old sheets of newspaper on the pavement not far off. To improvise a small holder was the work of a few moments; and the very torpid moth was carried home without the least trouble or damage.

Plant (1993. *Larger Moths of the London Area*: 153-4) classes this species as very local in the area, the recorded sites "widely spaced and not particularly numerous". He also connects it with the chalk, a formation not found at the surface in this district, where the moth is probably best regarded as casual.– A.A. ALLEN, 49 Montcalm Road, Charlton, London SE7 8QG.

Hazards of butterfly collecting – late 1999. What is *Brephidium exilis* doing in the Emirates?

In November 1999 had an e-mail from Albert Legrain who met me briefly at some meeting more than ten years ago. He had just been to the United Arab Emirates and had caught a tiny lycaenid that he did not recognise from my books on the Arabian butterflies. He thought it might be a *Brephidium*, a genus known only from South Africa and the dry zone of Mexico/USA (the Sonoran Region). Henri Stempffer considered that the genus was proof pure of a pre-Gondwanan connection. Its presence in the Emirates would only compound a biogeographical conundrum. A good photograph was attached to the e-mail.

Sitting in Manila, I could only confirm that 1) nothing like it was known from Arabia; 2) nothing like it had ever been recorded from Iran or southeastern Asia. I promised to make what inquiries that I could.

Legrain was faster than I was, and got hold of Dr. Trafford Gillet in the Emirates. He knew the butterfly well and had even published a small note in a local newspaper. He had pinned it down to *Brephidium exilis*, a common butterfly in places like Arizona and dry Texas (the Sonoran subregion). But how was *B. exilis* in the Emirates?

The answer to that question came swiftly from my good friend Tony Pittaway in the UK. He wrote the first and only paper on the butterflies of the Emirates in the 1980s. He was quite sure the butterfly was not there at the time – and you do not doubt his judgments on Arabian butterflies. But he also had the solution to the biogeographical conundrum.

Just after he left the Emirates, an American company was hired for a dune stabilisation project. They brought in many Sonoran plants and the butterfly must have slipped in as well (no credit to the company involved). The butterfly has since transferred to several local dune plants and seems to be quite common and well established in the Emirates and in northern Oman. There are two interesting aspects to this story.

The first is that this kind of permanent introduction of a butterfly into a new continent is actually a rare occurrence indeed. I have not looked up the full literature, but a few were imported into North America, where they now thrive (*Pieris rapae* Linnaeus was introduced to North America in the 1860s – and into Australia around 1940; *Thymelicus lineola* Ochsenheimer was introduced early in the 20th century and is now well distributed). *Pieris brassicae* Linnaeus established itself in Chile around 1970 and then again in the Cape Province of South Africa during the 1980s; I found it hugely common in Cape Town in November 1999 and local farmers said they had given up trying to grow cabbages.

The giant skipper, *Erionota thrax* Linnaeus, an Asian butterfly, was introduced during the 1970s to Mauritius where it thrived on its usual host plant, bananas; it was almost certainly introduced with banana cultivars from the Far East. However, it seemed to disappear not long after its introduction. The most recent long-range introduction was that of the South African *Cacyreus marshalli* Butler, 1898 into Spain and then southern France. It has now even been found in Belgium and the UK, though it could probably not survive there on a permanent basis. The species feeds on geraniums and was almost certainly brought to Mallorca, where it was first recorded, by some nice blue-rinse lady from Cape Town visiting friends or relatives and bringing a cutting of her favourite *Geranium*.

However, with 19,000 butterflies to choose from, the fact remains that accidental intercontinental introductions of butterflies are very few indeed. So *Brephidium exilis* is a rare bird, flourishing in a habitat generally inhospitable to butterflies. But it was also a showcase for how useful the internet is in situations like this. Within a few weeks, through e-mail communications between France, Belgium, the Philippines, USA, Denmark, and the Emirates, all the relevant facts were in place. Fifteen years ago such a discovery process might well have taken years.

