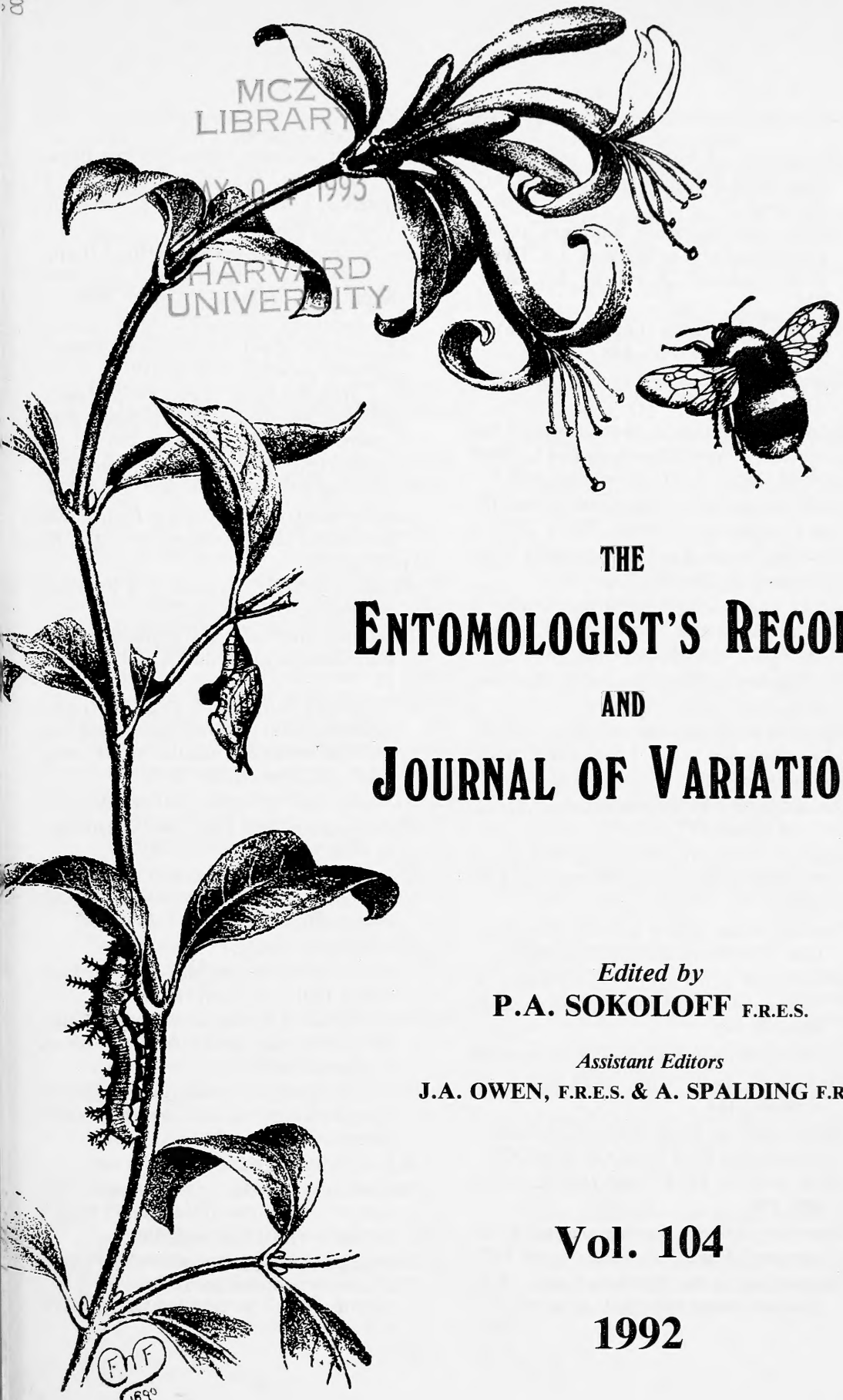

THE ENTOMOLOGIST'S RECORD AND JOURNAL OF VARIATION

Edited by
P.A. SOKOLOFF F.R.E.S.

Assistant Editors
J.A. OWEN, F.R.E.S. **& A. SPALDING** F.R.E.S.

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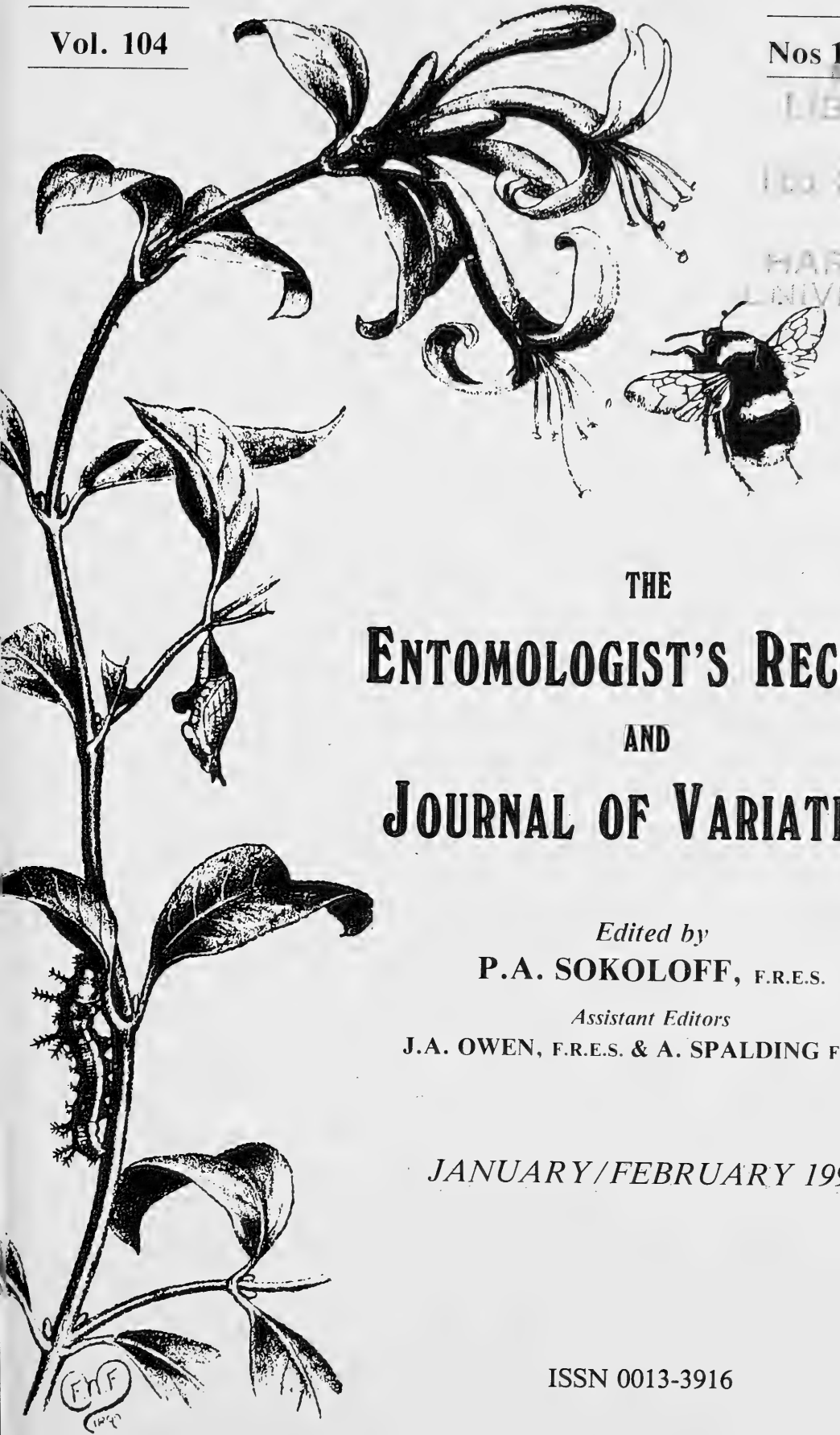

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BUTTERFLIES NEAR CAPE KINDO, SUBARCTIC USSR

STANISLAV ABADJIEV

Block 415, Entrance G, Flat 80, Druzhba 2, Sofia 1582, Bulgaria.

CAPE KINDO is the highest point of a small peninsula on the Karelia coast near the Arctic Circle. Nearly the whole of the peninsula is covered by forests of *Pinus sylvestris* and bushes of *Vaccinium uliginosum, V. vitis-idaea* and *Betula nana*. A certain number of lakes and bogs brings some diversity to this monotonous picture.

In the course of a week in July, 1990 I had the chance to collect butterflies in this part of the USSR. The taiga, with its pine forests, offers primarily nemoral and subnemoral habitats, inhabited by a small number of mainly mesophilous species. It was impossible in such a short span of time to get a complete idea of the species composition yet I observed several species attached to these northern latitudes.

Papilio machaon Linnaeus, 1758. Polytypic species presented in this region by nominal ssp. *machaon* Linnaeus, 1758 (Seyer, 1974). I observed this heliophilous butterfly in the woodland clearings on 11th, 12th and 19th July. Six specimens seen in the collection of the White Sea Biological Station (WSBSC), of which one male and two females without data, also from July 1973 — one male; 21st June 1974: Prudnikova leg. — two females.

Aporia crataegi (Linnaeus, 1758). In the same localities on 11th, 12th and 19th July. Also one male from WSBSC (without data) — Antonova det.

Pieris napi (Linnaeus, 1758). Abundantly along the sea shore on 13th July — four males, one female; 19th July — two females; 20th July — one male. From WSBSC — one male, one female (without data); 10th June 1974 — one male; 21st June 1980 — one female; 4th July 1981: Koraikova leg. — one female; 20th - 26th July 1982: Tishechkin leg. — one female. Holarctic species. Following Eitschberger (1984) this population must belong to ssp. *napi* (Linnaeus, 1758).

Anthocharis cardamines (Linnaeus, 1758). A single female labelled 22nd June 1974: Mehedov leg. in the WSBSC. Eurocentroasiatic species.

Colias palaeno (Linnaeus, 1758). I saw this eurosiberian species on 11th July — one male, one female; 12th July — one female and 19th July — three males. Mesophilous butterfly, protected in USSR.

Lycaena hippothoe (Linnaeus, 1761). Found on 13th July 1990: Dimitrov leg. — two males; 18th July 1990: Iliev leg. — one male. Eurosiberian species. Skiophilous according to its sunlight preferences.

Callophrys rubi (Linnaeus, 1758). I observed a single specimen on 12th July. Many specimens are kept in the WSBSC — 2nd June 1974 — one male; 10th June 1974 — one female; 13th June 1974 — one male, two females; 5th June 1975: Efremov leg. — one male; 14th June 1975:

Efremov leg. — one female; 5th August 1975 — one male; 28th June 1980: Gasyunas leg. — one female.

Celastrina agriolus (Linnaeus, 1758). I found three specimens in the WSBSC — 11th June 1974 — one female; 13th June 1974 — one male; 20th June 1975: Efremov leg. — one female. Holarctic species presented here by ssp. *argiolus* (Linnaeus, 1758) (Eliot & Kawazoé, 1983).

Lycaeides idas (Linnaeus, 1761). A common butterfly collected on 12th July — three males; 13th July — one male; 19th July — one male, one female. Also from WSBSC 3rd August 1983 — one female; 10th August 1983 — one male, one female; 13th August 1983 — one male (all Tishechkin leg.). Heliophilous and mesophilous species.

Aricia eumedon (Esper, [1780]). Eurocentroasiatic species found on 12th, 13th and 19th July, also in the WSBSC — 4th July 1975 — one female; 11th July 1979 — one male; 13th July 1979: Dmitrieva leg. — one male.

Vacciniina optilete (Knoch, 1781). Near the bogs and often associated with *Vaccinium uliginosum* on 12th and 19th July. Some specimens from WSBSC — 9th July: Dmitrieva leg. — one male; 10th July 1979 — one male; 14th July 1979: Nesterova leg. — one male; 15th July 1979: Kotov leg. — one female; 11th July 1982: Tishechkin leg. — one female (Antonova det.); 20-26th July 1982: Tishechkin leg. — one female (Antonova det.). Heliophilous and hygrophilous butterfly.

Cyaniris semiargus (Rottemburg, 1775). A single female on 11th July 1990 near Poyakonda.

Polyommatus icarus (Rottemburg, 1775). From the WSBSC — one female (without data); 25th July 1973 — one female.

Boloria selene ([Denis & Schiffermüller], 1775). Quite common on 11, 12, 13 and 19th July. On 12th July I observed a female which oviposited on the leaves of *Vaccinium*. Holarctic species.