The presence of *Brephidium exilis* in Arabia is actually a bit of a scandal; it should never have been accidentally introduced. But it is a tiny little thing, among the smallest butterflies in the world; since it probably does no damage, let us wish it well in its new habitat. And let us be happy that we know what happened; no huge biogeographical puzzle here!– Torben B. Larsen, 5 Wilson Compound, 2811 Park Avenue, Pasay City, Metro-Manila, The Philippines.
(E-mail: Torbenlarsen@compuserve.com)

More "smaller" Lepidoptera on the Great Orme

I read with interest the note from R. J. R. Levett (*antea*, 214) concerning a "small" form of the Small Heath butterfly *Coenonympha pamphilus* on the Great Orme – and his question of other dwarf races in this part of North Wales. Some years ago (1974), as a youngster, I collected what I thought were dwarf Silver Studded Blues *Plebejus argus caernensis* on the Great Orme's Head, Llandudno. As the time of year was late August I considered these to be a possible "second brood". However, on closer examination they turned out to be the Brown Argus *Aricia agestis*! All those on the wing were very small indeed. I still have one specimen and this measures under 20mm, and recall this as being a particularly fine (=large) example!– MARK YEATES, The White House, Montacute Road, Stoke Sub Hamdon, Somerset TA14 6UQ.

BOOK REVIEWS

The ground beetles of Northern Ireland (Coleoptera - Carabidae) by **Roy Anderson, Damian McFerran and Alastair Cameron.** x plus 246pp., including 65 coloured plates of species and habitats, 166 distribution maps. 210mm x 148mm, hardbound. ISBN 0 900761 37 7. Ulster Museum, 2000. £14.99 plus postage and packing (£1.70 UK; £2.70 Europe), payable to National Museums and Galleries of Northern Ireland. Available from Ulster Museum Bookshop, Botanic Gardens, Belfast BT9 5AB.

This magnificent work, produced at an affordable price, is the first in what I hope will be a lengthy series to be produced by the Centre for Environmental Data and Recording (CEDaR) at the Ulster Museum. Other volumes currently in preparation cover macrolepidoptera, mammals and non-marine Mollusca.

The database for the carabid mapping project apparently contains 14,082 records from 1,052 sites within Northern Ireland, with records available from all of the 186 ten-kilometre squares. It is fair to say that recording coverage is adequate, albeit not even; a map on page 3 uses colour-coded grid squares to indicate species richness in each square, smoothed using means amongst neighbourhoods of nine grid squares.

The work takes the form of several chapters. Chapter one is entitled Edaphic conditions and ground beetle community structure; Chapter two is concerned with The biogeography of Irish ground beetles. Following the colour plate section, a Systematic list of Irish Carabidae precedes the main body of the text, which comprises individual species accounts of all the 211 ground beetles (apparently known colloquially in Northern Ireland as "clocks" or "black beetles") regarded as Irish. Species known from Northern Ireland are mapped on the basis of 5 x 5 kilometre squares. Two symbols are used in the maps, dividing records into pre-1970 and 1970 — 1999 date bands. For each species, subheadings indicate information on world distribution, Northern Irish status and distribution, Ecology and British *Red Data Book* status where appropriate. There is also a contributed chapter on "The impact of land use changes and management on ground beetle community structure and diversity - a review of recent research" by J. H. McAdam and W. I. Montgomery, occupying twenty pages and providing a wealth of valuable information that will be of great interest to all ecologists as well as ground beetle specialists. There follows a Glossary and a Bibliography, as well as two Appendices — the

first a Summary of faunal elements within the Irish Carabidae and the second Faunal elements within the British Carabidae (essentially, a list of Carabids known to have had breeding British populations in historical times with those species that are on the Irish List indicated.

Ireland has always been comparatively poorly recorded in comparison with Britain, and recent problems in the northern six counties have scarcely provided active encouragement for English entomologists looking for an entomological holiday. For this reason alone, this book, and the series which it commences, is to be warmly welcomed. But it is more than just that. The book is a magnificent work in its own right, packed with useful information, produced to a high level of scientific accuracy and presented in an attractive manner. As one who knows a little of the group, but makes no claim to be an expert, I especially welcome the appearance of colour plates of a large number of the species. Here is proof, were it to be needed, that not all ground beetles are black! The photography is excellent, and the captions under each picture helpfully tell us the length in millimetres of the species illustrated.

Apart from providing a valuable record of ground beetles in Northern Ireland, this book will surely do much to popularise the group. Witness the great increase in popularity of hoverflies (Diptera: Syrphidae) upon the publication of Alan Stubbs' and Steven Falk's 1983 book *British Hoverflies*. Ground beetles contain many important indicators of ecological conditions and change, and are of immense value to the ecologist. The combination of books such as this and the publication of modern keys such as those reviewed below, will render the group far more accessible.

Colin W. Plant

Ground beetles by **Trevor G. Forsythe**, with colour plates by Sophie Allington. Naturalists' Handbooks number 8 – second edition with a new key to all British species. 96 pp., four pages of colour illustrations, many drawings of identification features. A5, paperback (ISBN 0 85546 263 9) £8.95; hardcovers (ISBN 0 85546 264 7) £15.00. Published for the Company of Biologists Ltd. by The Richmond Publishing Co. Ltd., 2000. Available from the publisher at P.O. Box 963, Slough, SL2 3RS.

The first edition of this volume was reviewed in 1989 (*Ent. Rec.* **101**: 138-139) and subsequent volumes in this excellent series, which the Richmond Publishing Company took over in 1987 from Cambridge University Press, have been reviewed at various times in this journal. Given this, and that the only significant difference between this and the first edition is the inclusion of all British species in the keys rather than just common ones, this review will be, inevitably, rather short and restricted to the identification keys.

I have never, personally, seen the point in producing keys that leave out several species. This seems to me to be either an insult to the intelligence of the reader or else sheer laziness on the part of the author, perhaps both, and in any case, we seasoned entomologists are all fully aware that the best insect is inevitably caught by the beginner on his/her first trip out! Such an omission is all the more annoying when the key with the missing species is beautifully easy to use whilst the one that has all the others is considerably more difficult to interpret and out of date with respect to additional species and recent name changes. In fact nine species have been added to the British list since publication of the first edition of this volume in 1986 (if you believe the preface and the publishers advertising blurb) or 1987 (if you believe the title page of the first edition). These are included and an up-to-date checklist of British species is presented in alphabetical order.

Testing keys is a time-consuming and precise task, best carried out by those with some experience of the group, though there is also merit in testing the couplets on beginners (as is

done with keys in the AIDGAP series produced by the Field Studies Council) and those middle-of-the-road generalists such as yours truly who fall somewhere between the two. I have run a small selection of common species originally identified by myself through these new keys and arrived at the same answer (*Amara aenea, Carabus granulatus, Notiophilus biguttatus* and *Pterostichus melanarius*). I also ran through some species identified for me by more qualified personnel and also reached the identical conclusion (*Bembidion biguttatum, Metabletes obscuroguttatus* and *Harpalus froelichi*). Overall, therefore, the keys appear to work.

This new book should be of great interest to all coleopterists, both expert and beginner alike. Like the others in the series, it also has immense appeal to the general entomologist, who frequently encounters "interesting looking" insects beyond the limits of his or her own group and would like to identify them if only an easy key was available. Here is that easy key.

The book lacks colour illustrations (apart from four pages, accurately depicting a handful of species). I would recommend that anyone starting out on ground beetles should obtain and use this key in conjunction with excellent colour photographs in *The ground beetles of Northern Ireland*, reviewed above. It is interesting to see that the increase in price over the first edition is relatively small (from £5.95 to £8.95 for the paperback version and from £12 to £15 for the hardback), making the work extremely good value for money.

Colin W. Plant

Die Larven der Europäischen Noctuidae. Revision der Systematik der Noctuidae by **Herbert Beck.** 2000. Volume 3: 128 pages, 99 plates and Volume 4: 512 pages including Index, published as Bands 5/3 and 5/4 of the *Herbipolana* series by Dr Ulf Eitschberger, Markleuten, Germany. A4, hardbound with dust-wrappers. German text mostly with English translations that includes all the species descriptions in Vol. 4. ISBN 3 923807 04 X. DM520.