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The butterflies of Greece

I am currently preparing an illustrated handbook of the butterflies of Greece and would welcome records and observations from British Entomologists. I anticipate that the book will contain 242 distribution maps, 750 colour photographs, 30 plates of diagrams and some 90,000 words of text in English and Greek. All contributions will be acknowledged in the book.— LAZAROS N. PAMPERIS, P.O. Box 1220, 41110 Larissa, Greece.

THE GENERA *OBEREA* MULS., *STENOSTOLA* MULS., *PHYTOECIA* MULS. AND *TETROPS* STEPH. (COL.: LAMIIDAE) IN GREAT BRITAIN.

RAYMOND R. UHTHOFF-KAUFMANN

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Introduction

WITH THE exception of *Tetrops,* still widespread and fairly common (but not so in Co. Carlow, Eire, where it has not recurred for over 55 years), these medium sized Lamiids are no longer easy to find: *Oberea,* once locally common but so thoughtlessly hunted, is now one of our rarest Longhorn beetles.

Brownean alphabetical symbols represent the counties and vice-counties (Kaufmann, 1989); italicised letters denote a fairly general distribution; those that are bracketed require confirmatory records.

Oberea oculata L.

This most prized and very attractive beetle was so over-collected during the 19th century and the earlier decades of the present one that it is now highly vulnerable and on the endangered species list (Shirt, 1987). There are, to give a single example, no less than eight specimens in the Dale Collection at Oxford (Walker, 1932). *Oberea* was last sighted in its better known haunts in the 1980s for the first time since long before the last war. Its range has always been confined to the Fens and East Anglia. The few records from elsewhere in the country are old ones which have not been repeated. The insect has been known here for 200 years and is illustrated by Martyn (1792).

ENGLAND: *CB* CU EK OX (SH) WN WS

SCOTLAND: There is a record from the Solway area which perhaps refers to a capture once reported from Cumberland.

The larva is found in the twigs and young branches of healthy trees and bushes such as bay willow, buckthorn, common osier, goat willow, sallow and weeping willow.

The larva is parasitised by these Hymenoptera:-

Ephialtes manifestator L., *E. messor* Grav., *E. terebrans* Ratz., *E. varius* Hgr., *Pimpla examinator* F., *P. instigator* F. and *Pseudovipio guttiventris* Thoms.

The pupa forms during the period June to September, the life cycle extending from one to two years.

The imagines emerge in June and may be seen until September — there is a solitary record of its capture in January — their best month being August, especially if the weather is hot and sultry, when the beetles fly round the host tree usually just out or reach.

A very wary beetle which hides under the leaves of the tree upon which it has settled, or when spotted it will turn towards its pursuer, crouching motionlessly along a twig with its antennae held at an angle to simulate an old leafless stalk. In the past the insect has been swept from alder, *Arbutus,* sea buckthorn and Umbellifers.

It is to be hoped that the manoeuvres described above may yet help to preserve a beetle now so precious to our fauna.

a. *quadrimaculata* Donis. A very rare aberration with two additional spots on the pronotum, taken at Wicken Fen with the type in 1898 by Donisthorpe and Prof. Hudson Beare (Donisthorpe, 1898; Fowler & Donisthorpe, 1913). In that year the species proper was stated to be plentiful: *O tempora . . . !*

Stenostola dubia Laich.

This species, the Lime Beetle, has always incorrectly appeared in the majority of our textbooks and catalogues under the name of *Stenostola ferrea* Schrank, which it closely resembles. *S. ferrea* is not found in this country, nor is it clear why the misidentification arose in the first place. If the two species are compared it will be seen that *S. dubia* differs superficially from *S. ferrea* in that the elytra of the latter are considerably less metallic greenish-blue in coloration and the puncturation is dissimilar. When and if a new British catalogue is published, the correction in nomenclature will no doubt be made.

S. dubia ranges from the western counties, through the Hampshire basin, the Midlands, and then north to Cumberland and Durham. It is unknown in Scotland and Ireland.

ENGLAND: BK CH CU *DM* DY EX EY *GE* GW HF LN MY ND NH NM NO NW NY SD *SH* SL SP ST SY WK WO WW *WY*
WALES: MN PB RA

The larva occurs either in thin recently cut down decaying branches or in dead pieces lying around on moist soil: thicker branches are rarely if ever attacked. The host trees include alder, aspen, eared willow, elm, fruit trees, goat willow, hazel, hornbeam, lime, including small leafed lime (and various other *Tilea* species), the most favoured pabulum, oak, poplar, rowan, sallow and walnut.

The larva is parasitised by the Braconids, *Coelobracon initiator* Nees and *Neurocrassus tesari* Snoflak.

Pupation occurs in April and May after a metamorphosis which can extend from one to two years depending upon the weather; in the latter event either the pupa or the ecloded imago will overwinter (Kleine, 1930.)

The beetles emerge in May and are found until September. They are more particularly associated with lime trees to whose leaves and the thin bark of the tender branches they cause extensive damage. The perforations and excisions are similar to those made by *Saperda carcharias* L.

The beetles emerge in May and are found until September. They are more particularly associated with lime trees to whose leaves and the thin bark of the tender branches they cause extensive damage. The perforations and excisions are similar to those made by *Saperda carcharias* L.

This has always been a rare, rather scarce beetle, very swift in its movements and one which leaves its bolt holes so quickly that it often escapes capture as it rapidly takes to wing. It flies round lime flowers and may also be swept from alder, aspen, dogrose, dogwood, elm, hawthorn, hazel, oak, rowan, sallows, willows and grasses generally.

Phytoecia cylindrica L.

This is our only other indigenous herbicolous Longhorn. It ranges from the south-west eastwards through the Home Counties, East Anglia and the Midlands as far north as Nottinghamshire, but no farther north than that county. There is a recent record from beyond the Welsh Marches. Formerly common locally, it has become a scarce species.

ENGLAND: BD *BK* BX CB *DT* DY (EC) *EK* EN ES EX GE GW HF HT HU L LR MM MX *ND* NE NH NM NO NS NW *OX SD SE* SP *SR* (WC) WK WN *WS* WX

WALES: BR

The larva is found in the stems — usually not more than one per plant — of *Anthriscus bipleurum,* bur chervil, bur parsley, *Chaerophyllum bulbosum, C. foenicula,* carrot, in whose roots it causes considerable damage (Duffy, 1953), cow parsley, hogweed, masterwort, rough chervil, spurge and thistles.

The larval period, apparently immune from any parasitic attacks, is the shortest known among the British Longhorns and is completed within three months.

Pupation occurs during July and August, usually in the lower parts or roots of the brood plant. The adult, after ecloding in the autumn, overwinters. The total life cycle is accomplished within a year.

The imago emerges as early as March and is found in the open until July, when it may be beaten off flowers, including hawthorn blossom, elm and hazel, or swept from grasses and hedgerows. The beetles sometimes hide in the leaf axils or rest under the composite florets of their host plant.

Tetrops praeusta L.

Known as the Plum Beetle abroad because of its predilection for *Prunus* species, this, the smallest of our British Longhorns, is quite a common insect and generally distributed in England. It is still unrecorded from Scotland and very rare in Ireland, where it has not been seen since 1935.

ENGLAND: BD *BK* BX *CB CH* CU DM *DT* DY EK *EN ES EX* EY *GE* GW *HF HT* HU IW L LN *LR* MX MY NE NH *NM* (NO) NS NW *OX SD SE SH* SN *SR* ST SY WC *WK WL* WN WO *WS WW WX* WY

WALES: BR DB GM MN

IRELAND: CW

The polyphagous larva, which is sometimes found with those of *Pogonocherus hispidus* L. and *Agrilus* spp. sharing the same pabulum, inhabits the small, slightly decaying twigs, brushwood and thin branches of apple, ash, aspen, berry-bearing alder, bird cherry, blackthorn, common pear, *Cotoneaster,* crabapple, damson, dogrose, elder, English oak, hawthorn, hazel, lime, osier, peach, *Prunus armeniaca,* rowan, sallow, spindle tree and wild plum (particularly its roots).

The following Hymenoptera parasitise the larva:-
Caenocoelius analis Nees, *Calosota aestivalis* Curt., *Chaeropachus colon* L., *Elachistus leucogramma* Ratz., *Eurotoma eccoptogastri* Ratz., *E. ischioxanthos* Ratz., *Pteromalus bimaculatus* Ratz. and *P. nodulosus* Ratz.

Duffy (1953) questions the accuracy of the above list because some of these parasites are more likely to be associated with *P. hispidus*: the only one common to both *Tetrops* and the latter is *Eurotomus eccoptogastri* Ratz.

Pupation occurs during the early spring months and may be delayed until May. Metamorphosis is normally annual but extends sometimes to a two year period.

The adult beetles are found, frequently on the edge of woodlands, from April until October. They often fly during daytime around the host trees or settle on their blossoms; they have been observed nibbling the leaves of ash trees. In addition, they may be swept off honeysuckle, nettles, old hedges, sweet brier, *Umbelliferae* and *Viburnum. Tetrops,* once it has fallen on the beating tray, is sometimes overlooked by reason of its smallness and complete immobility.

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Records of *Piesma quadratum* Fieber (Hem.: Piesmidae) from west Cumbria. I have taken this bug at three separate localities along the west Cumbrian coast. My records are as follows: near Coulderton (NX 9808), one on *Plantago lanceolata,* 27.v.91; Starling Castle (NY 0104), one tapped from Marram grass, 7.iv.84; near Eskmeals Viaduct, Ravenglass (SD 0896), two swept from Sea Purslane on saltmarsh and several in flood refuse at base of *Chenopodium,* 28.v.91.

This bug would appear to be new to Cumbria and vice-county 70, Cumberland. There is no record of the bug in F.G. Day's list of the Heteroptera of Cumberland (1928, *Trans. Carlisle nat. Hist. Soc.,* **4**: 108-130), and there are no specimens from the county in the collections of local Heteroptera formed by F.H. Day, G.B. Routledge and J. Murray and held in the Tullie House Museum at Carlisle.

I wish to thank Dr Peter Kirby for information regarding the distribution of the bug in Britain. I also thank Mr Stephen Hewitt, Keeper of Natural History at the Carlisle Museum for allowing me access to the entomological collections.— R.W.J. READ, 43 Holly Terrace, Hensingham, Whitehaven, Cumbria CA28 8RF.

Purple Hairstreak, *Quercusia quercus,* nectaring on Snowberry, *Symphoricarpos* sp. in north Warwickshire.

On 30th August 1991, whilst tapping a stretch of Snowberry hedge (*Symphoricarpos* sp.) along the drive of the local church to make a count of Holly Blue, *Celastrina argiolus,* (there were five), I disturbed a Purple Hairstreak, *Quercusia quercus,* which flew out and returned to settle on a leaf. From there it crawled to the part-opened bud of a Snowberry flower and proceeded to nectar. Mature oak and ash are present nearby but during the three seasons in which the species has been known to have colonies locally, I had never seen any in that particular part of the parish. I am aware of reports of Purple Hairstreak nectaring on thistle species (particularly Creeping Thistle, *Cirsium arvense,* along with White-letter Hairstreak) and bramble (*Rubus* sp.) I have myself seen one nectaring on agrimony (*Eupatorium cannabinum*). The entomological literature does not seem to pay much attention to this behaviour of *Quercusia quercus.* Indeed, the recent Volume 7 (Part 1) of *The Moths and Butterflies of Great Britain and Ireland* (Harley Books) states that the species does not take floral nectar, which is clearly inaccurate. It seems to me that the species will utilise a wide range of available nectar sources which are suitable. I am also wondering whether there are any records of it taking the juices of early ripening fruit (windfall apples, blackberry or elderberry?) as will Comma, *Polygonia c-album,* Red Admiral, *Vanessa atalanta* and Speckled Wood, *Pararge aegeria*; or urine/faecal matter like the Comma and Purple Emperor, *Apatura iris*; or even the decaying corpses of animals or birds like the Purple Emperor? Observations would be welcomed through the pages of this journal.— BRIAN MITCHELL, 127 Watling Street, Grendon, Atherstone, Warwickshire CV9 2PH.

AN HISTORICAL SUMMARY OF *CUCULLIA GNAPHALII OCCIDENTALIS* BOUR. (LEP.: NOCTUIDAE) IN ENGLAND — BUT IS THIS THE END?

COLIN PRATT

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MOST field-working lepidopterists have regarded the Cudweed Shark moth as a difficult species to obtain in this country and any encounter was judged an event. Throughout entomologically historical times, scarcely half a dozen collectors have ever assembled a good series of personally gathered specimens, although the legendary A.J. Wightman furnished many British cabinets with East Sussex examples. Yet, despite this scarcity, when specimens were sold by public auction at Debenham, Storr & Sons, they only brought a shilling or two each to the vendor.

Single-brooded, the moth varied considerably in its flight time from season to season; it usually flew along woodland rides and clearings from mid June to mid July, but feral examples were seen from late May to late July. The adult flew well before dark and captive specimens lived for only about a week. Specimens have occasionally been noted at mercury vapour and other lights, at sugar, at rest on fence posts and telegraph poles, and feeding from flowers, including the Pyramidal Orchid (*Anacamptis pyramidalis* L.).

There is one tantalising but slight piece of evidence which could be construed as indicating that *gnaphalii* is an occasional very rare immigrant. On 24th August 1951, after a summer of around average temperatures, C.F. Astbury caught a single specimen in his m.v. trap at Hastings (diary, in C. Pratt coll.). This is an unheard of late date in this country but one leading continental chronicler thought the moth double-brooded in France, with the final emergence occurring . . . . during August (L'Homme, 1923-35). Even if a fact, it is unquestionable that any migrations are a very rare event, as the species British distribution would have been incoherent and the moth ought to have been seen subsequently on similarly late dates.

Eggs were laid singly on or near wild Golden Rod (*Solidago virgaura* L.) and were collected by the diligent. But the vast majority of cabinet specimens were obtained in the larval stage and bred through. Although this stage was the most vulnerable to human discovery, it took some time before its life-style was eventually determined in detail, by Wightman (1936; diary). Larvae usually fed during July and August, and sometimes into September, preferring a solitary existence. They occurred in very small areas, often within large growths of Golden Rod, with many hiding under violet and other leaves nearby. They fed on the top-most leaves (Buckler, 1895) "Frequently both in sunlight and at dusk and probably during the night, favourite periods being dawn, in the early morning sun and half-an-hour before sunset" (Wightman, 1936). Larvae could be collected by

Tilley-lamp at night but were much more easily detected during the day (Wightman, diary).

The pupa spent autumn and winter on the surface of the ground in a camouflaged blister-like cocoon (Wightman, 1936; Heath & Emmet, 1983).

Frequency

Down the years, all of the published national authorities on the lepidoptera agreed that *gnaphalii* was usually a great scarcity (Stainton, 1857; Barrett, 1900; Tutt, 1902; Ford, 1967; Skinner, 1984). During most of the 19th century, after its discovery in Kent at some time before the late 1820s, the insect was thought to be "so excessively rare, even on the flowers of golden-rod in Kent and Sussex woods that it haunts, that the beginner is not likely to come across such a prize" (Tutt, 1902). But by the early 1890s an improvement seems to have taken place, either in numbers or in their detection, as larvae were by then being "found almost every year by those who are fortunate enough to know how, when and where to search" (South, 1892).

Local experts, intensively working comparatively small areas, also confirm that there were occasions when the species occurred much more frequently — at least in the larval stage. In Kent, *gnaphalii* larvae were "numerous" at Wateringbury from 1899 to 1909; at the lepidopterists' modern-day Mecca, Ham Street, 27 larvae were collected in 1938, 23 in 1947, and a dozen in 1950 (Chalmers-Hunt, 1962-68). In Sussex the foremost site was always Vert Wood, near Laughton; here Wightman "found 60 in one hour" in 1923 (Wightman, diary). And on 28th July, 1924 he noted "larvae in great numbers. I found seven on one plant and in a small area of the wood took 160 of fair size in the afternoon. Could have taken 1000" (loc. cit.). Larvae were "in fair numbers" again at Laughton in 1946 (Wightman, diary) and in 1977 two dozen caterpillars were also noted at Beckley by B. Skinner (pers. comm.).

Although Wightman's genius undoubtedly contributed to the astonishing numbers available at Vert Wood during 1924, in my view such numbers were extremely unusual and perhaps unique — too many other enthusiasts, albeit less talented, slaved for hours during many other seasons with too little result.

Distribution

There are a small number of published errors and queried records. There is a single 19th century report from Epping Forest in Essex (Barrett, 1900), which has been rejected by some chroniclers due to lack of detail. However, I believe that there is every reason to accept the record, despite the fact that it is the northernmost sighting; its situation is geographically confluent with the insects' known distribution at that time, odd single sightings were typical to all of the counties bordering its headquarters in

Kent and Sussex, and C.G. Barrett was a meticulously accurate reporter.

During the mid 1920s, Wightman observed that "*Cucullia gnaphalii* is widespread in Sussex" (Wightman, 1924) but this was an uncharacteristic slip; this should have read "East Sussex".

At mid century the species was thought "Rare" in the Haslemere district on a list of lepidoptera written by F.A. Oldaker (Oldaker, 1951), but this was mainly a re-writing of a by then out of date earlier work (Oldaker, 1913) and there is no indisputable evidence that the insect survived in Surrey after the first quarter of the 20th century.

In 1966 and 1967 there were two curiously geographically discontinuous records of adults in Oxfordshire and Leicestershire (Davey, 1967) which were included under one dot on a recently published distribution map (Heath & Emmet, 1983). These records were an error of judgement and are incorrect (S.R. Davey, pers. comm.). Also illustrated on this map is a post-1960 dot near the Isle of Sheppey; this dot is a transcription error and should be an open circle (B. Eversham, Monks Wood Experimental Station, pers. comm.) as it was derived from a record made in 1914, by H.C. Huggins at Bysing Wood.

Gnaphalii was widespread but local in central and southern Europe in early times (Kirby, 1889; Seitz, 1907; Culot, 1914-17; L'Homme. 1923-35). More recently, although still uncommon in these areas, the moth has been found more frequently in Denmark, southern Sweden and Finland (Heath & Emmet, 1983). England's colonies have therefore always been an isolated outpost.

In this country, the Cudweed Shark has never been discovered away from the south-east and even here it was only unquestionably permanently established, locally, within entomologically historical times, in a very few spots in Kent and East Sussex.

During the last half of the 19th century the moth was found from eastern Hampshire and southern Surrey, as evidenced by records from Horndean in 1856 and Whitley in 1892 (Barrett, 1900), to Essex (*loc. cit.*), and in Kent (Chalmers-Hunt, 1962-68) and Sussex (Pratt, 1981). In all counties apart from Kent and East Sussex the species was always a great rarity. Surprisingly, during this period the species was almost completely missing from east Kent (map 1), the only exception being a (presumably accurate) record for Deal in 1873 (Knaggs, 1874).

Over the first three decades of the new century the insect colonised east Kent, maintaining its range in the west (map 2), but after the early 1930s the new territory was lost (map 4). Paradoxically, during the same years that the species was expanding in the east it was in retreat in the north (map 3); by the second quarter of the century the moth had almost disappeared from north Kent, by 1913 it was exclusively found only within about ten miles of the southern coast (map 4), and by the second great conflict was restricted to woods near the Sussex border.


1
2
3
4

The changing distribution of *Cucullia gnaphalii occidentalis* Bour. in south-east England.
Map 1 — to 1900
Map 2 — 1901 - 1932
Map 3 — 1926 to date
Map 4 — 1933 to date
Map 5 — 1961 to date
Map 6 — 1971 to date

The final north Kent sighting came in 1932 at Wateringbury (Chalmers-Hunt, 1962-68) and the last unquestionable Surrey report as early as 1925 (Turner, 1925). Then, during the three decades following the Second World War, the insect continued to gradually retract its range (map 5). The last Hampshire sighting was made in 1942 (Goater, 1974), and it disappeared from West Sussex after 1960 (Pratt, 1981) and from Kent after 1968 (Chalmers-Hunt, 1979-81). From the last-mentioned date onwards *gnaphalii* was restricted to East Sussex and soon, after a record at Milton Street in 1970, only to the Beckley area (map 6). Here on the Sussex/Kent border, B. Skinner noted the last known British larva on 11th August 1979 (pers. comm.).

Foodplant

Feral *gnaphalii* larvae have only ever been discovered feeding on Golden Rod (Heath & Emmet, 1983). In the south-east this plant flourishes after tree-felling, until sprayed with herbicide or is overshadowed again by scrub

or replanted evergreens; but it also occurs more permanently along the edges of woodland rides.

Golden Rod can be found as far north as the Hebrides. But in the south it is discontinuously distributed between the south-east and the west of England, except perhaps for a tenuous grip in Dorset and Somerset (Perring & Walters, 1976). The plant is only really common within this area to the south of the Thames, as far west as the Dorset/Hampshire border (Fitter, 1978). This would tend to confine any colonising species, with no confirmed migratory instinct and with a foothold restricted to the extreme south-east, to this district. However, although the opportunity for unfettered expansion had limitations, *gnaphalii* never even fulfilled its full potential in the southern coastal counties, as has been shown.

It has been said that the moth "is endangered, the main threat being destruction of habitat" (Heath & Emmet, 1983). There have certainly been changes in the species' chosen sites, mainly in the change in emphasis from broadleaved to needleleaved trees around the middle of the 20th century, but the insects' foremost localities remain — and, more significantly, Golden Rod still often flourishes at these traditional spots.

It is true that most of the moths' local residences were apparently short-lived and no doubt some would argue that this was due to the overshadowing of the foodplant. However, transient residency is not unusual amongst lepidoptera at the edge of their range with no hint of difficulties with their foodplants. It is also true that, at least as far as its foodplant was concerned, this Shark had unrivalled opportunities after the two World war fellings. The species was certainly uniquely abundant in one spot in East Sussex during the mid 1920s and was also quite common in single localities in both Kent and East Sussex just after the second conflict. Although this circumstantial evidence suggests that the insect may well have taken advantage of post-war upsurges in foodplant in some places, I am not convinced that lower levels contributed much to its national decline. Was Golden Rod often so scarce as to limit the numbers of larvae when, during advantageous times, seven could occur on a single plant?

Before the Great War, coppicing was more or less continuously performed in almost all of the larger woods in the south-east — which would have given *gnaphalii* a fluctuating though uninterrupted ample supply of foodplant. Between the wars the practise dramatically declined, until the second conflict precipitated an even worse period of widespread fellings and a more fundamental change in the predominance of some tree species. Therefore, allowing a few years for the plant to flourish and then be subsequently overshadowed, if the moth were to be nationally affected by a decline in Golden Rod, its distribution should have been relatively stable and at its height up to around the late 1920s. But, as has been shown, by 1926 *gnaphalii* had almost disappeared from inland sites — whilst *C. asteris,* a close relative feeding on the same foodplant, is still even now just

as frequent and as widespreasd as ever in the south-east. Given these facts, and not least that Golden Rod can still be seen in abundance in its historically leading localities, it can be said that habitat/foodplant loss played no significant part in this creature's downfall.

Climate

In view of the geographically confluent retreat, climatic fluctuations might be thought to be a good candidate as a prime causal factor. However, there seems to be no significant relationships between the monthly weather records for temperature, rainfall, or sunshine, and the decline of *gnaphalii,* although it is impossible to eliminate more subtle or unrecorded climatic influences.

Collecting

Due to its reputation and beauty, and not least the kudos attendant upon such a capture, there has been some focussing of attention on *gnaphalii* by collectors. But few collections have ever sported a lengthy series of specimens and it would be naive to suppose that anything other than the smallest fraction of larvae available during any given year were ever taken.

By 1984 the NCC thought the insects' breeding status "extremely precarious" (M. Hadley, pers. comm.), but as early as 1981 it was reported as "Endangered", this eventually being published in the Red Data Book in 1987. Whilst this category is the highest in terms of vulnerability, the species is still not protected by statute — although, in my view, it is exceedingly unlikely that protection will, or would have, materially aided its survival.

Parasites

From experience gained during the 19th century, larvae were said to be "terribly infected with ichneumon parasites" (Barrett, 1900), with the percentage of unaffected caterpillars being "often exceedingly low" (South, 1892). I have also heard a number of similar verbal accounts from experience gained throughout this century. In 1947 J.A. Parry beat out 21 larvae from Ham Street Woods in Kent and "all except one were parasitised" (Chalmers-Hunt, 1960-61). And very significantly, even as late as 1977 B. Skinner collected 24 larvae from the far east of Sussex and found that, even though they were very small, 19 had already been so attacked (pers. comm.). This is in stark contrast to the insects' close relative, *asteris,* which is rarely affected in Sussex — even whilst feeding on the same foodplant (albeit for preference on different parts), in the same localities, at the same time of year. According to W.H. Tugwell, at least two species of parasite attacked *gnaphalii* during the 19th century — *Linneria ensator* Grav. and *Macrocentris linearis* Fab. (Buckler, 1895).

There is circumstantial evidence that caterpillars may have been evolving

certain strategies, apparently unsuccessfully, as a defence against parasites. As early as the second quarter of the 19th century it was noted, from continental experience, that the caterpillar "is extremely active and when touched throws itself on the ground and continues to twist itself about with great energy" (Newman, 1869). About a century later this behaviour was confirmed in English larvae with the additional observation that "large larvae emit a greenish-brown fluid when lightly touched and strike with their head the offending object. This fluid is fatal to small larvae and probably dangerous to parasitic flies" (Wightman, 1936). Clearly, *gnaphalii* larvae were unusually and preferentially persecuted by parasites from soon after emergence and, from the known high death rates, this factor must have been highly significant in lowering the numbers reaching maturity.