Review of volumes 1 and 2 was given in 1999 *Ent. Rec.* **111**: 5, 247-248. Now volumes 3 and 4 are published to complete this great work. It was anticipated by the author that these two volumes might prove to be the more attractive to a wider market as they combine superb illustrations with larval descriptions, hence the release of each pair separately although all four can be purchased together at the slightly reduced price of DM1030. In order that each pair of volumes should be self-contained, there is repetition of text of Vol. 1 in Vol. 4. Both volumes 3 and 4 contain much new material that maintains the high standard of scholarship and research backed by printing and presentation of the highest order.

Volume 3. The early pages give frank and meaningful comment on the success and relevance of photography as a medium for the identification of larvae, its limitations and the size problem. Advice is offered on how to recognise last and penultimate instars and on the most important features that assist identification. The author's pioneer work in inventing devices and procedures for description is updated in which characters can be actually measured in relation to other features. The figures and diagrams of Vol. 1 are repeated as are the Systematic List and literature references.

The plates each display 18 figures 65mm x 45mm with the species numbered to conform with the sequence of the descriptions in Vol. 4. Splendid enlargements are presented of features significant for identification, such as prothoracic and anal plates, head and body markings. The photography is of a very high standard and the printing excellent. The poses are natural and attractive yet offer clear identification potential: shadow and the irritating highlight from flash are largely absent. The colours are life-like, even the greens are mostly pleasingly and individually natural, showing intersegmental folds in their true delicate overlay. The author

earlier laments that the limitations of space prohibit presentation of different aspects of all species so the endeavour has been made to display dorsal and lateral ornamentation in the same specimen and this is generally successful. Those most difficult of genera *Oligia, Apamea, Amphipoea* and the internal-feeders are all better than we have yet seen published and mainly allow for identification to the species, but the determination of *Mythimna* species remains as much dependent upon location and habitat as to illustration or description. Last instar Catocalids suffer from being reduced in size whereas the plates of *Euxoa* and *Agrotis* are outstanding.

Volume 4. The important keys that lead first to the Noctuidae and second to the subfamilies, some tribes and some genera are repeated from the first volume and are given in German and English. The List of Abbreviations and Terms is also repeated along with the definitions. A key to genera of the Noctuinae (Noctuinae, Hadeniinae and Ipimorphinae but excluding *Euxoa, Agrotis* and Apameinae) is new. Other new and fascinating reading comprises:

A thought-provoking Preface that reviews the basic concepts and raw material of classification of noctuid moths.

An Abstract that examines the merits of larval and imaginal systematics.

Comment on the accelerated development of the study of noctuid moth that summarises the more profound and relevant publications.

Discussion on the merits and problems of modern systematics dependent upon adult structure, the over-valuation of genitalia, and appraisal of systems based on the hairy-eye and spiny tibiae that finally lay Hampson to rest.

Appreciation of the morphospecies and of characters used to define higher taxa compared with those of the species.

A summary of the marathon controversy over the niceties of noctuid systematics between Beck on the one hand and by Fibiger *et al* on the other, giving examples of species and genera at length.

The bulk of the volume is devoted to "short" descriptions in German and English of the larva of each species prefaced by a crisp but revealing definition of its genus or higher taxon characteristics. Each subfamily or tribe is well discussed for both ornamental and morphological features. Well defined varietal forms are separately described under the epithet fl. with a given name, rather as adult variation has attracted ab. or var. Salient characters throughout all descriptions are printed in bold. The text uses all the conventions and abbreviations outlined in Beck's List of Definitions and Terms again reproduced from Vol. 1 presented in both languages in combined alphabetical sequence.

I again stress the importance of these volumes that will influence Noctuidae classification through the medium of their larvae, although the work is firmly based on the broadest principles that reflect evaluation of recent and current work by leading specialists. The field worker may feel more at home with vols. 3 and 4 and the serious student will find an abundance of learning in all volumes, while all of us sooner or later have to come to terms with the relationships of species and genera and the meaningful understanding of them; this work will enormously assist that goal.

The four volumes make an exceedingly handsome and impressive set and the contents match their appearance. The price may seem high, but is no more than comparable volumes fetch today for less substance; here the subject matter is profoundly stimulating and brilliantly handled. Our debt to Dr Beck will be truly revealed only as the years pass.