Summary

It has now been more than a decade since this insect has been reported in this country, either publicly or "on the grapevine". This has never happened before since its discovery during the early 19th century and it may well be that *gnaphalii* has been extinct since 1979.

The moth declined in range in a geographically organised manner throughout most of the 20th century, having enjoyed a south-easterly distribution that stretched from Essex to Hampshire at its peak. Larvae were usually scarce, even in the species' headquarters, but there were occasions when they occurred in dozens and sometimes in hundreds.

Habitat change, foodplant loss, and collecting, did not affect the insect. But the moth did have to contend with formidable parasitic onslaughts for at least a century, which undoubtedly often lowered numbers considerably. At the least, this made the species' survival much less certain, should any additional deleterious influence come into play. But unless there was an unnoticed invasion of the south-east by a "new" parasite during the 20th century, there must have been another additional factor which badly affected the species during this era.

Therefore, although this paper has brought to notice one prime factor in this insects' downfall, and has eliminated several others which were thought to have been involved, at least one other probably lies undetected. And there must be many unnoticed and unrecorded factors that could have affected this moth. So, why has *gnaphalii* disappeared?

Acknowledgements

This paper would have been impossible without the peerless enumeration of the Kent records by J.M. Chalmers-Hunt.

I am most grateful to B. Skinner for a number of unpublished records and for much information on *gnaphalii,* and to G. Haggett for detailed abstracts from A.J. Wightman's entomological diaries.

D.A. Lott kindly forwarded details of specimens held by Leicester Museum and B. Eversham similarly performed a search of the records held at Monks Wood Experimental Station.

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An influx of *Chrysodeixis chalcites* (Esper) in Sussex

On the evening of 14th October 1991, Mark Parsons, Doreen and John Owen and myself visited the Littlehampton area of the Sussex coast to record Lepidoptera and Coleoptera.

Three m.v. lights were operated near the sea front, and although numbers of moths in general were low, five examples of *Chrysodeixis chalcites* (Esper) were captured, four females and one male. Four were attracted to one of the m.v. lights the other taken hovering over ivy

blossom, all before 20.15 hours. One of the females laid in excess of fifty ova the following evening from which larvae have hatched.

Other noteworthy immigrants recorded were singletons of *Heliothis armigera* Hübn. and *Mythimna vitellina* Hübn. In addition, two common migrant species were also present; one *Agrotis ipsilon* (Hufn.) and a few *Autographa gamma* (Linn.), however, the apparent absence of other frequently recorded autumn migrants, e.g. *Udea ferrugalis* (Hufn.) and *Nomophila noctuella* (D. & S.), is perhaps worthy of note.

Sahara dust had been reported from various areas of southern and eastern England a few days before our visit, and it is tempting to suggest that the above *C. chalcites* may have originated from north Africa too. Bretherton *et. al.* (in Heath & Emmet, eds, 1983, *The Moths and Butterflies of Great Britain and Ireland,* **10**) suggest that this tropical and subtropical species although known from Portugal, Spain and France, may only be a temporary summer resident in these countries. However, in view of the recent increase of British records for this species, e.g. the six specimens noted from Essex in October of last year (Goodey, *Ent. Rec.* **102**: 111-118), perhaps *C. chalcites* has recently established itself further north into continental Europe.— A.P. FOSTER, 58 St Laurence Avenue, Brundall, Norwich NR13 5QN.

Unusual concentration of Elephant Hawk-moth larvae

Early in September 1991 I received a telephone call from Mrs J. Andrews who had discovered a number of larvae of the Elephant Hawk (*Deilephila elpenor* L.) feeding on ornamental *Fuschia* in her Orpington garden.

Two adjacent bushes, each some two feet high, contained a total of nine penultimate instar *elpenor* larvae, feeding openly in daylight. Another bush in the garden was uneaten. I have not before encountrered such an abundance of *elpenor* larvae in such a confined situation.— P. SOKOLOFF, 4 Steep Close, Orpington, Kent.

***Coeliodes nigritarsis* Hartmann (Col.: Curculionidae) in Cumbria**

On 24th August 1991, I took eight specimens of *Coeliodes nigritarsis* Hartmann by beating individual trees of Silver Birch (*Betula verrucosa*) on the edge of Cumwhitton Moss, Cumwhitton, Cumbria (NGR NY 5151).

Identification of the weevil was later confirmed by dissecting two males and the aedeagi agreed well with the illustration of this structure given in L. Dieckmann's paper dealing with the Ceutorhynchinae (1971 *Beitr. Ent.*, **22**: 40).

Coeliodes nigritarsis until now has only been found in Scotland and has been recorded from the following counties: West Sutherland, Inverness-shire and Argyll, and also Dumfries-shire where it was found near Loch Arthur in 1982 by Magnus Sinclair (1985 *Entomologist's mon. Mag.*, **101**: 61). This would appear to be a new record for Cumbria and it establishes a new record for Vice-county 70, Cumberland.— R.W.J. READ, 43 Holly Terrace, Hensingham, Whitehaven, Cumbria CA28 8RF.

THE PRESENT STATUS OF *EUCOSMA PAUPERANA* (DUPONCHEL, 1843) IN BRITAIN

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IN AN earlier paper (Emmet, 1978) I announced the rediscovery of this species after a lapse of 47 years in the form of a specimen taken on 5th May 1978 in the light-trap operated by J.L. Fenn at Hockwold, Norfolk, and a second netted by my wife on 17th May at Fleam Dyke, Cambridgeshire; the latter was the last locality known for the species, captures having been made there in 1930 and 1931 by G.I. Crawford. Since 1978 I have made about a dozen visits with friends to Fleam Dyke and on a few of them adults have been taken, but always in very low numbers. In 1978 larvae were found by Canon D.J.L. Agassiz at Royston, Hertfordshire and by me at Ashdon, Essex, about 100 yards from the Cambridgeshire border. I have not heard of any other recent records.

In my previous paper I outlined the earlier history of this species in Britain and there is no need to repeat what I then wrote except to comment that Bradley *et. al.* (1979) consider the records I cited from Cheshire and Lancashire to be unconfirmed, some at least of the specimens claimed having proved to be misidentifications of *Epinotia subocellana* (Donovan). My present purpose is to remind readers that the moth's most noted 19th century locality was Saffron Walden, Essex, where apparently it was last taken on 25th April by Warren (1885-86). It is therefore gratifying to record that specimens came to my trap in Saffron Walden on 21st and 25th May, 1991, showing that it has survived at this classic locality, or perhaps recolonised it. The two *E. pauperana* constituted two-thirds of my total catch of Tortricidae during the month of May.

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A melanic aberration of the Garden Tiger (*Arctia caja* L.) (Lep.: Arctiidae) in Cheshire

Starting with larvae obtained locally (Sale, Cheshire, v.c. 58) I bred this moth for three years. No new wild stock was introduced at any time during that period.

From the ova obtained in July 1990, approximately half the resulting larvae completed their growth quickly and pupated the following month; the remainder entered diapause. The moths from the first section of the

brood emerged in September 1990. Unfortunately no ova were obtained, as I was away at the time and had left the pupae in the care of the Mersey Valley Wardens, who released the moths as they emerged. No abnormal forms were reported.

The diapausing larvae contracted a fungal infection and only two survived to pupation. From one of these pupae, a male moth emerged on 12.vi.1991. The wings coresponded to ab. *fumosa* Hörhammer in its most extreme expression (Cockayne, 1949). The forewings were entirely deep chocolate brown with the outlines of the normal markings showing slightly darker; the hindwings were deep slatey-grey with the normal blue spots indistinctly showing as inky blue-black. The colour was slightly more uniform than in the figures in Skinner (1984) and Heath & Emmet (1983). The collar, femora and parts of the abdomen (anterior segments of dorsal surface, most of lateral surfaces and posterior margin of each segment on ventral surface) were however red, which Cockayne (*loc. cit.*) implies to be features of heterozygous *fumosa*. Robinson (1971) considers that *fumosa* is determined by a single gene and is the homozygote, and that the heterozygous form is variable and could include, for instance, a form with only the hind wings smokey.

I am totally at a loss to understand how this form came to arise from stock which had been inbred for four generations, unless it was a fresh mutation. Very regrettably I had no female with which to mate the moth; my only other surviving pupa was female but did not eclose until 23.vi.1991 by which time the aberrant male, though still alive, was too weak to mate. (The female was of normal facies, and crippled.) The aberrant specimen has been deposited in Liverpool museum.

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Initiative for Scottish Insects. Scottish-based Entomologists, aware that the insects of Scotland are rich in significance yet poorly understood and in uncertain need of conservation, have recently formed the Initiative for Scottish Insects. The ISI exists to promote the appreciation, knowledge and conservation of the Scottish Insect Fauna. ISI consists of a number of working parties each devoted to a particular insect order including one for arachnids. Working parties are currently assessing the species within the group to which they refer. We would like to contact anyone who has or would like to record or study Scottish Insects. For entomological visitors to Scotland information about sites, species and collaborative projects as well as further details of the ISI are available from Graham E. Rotheray, Royal Museum of Scotland, Chambers Street, Edinburgh EH1 1JF.

BUTTERFLIES IN TOURIST RESORTS. NUWARA ELIYA, SRI LANKA.

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NOWADAYS many of us take our holidays, and often work, in distant tropical places. It may be worthwhile to record observations regarding species seen and habitats encountered in one of these locations. I myself spent three months with my wife in Sri Lanka in 1988, of which two weeks, from 13th - 26th February, were spent in the hill station of Nuwara Eliya. This lies at an altitude of around 6,200 feet, in the centre of the tea estates, although the town itself and its immediate surroundings are an important producer of temperate vegetables for the Sri Lanka market.

Happily, the montane forest which once clothed the area has not entirely disappeared. Above the town itself, Mount Pidurutalagala (Pedru for short) rises to nearly 8,300 feet, and being crowned by a telecommunications centre, is controlled by the military and out of bounds to anyone who might interfere with the habitat. Ridges surrounding the town are also partly clothed with natural forest, and a small reserve on the outskirts, known as Galwaysland, is barred to the vegetable growers. Consequently much of the native butterfly fauna has survived within easy reach of the visitor, unlike so many agricultural areas of the Far East, where the wild native flora has almost disappeared for hundreds of miles, with consequent depletion of insect variety.

We chose February for our visit, as this is a month when sunshine occurs on most days; at other seasons the sun may hardly appear for months on end. Some very obvious butterflies soon make one feel at home. *Vanessa indica nubicola,* the Indian Red Admiral, was common around the hotel. Climbing through the tea estates, a big hatch of *Vanessa cardui* had occurred, the larvae here feeding on *Artemisia,* a common weed of open ground. While picnicking in the tea at the top, alongside a patch of forest, we found numerous large fritillaries, *Argynnis hyperbius taprobana.* One further spectacular Vanessid, *Kaniska canace haronica,* the Blue Admiral, was not uncommon in the rides of Galwaysland.

Apart from *V. cardui,* the sub-species involved are all endemics, but the species themselves occur widely across Asia in temperate circumstances, even to Hong Kong, in spite of enormous intervening distances of unsuitable habitat. The most unexpected case of such discontinuous distribution is of course *Vanessa indica,* which re-appears in the Canaries (sub-species *calliroe*). Another Nymphalid to be seen at this time of year in wooded areas and gardens is *Neptis hylas varmona,* the Common Sailor, which looks like a small White Admiral, and has relatives in south-west Europe (*N. sappho, N. rivularis*).

More striking is an endemic species of milkweed butterfly, *Parantica*

taprobana (formerly *fumata*), the Ceylon Tiger, a large brown insect often seen flying along the roads. This should not be confused with another brown Danaid, *Euploea core asela,* the Common Crow, which is larger, has rounder wings, and flies in a more leisurely fashion. Two other bluish species of milkweed butterfly, *Parantica aglea aglea,* the Glassy Tiger, and *Tirumala septentrionis musikanos,* the Dark Blue Tiger, were also relatively common. The only Satyrid in evidence was *Lethe daretis,* the Ceylon Tree Brown, a fast-flying, elusive, shade-loving insect, occasionally seen on wet rocks.

We observed three swallowtails during our visit, a relatively low number, due no doubt to the altitude and the cool conditions. The most spectacular was *Papilio helenus mooreanus,* the Red Helen, which was common in the Galwaysland Reserve; in spite of its English name, it appears as black and yellow on the wing. Other species seen from time to time were the common red and black citrus swallowtail, *Papilio polytes romulus* (form *polytes*), the Common Mormon; and *Graphium sarpedon teredon,* the Common Bluebottle, a fast-flying blue-green banded species. All three occur in various sub-specific and varietal forms over much of Asia.