G.M. Haggett

CORRIGENDA

The following corrections to the current volume have been notified to the Editor:

Page 95, **Table** – existing line 3 in column 2 should be on line 4 as follows:

Grooming	Stationary; moving legs or antennae or defaecating

Page 121, **Acknowledgements** – the text should thank Miss Christine Tilbury and Dr Tim Winter for advising that there are **no** records of *D. autographus* in south-east England in the Forestry Commission records.

Page 125, Title – the first word should read *LITHOSTYGNUS* and not *ITHOSTYGNUS*

Page 19, **Table** – *Lycia zonaria britannica* the Belted Beauty and *Trichopteryx polycommata* Barred-tooth-striped should have been listed in the Priority Species Action Plan column and not in the Species Statement column. *Scotopteryx bipunctaria* Chalk Carpet should have been in the Species Statement column and not in the Priority Species Action Plan column.

Page 188, final book review, heading – the book *A provisional atlas of the Pyralidae of Somerset* was, of course, produced by the Somerset Moth Group and not by the Devon Moth Group as stated.

From the Editor's chair ...

Five years on and I am still here, so I suppose I must be doing something right! Somehow we managed to get the journal out on the correct dates and, apart from a few minor postal delivery delays that are not at all our fault, everyone seems to have received their copy on time. We are so up to date with our backlog that we no longer have one. We have completely caught up with the annual immigration reviews, and that covering 1998 appears in this issue. The target is to produce these papers about 18 months to two years after the end of the year reviewed (it takes that long for information to be sent in and for it to be validated and typed up), so expect the review of 1999 to appear within the next six months. The annual review of the most important records of microlepidoptera is bang up to date, with that covering 1999 in the last issue of this volume. Our finances are satisfactory, and we survive this year with an extremely small profit that will be put back into producing more pages. No doubt everyone will be delighted to learn that this means we do not have to raise the subscription this year!

My analysis of the numbers of contributions published in each entomological category follows for volume 112. This year, the numbers in brackets following the current year's totals are the totals for my five years as Editor. Readers will form their own conclusions and tell me, I am sure, if things are not progressing the way they wish. You can always write something yourself!

Subject area	Papers	Notes and Communications	All contributions
British macro-moths	11 (41)	34 (122)	45 (163)
British micro-moths	5 (21)	23 (102)	28 (123)
British butterflies	4 (17)	13 (59)	17 (76)
Foreign moths	0 (7)	1 (4)	1 (11)
Foreign butterflies	2 (17)	4 (13)	6 (30)
British beetles	5 (22)	24 (69)	20 (91)
British flies	5 (10)	4 (25)	9 (35)
Other orders (British)	2 (16)	8 (38)	10 (54)
Miscellaneous topics	1 (14)	8 (57)	9 (71)
Book reviews	– (–)	– (–)	22 (116)
Subscriber notices etc	– (–)	– (–)	8 (38)

Of course, as Sir Isaac Newton once wrote, for every reaction there is a reaction which is equal and opposite. Applied to this journal, this translates to something along the lines of "for every plus there is a minus", a principal famously encapsulated, presumably later, by the infamous Murphy in his own "Law". In this case, the minus is that we have caught up so totally that we have nothing left to publish!

Of course, a particularly unkind season has not helped. Rain and low temperatures featured very strongly and, unless I had my own personal cloud which followed me everywhere as I travelled the country on various entomological contracts, this applied practically everywhere. Whether this is the infamous global warming is a matter for conjecture, though it occurs to me that if that hole in the ozone layer is at the root of the problem then "Maybe, just maybe" there is a use for "The Dome" after all. The upshot of it all is that there seems to have been nothing entomological of any interest for anyone to write about! It is interesting to note that over each of the last five years, the number of subscribers submitting an article for publication has ranged from 12.5% to 15.7% of all subscribers, with the average being 14.2%. Looking more closely at the number of articles submitted by each person, it seems that around 8% of subscribers are writing the journal for the other 92% to read. Can it really be that 92% of our readers really have passed an entire year without discovering anything at all that would be of interest to other entomologists? Interesting! Let us hope that, as we enter the real new millennium, this journal does not have to reduce the number of its pages in order to survive

Colin W. Plant

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THE ENTOMOLOGIST'S RECORD

AND JOURNAL OF VARIATION

(Founded by J.W. TUTT on 15th April 1890)

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