Five species of Pierid were common. The small whites were represented by *Appias albina venusta,* the Common Albatross, and *Appias paulina galene,* the Lesser Albatross. The caterpillars do not however feed on cabbages, but on the closely related caper family. *Catopsilia pomona,* the Lemon Migrant, is a large fast-flying species, somewhat reminiscent of a Brimstone. The Common Grass Yellow, *Eurema hecabe,* was much in evidence, just as in most other parts of Asia and Africa, flying mainly a few feet above the ground.

The most interesting Pierid was *Delias eucharis,* the Common Jezebel, with its large red marginal spots on the hindwing underside; a warning colour, since the larvae feed on mistletoes of the family *Loranthaceae,* from which they probably sequester a useful toxin. They are mimicked very closely by a large capparis-feeding White (*Prioneris sita*) which however we did not see in Nuwara Eliya. The genus contains about 165 species in Asia and Australia, many of them highly localised. In Africa, the genus *Mylothris* fills the same niche, while in tropical America there are several mistletoe-feeding genera. A useful future topic for biochemical research.

There were six common Lycaenids, the most numerous being our old friend, the Long-tailed Blue (*Lampides boeticus*). There were enormous numbers on the golf course behind the hotel, mainly associated with the dominant gorse bushes (introduced in the last century by the explorer, Sir Samuel Baker). As befits the temperate conditions, there was a pretty relative of the Holly Blue, *Udara lanka,* the Ceylon Hedge Blue, with a preference for patches of damp mud. With a similar preference was a very small skipper-like Lycaenid, *Prosotas nora ardates,* Common Lineblue. Not uncommon around gardens was the attractive *Talicada nyseus,* the Red Pierrot, with its large reddish hindwing outer marginal area. Equally

unusual to European eyes were the powder-blue *Jamides celeno tissama,* the Common Cerulean, another low-flying garden species; and the brilliant metallic blue *Jamides bochus,* the Dark Cerulean, a fast-flying treetop species.

We found no great variety of skippers, probably due to the cool conditions, the species seen being limited to *Pelopidas agna agna,* the Little Branded Swift, and *Parnara naso bada,* the Smallest Swift, both of which were common.

During our stay, we visited Micklefield Butterfly Farm, out in the country near Gurutalawa, where Tony Fairweather and his small team of Sri Lankan assistants were breeding stocks of mainly Swallowtails and Nymphalids for the UK Butterfly House market. Unfortunately a few months later, Tony died of a heart attack, and the farm came under pressure from terrorists. At the time of writing, I do not know if the enterprise still survives.

Identifications have been based mainly on Woodhouse's comprehensive study of the Ceylon butterflies, with nomenclatural updating from D'Abrera. For newcomers to the Sri Lanka fauna, an illustrated introduction by John and Judy Banks is available from Lake House Investments Ltd, Colombo.

I can also record, on a trip to the south-east of the island on 29th January 1988, the occurrence of two specimens of *Atrophaneura jophon jophon,* a rare endemic on the list of vulnerable Swallowtails. They were in deep shade, by the roadside, south of Deniyaya, on the border of the Sinharaja Forest. This is a large lethargic species, unlikely to survive outside its quiet rainforest habitat, which however is still sufficiently large to protect it for the present. But it would be worthwhile to breed and maintain captive stocks, as an insurance, and for re-introduction into some of the smaller neighbouring forest reserves.

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***Mintho rufiventris* (Fall.) (Dipt.: Tachinidae) at Charlton, S.E. London.**

I think it worth recording the occurrence, on four separate occasions, of this rather striking and uncommon fly in my present garden. Though particularly a garden insect I never found it in my previous one at Blackheath, where I collected many species of Tachinidae (and other groups) over the period 1961-74. The three taken are males.

The first example was detected low down on an elder bush at the end of the garden (17.vii.78) and instantly recognised. Of possible significance was the presence at the spot of a quantity of dry, dead, straw-like grass, which could well have been the pabulum of the host of *Mintho* — given by van Emden (*1954, Handb. Ident. Br. Insects,* **10**(4a): 34) as *Pyralis glaucinalis* L. However, I suspect that this moth is too scarce here — it turns up occasionally — and that a likelier host would be its commoner relative *Hypsopygia costalis* (F.), if of sufficient size. The above surmise is rather strengthened by the capture of another specimen of the fly at precisely the same spot two years later (28.viii.80).

The second one to be taken was swept from a mass of honeysuckle near the house (25.vi.80); the last, not caught, was sighted towards the base of a snowberry bush in the front garden (27.vi.84) again with dry dead vegetation at hand. This low rate of incidence is, I believe, quite usual with *M. rufiventris,* a species nearly always encountered singly or at most in very small numbers.

The latest record of *Mintho* previous to those just given is probably that of two males on a garden hedge at Bromley, Kent, by Mr P.J. Chandler (1976, *Ent. Rec.,* **88**: 15-16).— A.A. ALLEN, 49 Montcalm Road, Charlton, London SE7 8QG.

A Cross-species pairing

At 7.30am on the morning of 4th July 1991, with the temperature a very humid 17°C., an unusual pairing of moths was discovered at Peacehaven. Inside a m.v. moth-trap, a male *Oligia latruncula* D. & S. (Tawny Marbled Minor) was mating with a female *Hoplodrina ambigua* D. & S. (Vine's Rustic). The male died at 2pm *in situ* and some force was needed to separate the pair. The female died two days later, without laying any eggs.— COLIN PRATT, 5 View Road, Peacehaven, East Susex.

News from the Netherlands

The genus *Pancalia* (Lep.: Cosmopterigidae) is represented in the U.K. by two species, the local but common *P. leuwenhoekella* L., and the much sought after (but rarely found) *P. latreillella* Curt. (= *nodosella* Mann.). Both species fly in bright sunshine, and are very attractive to look at.

In a recent revision of Dutch material (Koster, J.C. (1991) Het geslacht *Pancalia* in Nederland (Lepidoptera: Cosmopterigidae) *Ent. Ber. Amst.* **51**(8): 101-107) a third species, *Pancalia nodosella* Bruand, has been found. Twenty-nine specimens were located in various collections, capture dates varying between 16th April and 19th May. The species is apparently confined to coastal dunes. Apart from the exciting thought that *nodosella* might be found in the U.K., the paper cited above provides excellent diagnostic illustrations of the three species — wing pattern , antennae and genitalia. Males and females are separately keyed in the text, but in Dutch.

PAUL SOKOLOFF.

WHY WAS 1887 AN EXCEPTIONAL YEAR FOR VAGRANT BUTTERFLIES IN BRITAIN?

JOHN F. BURTON

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SOME TIME ago, while researching an article for *Country Life* (Burton, 1987) on vagrant butterflies in the British Isles, I perused T.G. Howarth's 1973 update of *South's British Butterflies* and was struck by the fact that several such species were recorded in 1887. All but one of them (found in June) were met with between 27th July and 1st September. They were as follows:

Small Apollo *Parnassius phoebus* (Fabricius): one captured on 1st September in the mountains above the Penrhyn slate quarries, some seven miles from Bangor, Gwynedd, North Wales, by E.W.S. Swabe, then a pupil at Marlborough College. This specimen was identified by E. Meyrick (1887), the well known microlepidopterist, who was a master at the school.

The Cleopatra *Gonepteryx cleopatra* (L.): one at Fotheringham, near Forfar, nor far from the east coast of Scotland, in June 1887 (Howarth, 1973; Thomson, 1980).

Mountain Dappled White *Euchloe simplonia* (Freyer): two males captured with a female Bath White *Pontia daplidice* (L.) by a schoolboy, C.E. Prince, in August on the Castle Heights, Dover, Kent. The *daplidice* seems to have been the only one reported in the British Isles in 1887; Williams (1958) gives no records for that year in his table of records of immigrant species for the years 1850 to 1955.

These two *simplonia* are listed by Emmet and Heath (1989) as the lowland species of Dappled White owing to confusion over the nomenclature. They followed Higgins and Riley (1983) in calling this lowland species *simplonia* (Freyer), when, in fact, the correct name should be *ausonia* (Hübner). I am indebted to Dr Otaka Kudrna (pers. comm.) for this information.

The Mountain Dappled White is univoltine and flies in sub-alpine meadows in the Alps, Pyrenees and Cantabrian Mountains in June and July. Dr Kudrna (pers. comm.) tells me that it can be found flying as late as late July in late seasons at higher altitudes, but August is a late date for the Kent specimens. I can only assume that either the captor subsequently got the date wrong or that, because of the long dry summer of 1887, *simplonia* was on the wing much later than usual. This date is, of course, much too late for the lowland species *ausonia*. The specimens were identified by W.P. Curtis (1945) into whose collection they passed. However, Curtis described them as *E. crameri,* now regarded as a distinct species confined to the Iberian Peninsula (Kudrna, pers. comm.). This is interesting as northern Spain would be a more likely migratory source for both *E. simplonia* and *P. daplidice* than the Alps. If they still exist, it would be

useful to re-check the precise identity of the 1887 Kent specimens and their data labels for an exact date. In response to my request, Mr David J. Carter of the British Museum (Natural History) kindly informs me (pers. comm.) that he has been unable to find them in the National Collection or any clues to their whereabouts in two obituaries of W.P. Curtis.

Sooty Copper *Lycaena (Heodes) tityrus* (Poda): a male captured in August at Lee, near Ilfracombe, Devon by C.A. Latter.

Weaver's Fritillary *Boloria dia* (LK.): one captured on 27th July near Christchurch, Hampshire, and now in the Hope Department at Oxford (Howarth, 1973).

On receiving my copy of Emmet and Heath's book (1989), I checked all these reports and also looked through it for any other records in 1887 of such extremely rare vagrants, but found none. Of those mentioned above, the question immediately arises: were any or all of them genuine migrants? Indeed, it has been asked and, as one would expect, opinions differ. Of *P. phoebus,* A.M. Emmet, in Emmet and Heath (1989), states that "migration is not a possibility" and quotes Meyrick's (1887) opinion that someone had attempted to introduce the species into the Welsh mountains as well as Barrett's (1893) suggestion that it had been accidentally imported in an early stage of its development on alpine plants intended for rock-gardens. Howarth (1973) doubted the record on the grounds of the late date, but this does not seem to me all that impossible for a species on the wing in July and August. However, Dr Otakar Kudrna (pers. comm.) also considers the date "hard to believe", as he tells me that it only flies as late as mid-August at higher altitudes in late seasons. With regard to *G. cleopatra,* Howarth thought that accidental introduction through assisted passage on ships was a more likely explanation of the Forfar specimen and other single examples reported in the Isle of Wight (1870 and 1873), Suffolk (1896) and Cornwall (1957) than migration by natural means. In the case of a more recent record of *cleopatra* near Dover, Kent, on 27th July 1981, R.F. Bretherton, in Emmet and Heath (1989), stated that it was thought most likely that this had arrived via a cross-Channel ferry. On the other hand, Bretherton and Emmet, in Emmet and Heath (1989) appear to accept the two male *E. simplonia* at Dover in August 1887 as probable natural migrants, although reporting that Chalmers-Hunt (1960-61) considered them as "doubtfully genuine". Furthermore, while noting that *L. tityrus* is not known to be migratory, Bretherton (*op. cit.*) remarks that "wind-borne specimens could easily reach the coast of England", and that there is "a strong presumption" that one taken at Seaford in East Sussex in August, 1958 "had this origin". He makes no direct comment concerning the possibly origin of the August 1887 specimen.

In his account of *B. dia* in Emmet and Heath (1989), Bretherton commences the section on "occurrence and distribution" with the statement: "The known British examples were probably accidentally or deliberately introduced", then after detailing them, he goes on to write

"Most of these records were probably of genuine captures, but none of them, except that at Christchurch, Hampshire, in 1887, and possibly that near Ipswich in 1899, were in places where natural British occurrence seems at all probable".

For my part, I believe it is probable that all these 1887 vagrants arrived in Britain quite naturally and not through any human agency. The summer of 1887 was an exceptionally hot, dry one with frequent, often persistent easterly and south-easterly winds blowing around northward-drifting blocking anticyclones which dominated weather over western Europe (Manley, 1972). At times, these winds were blowing from the Alps and may well have caught up many individuals of such species as the Small Apollo, the Cleopatra, Bath White, Mountain Dappled White, Sooty Copper and Weaver's Fritillary, carrying a few of them to British shores. And these winds were not only reaching south-eastern England, but eastern Scotland and Wales too, where summer temperatures were also high. It seems to me therefore that some individuals of the above species arriving in Britain in 1887 may have originated in the western Alps or their foothills, and were carried from there in a south-easterly airstream. According to Higgins and Riley (1980) and Geiger, W. (1987), *P. phoebus* occurs between 1200-2500m, *P. daplidice* up to 1800m, *L. tityrus* up to 1500m, *E. simplonia* up to 2200m and *G. cleopatra* and *B. dia* up to 900m. It would be useful, incidentally, to know if the *tityrus* belonged to the nominate race or the alpine race *subalpina*.

Unfortunately, there seems to be no record of the precise dates in August on which the specimens of *P. daplidice, E. simplonia* and *L. tityrus* were captured in Britain, so we cannot know if they arrived on the same or adjacent dates. The only precise dates available for any of these 1887 immigrants are for the specimens of *P. phoebus,* captured on 1st September, and the *B. dia,* captured on 27th July. Judging by the weather maps for 26th and 27th July 1887, kindly supplied by the National Meteorological Archive, the *B. dia* was more likely to have arrived from Brittany or Normandy in France, or possibly even from northern Spain, as the light winds on those two dates were from the south and south-south-west around the edge of a depression moving northwards to the west of Ireland.

Of the more regular migrants, 1887 was only notable, judging from Williams (1958), because of a high number (316) of Convolvulus Hawk-moths *Agrius convolvuli* (L.), the first Spurge Hawk-moth *Hyles euphorbiae* (L.), in Norfolk in September, since 1872 (the next was not reported until 1907); and a relatively good immigration of Red Admirals *Vanessa atalanta* (L.). In addition, five Camberwell Beauties *Nymphalis antiopa* (L.), two Clouded Yellows *Colias croceus* (Geoffroy), two Monarchs *Danaus plexippus* (L.), five Death's-head Hawk-moths *Acherontia atropos* (L.), one Striped Hawk-moth *Hyles lineata livornica* Esper, 12 Humming-bird Hawk-moths *Macroglossum stellatarum* (L.), one

Clifden Nonpareil *Catocala fraxini* (L.), one Purple-shaded Gem *Euchaleia variabilis* (Pill. & Mitt.) and one Bordered Straw *Heliothus peltigera* Denis & Schiffermüller were other obvious southern European immigrants reported. In the absence of precise dates it is impossible to link the movements of any of these with the vagrants which are the subject of this paper, but it is probable that some of them arrived in the same airstreams in June and August from south-central Europe.

Of particular interest in this connection is the Purple-shaded Gem *Euchaleia variabilis* which was captured in Co. Wicklow, eastern Ireland, in August 1887, a rather late date for the species. It is considered to be a largely montane species, found in the French Massif Central and Pyrenees, and the Alps (Heath & Emmet, 1983), and may have reached the British Isles at the same time as the Mountain Dappled Whites and Bath White, and from the same area.

Although evidence to the contrary is growing, there is still, in my view, a tendency for some lepidopterists to subscribe too readily to the belief that the appearance of unusual insects in the British Isles must be due to accidental importation via ships or imported merchandise. Clearly, this sometimes happens and should always be seriously considered as a possibility, as indeed should deliberate introductions by well meaning, but misguided conservationists and other enthusiasts. The latter have certainly muddied the waters in recent years, although very few, I believe, are releasing continental species not normally found in Britain. The release of *Boloria dia* larvae in Surrey in July, 1984 is, of course, one such undesirable example. However, once these possibilities have been considered, lepidopterists should not be afraid of contemplating the likelihood that they flew here naturally, even from quite distant parts of Europe, assisted by winds arising as a result of particular weather conditions.

Before the Second World War, many ornithologists ascribed the arrival in the British Isles of vagrant short-winged small birds from distant parts of North America, Europe and Asia to accidental importation on ships, as they could not conceive that these birds could make such long land and sea journeys in any natural way. These views were reinforced by the fact that migrating birds often alight on ships at sea and stay aboard them until near land, when they have sometimes been seen to fly off towards the shore. But since the war, such assisted passages could not explain more than a small proportion of the large numbers of Nearctic and Palearctic warblers, finches and other small birds now known to reach British shores annually, especially at migration times. Modern studies have shown conclusively that most of them do indeed fly here without any artificial aids, "drifted" by powerful winds. Many of these "lost" birds, wandering far beyond their normal ranges, do, of course, perish *en route,* but some survive their perilous journeys and appear in unexpected locations. The

same is true of butterflies and moths carried outside their usual range by strong winds.

A lot has been done in recent years by such workers as R.A. French and G.W. Hurst in back-tracking, with the aid of weather maps, the probable routes taken by unusual immigrations of lepidoptera species as, for example, the Diamond-back Moth *Plutella xylostella* L. (French and White, 1960) and Small Mottled Willow *Spodoptera exigua* (Hübner) (Hurst, 1963). In future, it would be profitable to examine the appropriate weather maps in connection with all future records of vagrant lepidoptera. It might also be well worth examining in this way most, if not all, previous records of vagrant butterflies reported in the British Isles. Strong circumstantial evidence might thereby be produced showing that such occurrences are more likely to have been natural than otherwise.

Every year, nowadays, a veritable army of British bird-watchers, skilled in difficult identifications, record remarkable numbers of vagrant birds from various parts of the western Palaearctic and eastern Nearctic regions, many of them species which 80 years or so ago would not have been expected and which, if occasionally reported, were not usually regarded as genuine migrants.

Today, ornithologists have a far greater understanding of the weather conditions that take birds off course and are often able to predict when and where they are likely to arrive on British shores. A similar awareness among the smaller, but growing numbers of diurnal field lepidopterists interested in migration may reveal a greater degree of vagrancy among European butterflies than is at present suspected. I hope I may be forgiven therefore for daring to speculate on those species (Table I), not hitherto recorded in our islands, for which an observant eye should be kept open, especially when operating on or near our coasts. Obviously, some of these species are far more likely to occur than others and many are not known to be migratory, but in certain turbulent weather situations with strong winds they need not be. I am not arguing that all of these species will turn up in the British Isles at some time or another, only that there is a possibility of them doing so.

Acknowledgements

I am grateful to the late Mr R.F. Bretherton, Mr D.J. Carter, Dr O. Kudrna and Dr D.F. Owen for information and advice; also to Mr Michael J. Wood, Archivist of the National Meteorological Archive, Bracknell, for supplying copies of the *Daily Weather Report* for 1887.

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Table I. Butterfly species which might possibly occur naturally in the British Isles as vagrant immigrants.

Species	Nearest possible/likely sources of immigration
Clouded Apollo *Parnassius mnèmosyne* (L.)	Sweden, France or Germany
Morocco Orange Tip *Anthocharis belia* (L.)	Spain
Spanish Purple Hairstreak *Laeosopis roboris* Esp.	Northern Spain
Sloe Hairstreak *Nordmannia acaciae* (F.)	Northern Spain, southern France
Ilex Hairstreak *N. ilicis* (Esp.)	Spain, French coasts to Denmark
Blue-spot Hairstreak *Strymonidia spini* (D. & S.)	Spain, S.W. France and Germany
*Scarce Copper *Lycaena (Heodes) virgaureae* L.	Scandinavia, northern Germany or northern Spain
§Purple-shot Copper *L. (H.) alciphron* (Rott.)	Northern Spain or S.W. France
*Purple-edged Copper *L. palaeochrysophanus hippothoe* L.	Scandinavia, France, Germany or Northern Spain
Black-eyed Blue *Glaucopsyche melanops* (Bois.)	Northern Spain
Alcon Blue *Maculinea alcon* (D. & S.)	France, Low Countries, Germany or Denmark
Baton Blue *Pseudophilotes baton* Bergstr.)	Western France or northern Spain
Idas Blue *Lycaeides idas* (L.)	Northern Spain, France, Low Countries or Scandinavia
Cranberry Blue *Vacciniina optilete* (Knoch)	Scandinavia
Turquoise Blue *Plebicula dorylas* (D. & S.)	N.E. Spain or S.W. France
Lesser Purple Emperor *Apatura ilia* (D. & S.)	France
Poplar Admiral *Limenitis populi* (L.)	France, Germany or southern Scandinavia
Southern White Admiral *L. reducta* (Stgr.)	France or northern Spain
*Niobe Fritillary *Argynnis (Fabriciana) niobe* (L.)	Coasts from Spain to Scandinavia
Lesser Marbled Fritillary *Brenthis ino* (Rott.)	Northern Spain, S.W. France, Low Countries or Scandinavia
Cranberry Fritillary *Boloria aquilonaris* Stichel	Scandinavia or northern Germany
Knapweed Fritillary *Melitaea phoebe* (D. & S.)	Spain or western France
False Heath Fritillary *M. diamina* (Lang)	Northern Spain, France or southern Scandinavia
Meadow Fritillary *Mellicta parthenoides* (Keferstein)	France or Spain
Woodland Grayling *Hipparchia fagi* (Scop.)	S.W. France or northern Spain
Rock Grayling *H. alcyone* (D. & S.)	Northern Spain
Tree Grayling *Neohipparchia statilinus* Hufnagel	Spain or western France
*The Hermit *Chazara briseis* (L.)	France
The Dryad *Minois dryas* (Scop.)	France or Belgium
Great Banded Grayling *Brintesia circe* (F.)	S.W. France or Spain
Dusky Meadow Brown *Hyponephele lycaon* (Kühn)	Northern Spain
Pearly Heath *Coenonympha arcania* (L.)	Northern Spain, France or Belgium
Scarce Heath *C. hero* (L.)	Northern France or Belgium
Large Wall Brown *Lasiommata maera* (L.)	Spain, France or Belgium
Woodland Brown *Lopinga achine* (Scop.)	France or Belgium
Large Grizzled Skipper *Pyrgus alveus* Hübner	France or Belgium
*Oberthur's Grizzled Skipper *P. armoricanus* Oberthur	France or Belgium
Red Underwing Skipper *Spialia sertorius* (Hoffmannsegg)	France or Spain
*Mallow Skipper *Carcharodus alceae* (Esp.)	France or Spain
Large Chequered Skipper *Heteropterus morpheus* (Pallas)	France

* Indicates that previous records were considered to be doubtful immigrants.
§ Indicates that a record of one in 1886 may have been a genuine migrant.

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Hazards of butterfly collecting — Andamans, 1988

My rotund Gujerati taxi driver and I finally stumbled onto some real virgin forest some 50 km north of Port Blair, the headquarters of the Andaman Islands, in the Bay of Bengal, two hours flight from anywhere. Till recently the islands were off limits to foreigners, and I was stretching the range given in my permission to visit the "municipal limits of Port Blair" and one or two seaside resorts.

The islands have a most interesting fauna, related to that of Burma, but with a high level of endemicity.The Nicobar Islands to the south have their affinities with Sundaland, also with high levels of endemicity. The degree of overlap between the faunae of these two neighbouring island groups is remarkably small and largely limited to the most common and widespread species. Even among these, such as in the Common Crow (*Euploea core*), there are sometimes subspecific differences so marked that it is difficult to accept them as members of the same species.

Villagers gathered to see my preparations — unfurling of net, readying of camera, the laborious process of fitting the leech socks just right. It must be emphasised that all the villagers are settlers from the Indian mainland, mainly from Kerala, Tamil Nadu and West Bengal. The original population of the islands, 80 percent of which is still virgin jungle, numbers only a few hundreds in two main tribes which are hunters and gatherers (as is the case also in the Nicobars, except for the Nicobarese who number 20,000 and have a well developed agricultural culture).

As I moved towards the forest, a cry went up: "Jarwa jarwa! !" I am well used to people considering it quite unheard of for someone like me to

penetrate virgin forest, and these were mainlanders from densely populated India. Finally, a man came up to me, continuing to say "jarwa", and going on to mime bow and arrow. Suddenly I understood. They were not warning me about the forest or wild animals. They were warning me about the *Jarawa* tribe, a group of negrito origin, who have shunned contact with the flood of immigration and deforestation that characterise the area around Port Blair.

It is sobering suddenly to be warned like this in all seriousness about fellow human beings, and very different from warnings about riding the New York Subway at night. I was at the dividing line between two incompatible cultures, and closer investigation showed that the villagers' warnings were not without foundation. The Jarawa refused villagers access to the forest and several had been killed by their poisoned arrows. At night the Jarawa would raid farms for chickens and yams, not hesitating to use their bows and arrows if detected. Also sought after were metal objects; the Jarawas' only concession to the modern world has been to use metal for their arrow heads.

Only rarely have I come across aboriginal groups while butterfly collecting. Once, in the forest of Malaysia I suddenly came across a family of *orang asli* — the people of the forest — grilling some wonderful looking spits of freshwater crabs, a scene of peaceful idyll that I would dearly have liked to capture on film. The leader came up to me, tipped out the contents of my collecting bottle, and commenced grading my bag. Skippers were out, rare nymphalids were in. In sign language he made it clear that he too collected butterflies — in his case for profit. In Ecuador I once ran into a small group of Auca Indians, now peaceful, who thirty years ago massacred a group of American missionaries near by, holding the attention of the world as never before or since. They carried two metre long blowpipes with poisoned arrows; a small bird they shot for my attention fell out of the sky five or six wing flaps after being hit. They motioned me to follow them, showing me a near perfect sandbank on a river bend, full of butterflies.

Perhaps one day it will be possible to meet the Jarawa not as "hostile", but as interpreters of the unique Andaman forests that they know better than anyone else.— TORBEN B. LARSEN, 358 Coldharbour Lane, London SW9 8PL.

Lithophane semibrunnea (Haworth) (Lep.: Noctuidae) The Tawny Pinion in West Yorkshire

On the 6th October 1991 whilst working ivy blossom at night on the borders of West and South Yorkshire (v.c. 64) I was most surprised to see and capture a specimen of the Tawny Pinion, this being only the second record for the County.— PETER FORDER, Gynesta Lane, Menston, Ilkley, West Yorkshire LS29 6AU.

REMINISCENCES OF AN AMATEUR LEPIDOPTERIST, 1920-90

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Continued from Vol. 103, p.312.

11. Iran, Egypt and Iraq revisited

Civil aviation was at first slow to supplant sea or overland transport during 1949-57; much still depended on one's route and destination. For Iran and Iraq the Strick Line's vessels had agreeable, if limited, passenger accommodation from English ports, through the Suez canal to the roadsteads of the Gulf. The Italian line's small but fast liners served the Mediterranean ports west of Suez, but in the Gulf lighters operated between ship and shore. By either sea-route, private cars could be shipped. Middle East roads were still rough, but a comfortable sea-trip of variable length made up for discomfort, and for an entomologist the prospect of sampling fresh localities before or after the sea-trip was hard to resist, and could be assured by using one's own car rather than the train, or bus.

At Bushire the Gulf Residency had finally vacated its palatial premises with Indian-Raj overtones, but survived, in name at least, at the friendlier Bahrain. Shiraz Consulate now found itself with a mere subordinate Vice-Consul at Bushire, and a motorised cinema-van which it could send out through the length and breadth of the province. Whether on the tortuous mountain-road to the coast or the dustier, flatter routes to various other towns, I found it possible to insert an hour or two on entomology into the long official day or night, often breaking fresh ground and making further discoveries. So passed 1950.

On my first leave from my second innings at Shiraz a whole month was spent on ss. Registan between Bushire and Liverpool. Fortunately travelling time was not deducted in those days from earned leave. May to October 1951 the shipped car enabled me to revisit the various family members in England, several Museums, my Alma Mater to hear the music at Kings', the Amsterdam entomological Congress where I exchanged duplicates with Warnecke and Forster, Amsel and his family in the New Forest, and Boursin in Paris. At Tring I deposited and re-arranged old and new storeboxes and several times paid respects to the now retired Dr Cockayne at his High Street home.

His days were engrossed at the Zoological Museum labelling and studying the newly formed Rothschild-Cockayne-Kettlewell (now National) collection of British Lepidoptera, and incidentally producing descriptions of subspecies and aberrations published over many years in this journal, indeed since years before his assumption of its editorship, or the pooling of the three collections.

Of course I also visited Dr Lionel Higgins at Woking, enabling him to illustrate (Higgins 1955) Iranian *Melitaea* forms not available to him in his

1941 *Illustrated Catalogue*. Plans were vaguely formulated for him to meet me in the Middle East . . . not all of which could be carried out exactly.

Re-embarking car and family from Milwall docks in October I landed them at Bushire in early November and resumed charge of Shiraz.

Among foreign entomologists visiting me at Shiraz the outstanding Iranian was the still young A.G. Davatchi who appeared at the Iranian capital in circumstances somewhat similar to those resulting in the appearance, in the Iraqi capital, of the young Dr Dhia Ahmad. Davatchi's 1958 work on the entomology of the wild and cultivated *Pistacia* trees of Iran marked him out as a competent author comparable to Dr Abdul Mun'im Talhouk of the Lebanon. Such men perfectly understood what I was doing chasing bugs in their countries, and why; indeed their training for this activity was better than mine. They would never have asked such questions as the older school of easterner sometimes put to me when I showed them a storebox of specimens to satisfy their curiosity about my mountain-topping:

"You can eat partridges and moufflon, but why hunt these?"

There would have been no need for me to suggest that reason in terms I feared they might not appreciate:

"In the big Museum in London is an example of every butterfly in the world with its proper name, and many interested savants come to see them and compare . . ."

"But are not ours just ordinary ones?"

In raising the question of a lepidopterist's motivation, he was probing deep waters indeed. Evolving from the puerile to the super-specialised, motivation is a theme popping up in a new guise in nearly every chapter of these memoirs.

"Archaeologists," he said, "find gold, and we now stop them exporting it from our country, or agree that our Museums should divide the objects." "But this butterfly, only found on the summits of Kuh-i-Barfi and Kuh-i-Kalat, reproduces itself every year, and your own officials can catch it every year for your museums . . ."

My finger indicated *Melitaea casta,* one of seven congeners forming extraordinary rows of colour and pattern in the box.

"An endless resource," he mused, "like our oil?"

A topical comparison, indeed, for a few weeks later Dr Musaddiq closed down all our Consulates, curtailing our stay in Shiraz.

It was January 1952, and my family sailed on ss. Baharistan for England, while my staff and I motored to Tehran to be scattered by re-posting decisions in various directions. Personally I found myself flying from Tehran to Cairo, where a further convulsion known as "Black Saturday" had changed the face of Egypt. In a hotel room at Ismailiya, on the Suez canal, I opened a Consulate distinguished by a notice-board placed on the table. The Lancashire fusiliers had fought a small battle in disarming the police, triggering the riots in Cairo. The King's portrait on the Governor's walls hung shattered and askew as I paid my respects, and there were bullet-

holes in the wall. There was a lull between events and everyone was polite and calm. Sleeping in a bathing-hut I chatted with uniformed compatriots or Italian waiters most of the time, between catching a new species of "wainscot" at the hut lights (*Sesamia wiltshirei* Rungs) and some less mysterious moths in the sandy patches where broom-like bushes of *Retama raetam* perfumed the air with their white flowers.

I joined also in the sailing activities of our air-force officers, who liked this form of recreation better than our naval officers appeared to do; they even gave me a small booklet vouching for my rudimentary yachting skills.

The Baharistan, with my family on board, also steamed through the canal during my sojourn at Ismailiya, and I joined them for two days in February between Suez and Port Said.

In the Suez Canal Company's French club I got my first glimpse of some of the "free officers" who persuaded King Farouq to abdicate on 26th July, two months after my own departure from Egypt. He left no official heir to his dynasty and had probably forgotten a green and orange moth, still bearing his name and quite prevalent in the mountains of Sinai, West Arabia and South Oman (see chapter 10). A second example of the Ismailiya Wainscot moth, as far as I am aware has still to be taken; of course it is smaller and less beautiful then *Coenobasis farouki.*

I count myself lucky to have lived in Baghdad in that serene period following my flight from Fayyid to Habbaniyah, on 29th May. It crowned Nuri Pasha's long life like a golden evening, and the hostile Nasserite broadcasts from Cairo were punctuated by the Anglo-French fiasco at Port Said, after which in due course a military revolution terminated the Iraqi monarchy; but this exploded several months after I had been transferred to Brazil, my transfer-timings being again lucky.

During my five years as Consul at Baghdad I motored and steamed on home leaves in 1953 and 1955. Another home leave took place in 1957, *en route* to Rio. On all three occasions I drove across Europe visiting various Austrian and German colleagues. They often joined in field outings to the various beautiful and interesting habitats particularly the Austrian ones.

Hotels in Kurdistan were now being opened, the first Iraqi attempts to lure away from the Lebanon and Anti-Lebanon Arab or western tourists anxious to get relief from the torrid summers in the plain.

Like the hotels of the capital, these new ventures were mainly staffed by members of the Iraqi Christian minority. On the route from Erbil through Kurdistan to the Iranian frontier near Urumiya my first visits to which were described in chapter 5 of these memoirs, three small hotels started to operate: at Salah-ud-Din, a new settlement (where I stayed briefly in July 1954), Shaqlawa (the old rest-house, reconstructed, where I stayed with my family in April-May 1953, and Haj Omran, above Rayat (June 1956).The second was run by Michael Kossa who kindly caught many moths at the hotel lights in 1953-4 in months when I could not be there. I named after him, and illustrated in my book (1957) a subspecies of the Goat moth (*C.*

Koenigstein, Germany, October 1955. Herr G. Warnecke, Mrs G.M. Wiltshire, Frau Warnecke.

cossus kossae) peculiar to the Shaqlawa district. All three localities around these hotels were of great entomological interest. A fourth hotel also began to receive visitors at Sersang, on the Zakkho-Amadia road, further to the north-west in Iraqi Kurdistan: it was in the only part of Iraq where the pine *Pinus halepensis* var. *brutia* grew naturally. I knew the neighbourhood from my earlier stay at Mosul but was personally unable to visit this new hotel; Lionel Higgins did in 1957 and passed on to me the moths he took there and at Salah-ud-Din. I had in fact planned to join him on this trip to Iraqi Kurdistan but my transfer to Brazil intervened. Consequently my only joint trip with him in the Middle East proved to be that which we made in 1962 to the Bsherreh cedars, Lebanon, when I was Political Agent at Bahrain.

During these five years in Iraq I met some interesting entomologists, foreign and British. In Iraq itself the American ant-specialist Neal A. Weber stayed for a year or two at Abu Ghuraib, an agricultural station where Dr Dhia Ahmad was in charge of the entomological laboratory. Weber and his daughter were jointly interested in general field work and biology (see Weber, 1954 and 1955). I paid also a fleeting visit to the agricultural station at Deir Allah in Jordan, where the Britisher Trevor Trought resided for a couple of years or more. He published three short illustrated life-history articles on Middle East Lepidoptera (Trought, 1954, 1956) on mostly tropical elements of the Jordan-valley fauna, which contains a northernmost resident penetration of numerous Afro tropical species; he also sent me for determination some of the moths caught or reared there, of which regrettably *Cryphia troughti* mea proved to be a synonym of *C. petraea* Guenée (Wiltshire 1956).

Haj Omran, Iraq, Kurdistan, 1954. (Mt. Algord in background.)

I met Dr Evan Guest in Baghdad, as he and his wife were residing there during this period. He had been in Iraq before the second war, but the fruits of his botanical efforts did not appear until years after his second departure (see Guest 1966 ff.). Another botanist present was R.W. Haines. Finally, a medical doctor, Gerry Pringle, who continued to study lepidoptera, especially after his retirement and return to Britain, was a likeable and reliable public servant whose friendship I shall ever cherish.

I still vividly recall his accompanying me on a trip up the Dyala to Ouraitu and Gora-shala in spring 1956. We had accompanied Dr Amsel's party as far as Khaniqin on the Persian frontier, whence the Germans proceeded in their small Volkswagen bus bound for Afganistan, while we branched north to the places in the Kurdish foot-hills. Assisted by his son Friedhelm who drove much of the way from Germany, Dr Amsel's party had spent the night before at our house on the Tigris west-bank, where they listened, I hope willingly, to Bach's St Matthew Passion, of which I had received a new long-player shortly before and invited a few friends to come and hear. At Gora Shala Gerry took the opportunity to inspect the spleens of village boys infected by malaria, while I spent a few more hours there on the lepidoptera which included, among various local specialities, the large orange-tip butterfly *Zegris eupheme dyala* Riley.

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(to be continued)

THE LARVAL FOOD OF *EUPITHECIA* SPECIES *INDIGATA* HB., *DODONEATA* GUEN. AND *ABBREVIATA* STEPH. (LEP.: GEOMETRIDAE)

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Eupithecia indigata Hb. Ochreous Pug

RECENT publications by Hatcher and Winter (1990) on the feeding habits of *Eupithecia indigata* repeated the familiar story "Feeds at first on the inflorescence, later on the brown scales at the base of the needles; does not eat the needles." This prompts me to record my own findings. Publication of the booklet *An Identification Guide to the British Pugs* (1981) jogged my conscience with its statement (page 26) "said to prefer the young male inflorescences". An early reference to juniper and cypress as foodplants for larvae in captivity is found in Harper-Crewe (1862). Barrett (1904) states "when young preferring the inflorescence, afterwards feeding upon the leaves; also upon larch; and in confinement feeding readily upon juniper and cypress". Dietze (1916) said the larvae "do not eat the needles themselves, but instead the remains of male flowers, the needle sheaths and the fleshy shoot. . . . the fully grown larva bites one of the younger, still soft, needles and bores in as far as the base when it cuts into a new one". L.B. Prout in Seitz (1912) spoke of the larva of form *turfosata* Draudt on the blossom of *Pinus sylvestris* var. *turfosa*. Allan (1949) says "feeds at first on the inflorescence, later on the brown scales at the base of 'needles', does not eat the 'needles'." That is repeated by Fletcher in South (1961) where it is attributed to Cockayne. Authors of other works available to the British reader give only the names of host-plants of which cypress seems to derive directly or indirectly from Harper-Crewe (1862). When Bernard Skinner was preparing the text of his *Colour Identification Guide to Moths of the British Isles* (1984) I told him of my then recent experiences of rearing *indigata* larvae and he made use of that information and so stands alone in recording the larva to feed on *buds and young shoots* of Scots pine.

Most collectors beat out the *indigata* larva for it could scarcely be found by eye so closely does it conceal itself along the crowded bases of pine needles. Larvae are then usually enclosed in captivity with a sprig of pine foliage to last until pupation which, if the larva is taken near to full growth, produces a moth in the following May. Few of us seem to have examined that food closely enough to see exactly what was eaten, although patently it is not the needles.

During August 1981 I beat from Scots pine at Thetford some 60 larvae of *indigata* in instars from second to last. I kept the smaller ones separate and all the larger ones together. After a few days I examined the food and found no needles eaten; instead all buds had been hollowed out to their very base or back into the shoot, entrance being commonly via a tiny hole

to one side of the very end tip or bud. Larvae of all sizes were found with head and front segments within the hollowed bud or shoot but none were wholly within. Feeding on side twigs also began from the tips. Some twigs were so ravaged that they disintegrated when touched. There were browned, shrivelled remains of male flowers on many shoots of the enclosed food but I could see no signs of it having been eaten. Nor could I identify feeding on the needle scales or sheaths.

So I can enlarge on the observations of Dietze, but I cannot agree with him that large numbers of *indigata* larvae could become forest pests by distorting the shoots. At Thetford feeding appears to be confined to lateral buds on older growth and well away from the growing point of the young main stem. I worked the same area during the following autumn and failed to obtain larvae from the foliage of younger trees which, although producing some flowers and cones, offered only thickly resinous buds with copious resin flow. Larvae of *indigata* evidently shared the same preference for dense, short-needled foliage of older branches shown by *Thera.*

When rearing this species in quantity one must remember to change the food frequently because the fresh appearance of untouched needles can suggest food in plenty, when the requirements of *indigata* have been exhausted. One needs to be careful, too, when discarding the spent food, for larvae do spin up to pupate amongst debris and leaf scales at shoot nodes back along the twig, sometimes two or three spun closely together, but so skilfully concealed that they might easily be thrown away.

Eupithecia dodoneata Guen. Oak-tree Pug

Numerous authors have over the years quoted hawthorn as well as oak to be the principal food of *E. dodoneata.* But whereas oak flowers have been cited in addition to foliage, only the leaves of hawthorn were said to be eaten. Larvae in captivity had been more usually reared on oak and until recent years the majority of wild-taken larvae came from it.

When working in Lincolnshire I found the larva of *dodoneata* not uncommonly in hawthorn hedgerows and especially within the shaded tunnel of overgrown green lanes. But I failed to get pupae, and although heavily parasitised the losses were not it seemed entirely attributable to that cause. I first encountered *dodoneata* as I worked for *insigniata,* finding them in later instars as *insigniata* were coming to half growth. On moving to Norfolk I first found odd scattered larvae of *dodoneata* on hawthorn as an understory shrub beneath the pine plantations of Thetford, but subsequently found it in abundance in overgrown hedgerows nearer to Watton. By 1984 the species seemed to reach a peak of abundance and I began to appreciate that numbers of larvae were to be had only from bushes with a bountiful crop of haws. On testing this against bushes totally devoid of haws (why should this be?) I found it to hold good that haws needed to be present in abundance for *dodoneata* larvae to be in quantity.

When rearing larvae in captivity I noticed that whereas hawthorn leaves remained untouched, the fleshy sepals of the fruits were totally devoured. Larvae were in the penultimate and final instars thus enabling me to witness development to full growth. As only the calyces were eaten I later found it easier to strip away the foliage when renewing food so that larvae completed growth solely on the calyces. The haws themselves were not eaten.

Large numbers of pupae produced moths of fine size and I wondered how often in the past young larvae of *dodoneata* in captivity have perished not from parasites but from starvation!

In 1987 I made pairings between blackish moths from wild larvae of the previous year. Eggs were laid not on green leaves of hawthorn but on their withered shoots. Later as flower buds became available eggs were laid upon them, on their closed white petals and not upon leaves. On hatching the tiny larvae migrated from withered leaves to join those already on flower-buds, which they ravaged to tatters. Larvae fed up rapidly, completing their growth on flowers and no leaves were eaten.

Variation of these inbred larvae was beyond the recorded range, the later instars with a ground colour from plain unmarked yellow-green, dark-green, pink or ginger-brown to chocolate, with dorsal chevrons absent, but with a simple dorsal stripe. In others the dorsal chevrons could be intensely black. Identification of such specimens in the wild could be no more than a guess, especially as *E. abbreviata* displays similar variation.

Eupithecia abbreviata Steph. Brindled Pug

During the years I have been beating hawthorn in Norfolk for *dodoneata* I have been rearing amongst them moths of *E. abbreviata* at a proportion of about one to eight *dodoneata*. I thought at first *abbreviata* had come from mixed oak with hawthorn so I took care subsequently to work only hawthorn well away from nearest oak, and I was able to work stretches of hedge of pure thorn. I still obtained the ratio of one to eight and confirmed the relatively low population of *abbreviata* on hawthorn, compared with its plenty on oak foliage in neighbouring woods where *dodoneata* was hard to find.

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***Lymantria dispar* L. (Lep.: Lymantriidae), Gypsy Moth on the Isle of Wight**

On 28th August 1991 I took a male *dispar* at light in my garden at Godshill. The co-incidence of this record with others on the south coast strongly suggests that this specimen was an immigrant.

This is the first record for the Isle of Wight. A second new record is that of the tortricid *Epiphyas postvittana* Walk. a specimen of which was taken at m.v. light during an Isle of Wight Natural History Society meeting at Queen Victoria's Beach at Osborne on Friday 13th September 1991.— P.J. CRAMP, Stone Cross Cottage, Godshill, Isle of Wight, Hampshire.

***Troilus luridus* (Fabricius) (Hem.: Pentatomidae) in Cumbria**

On 23rd May 1991, I took one specimen of this bug by beating the low foliage of a mature oak tree in Baron Wood near Armathwaite, Cumbria (NY 5144). I have been unable to find any previously published records of *Troilus luridus* from Cumbria and this would appear to be a new record for the county and the first for Vice-county 70, Cumberland. It was recorded from the neighbouring county of Westmorland, Vice-county 69 by A.M. Massee in his county distribution of the British Heteroptera (1955 *Entomologist's mon. Mag.,* **91**: 7-27.)

I wish to thank Dr Peter Kirby for kindly providing me with information regarding the distribution of *T. luridus* in Britain. I also thank Mr Gareth Daglish and English Nature for permission to collect in Baron Wood.— R.W.J. READ, 43 Holly Terrace, Hensingham, Whitehaven, Cumbria CA28 8RF.

***Euplagia quadripunctaria* (Poda) in the Isle of Wight**

Shortly after noon on 11th September I was walking down a farm track from Tennyson Down to Freshwater when I came across a rather battered dead male *Euplagia quadripunctaria* (Poda) lying in the middle of the path. This is only the third record of this species for the Isle of Wight, the last one being taken by Sir Edward Poulton on 28th August 1935 (*Proc. I.W.N.H.S.* 1955: 497).

Other migrant species taken around that time were *Evergestis extimalis* (Scop.) on 3rd September, two *Mythimna albipuncta* (D. & S.), five *Agrotis ipsilon* Hufn. and *Autographa gamma* (L.) was in abundance.— S.A. KNILL-JONES, Roundstone, 2 School Green Road, Freshwater, I.W.

The Narrow-bordered Bee Hawk-moth, *Hemaris tityus* L. (Lep.: Sphingidae) on chalk downland in Wiltshire

In two recently published authoritative volumes on the lepidoptera of the British Isles and the two most likely to be used in initial researches, namely Heath, J. & Emmet, A.M. 1979, *The Moths and Butterflies of the British Isles and Ireland* Vol. 9, and Skinner, B. 1984, *Colour Identification Guide to Moths of the British Isles,* Viking, Harmondsworth, I note the relative statements regarding the habitats of *H. tityus* and how they compare with my and others' experience of this species in Wiltshire on chalk downland.

In Heath (loc. cit.) the relevant statement is "in southern England it is a woodland species", which is a fairly categorical statement. Skinner states "woodland, marshland and the wetter parts of moorland"; obviously in Wiltshire only woodland and perhaps doubtfully marshland would be relevant. As an additional reference, South, R (1961, *The Moths of the British Isles,* Warne, London), lists a similar range of habitats but carefully covers all eventualities by the use of the term "etc". The notable fact is that chalk downland is not mentioned.

Reference to de Worms, C.G.M. (1962, *Macrolepidoptera of Wiltshire,* Wiltshire Archaeological & Natural History Society, Devises) only states a modicum of downland records. In fact it may be worth noting at this point that in the *Macrolepidoptera of Wiltshire* just referred to there is very little reference to any species for any locality within the area of Wiltshire now occupied by the M.O.D. (roughly about 90 square miles). This suggests that the lepidoptera were under-recorded on a large portion of Wiltshire downland as no doubt were the other orders.

The army training area with which I am most familiar is the Imber Ranges (S.P.T.A. West), (the abbreviation for Salisbury Plain training area), and here *H. tityus* is known to be widely distributed albeit as far as I know at a very low density. Imber Ranges extend to almost 40 square miles and is almost exclusively chalk downland and the known localities of *H. tityus* are in extremely dry areas. Adults and larvae have been taken in very widely separated localities but in very small numbers. This is not surprising, as unlike woodland rides or clearings which tend to confine movement, on the open downland an adult can travel to all points of the compass.

Finding larvae is similarly down to luck. Where does one look when areas large and small of Scabious species *Succisa* and *Knautia* extend in all directions? In addition the perennial problem of access can rule out many days or infrequently weeks of the year when one is able to visit a chosen locality even with the necessary access permit. *H. tityus* has also been noted on the other M.O.D. training areas lying to the east which are also chalk downland. On the Larkhill/Westdown ranges (S.P.T.A. Central) Mr Stephen Palmer informs me that single adults were noted in 1981, 1986 and 1987 and concerning the later record he informed me that the locality was of good quality chalk grassland with nearby extensive but patchy areas of gorse with no vegetation within a half mile over three feet in height. Mr

Edward Gange netted a single specimen in May 1987 in the Danger Zone of Bulford Ranges (S.P.T.A. East). As far as these records go they may suggest that the species is commoner in the west than in the east but with the limited data available this is somewhat speculative. But in any case access problems, as mentioned above, to any of these training areas are almost certain to result in any species including *H. tityus* being under recorded. Nevertheless it is perhaps relevant to note that the apparent increase in records from the early 1980s is most likely the result of better observational coverage of these areas since the formation of the respective area conservation groups. I think therefore that it is reasonable to state that in Wiltshire *H. tityus* is a downland species.

I would like to thank the following gentlemen for supplying me with the relevant data: Mr Stephen Palmer from Dinton in Wiltshire, Entomological recorder for the Larkhill/Westdown Ranges (S.P.T.A. Central) and Mr Edward Gange from Whaddon, Salisbury, Entomological recorder for Bulford Ranges (S.P.T.A. East).— M.H. SMITH, 42 Bellefield Crescent, Trowbridge, Wiltshire.

***Xylena vetusta* Hb., the Red Sword-grass (Lep.: Noctuidae) in Surrey.**

While filling the car with petrol at the Esso service station located on the Hog's Back, Surrey (between Guildford and Farnham) on 24th March 1991, I noted a specimen of *X. vetusta* at rest inside a broken light cover within the station canopy. The moth, a male, was eventually dislodged with the aid of a broom from a bemused attendant.

The previous records from Surrey are sporadic: those in the current century being Egham (1932 and 1934), Ottershaw (1952), Leigh and Ranmore (1956), Reigate (1963), Givons Grove (1965) and Pyrford (1976). My thanks to Graham Collins for the information on previous captures.— M.F. HALSEY, 2 Henley Close, Rainham, Kent ME8 0ER.

Bedstraw Hawk in Norfolk

I failed to record the occurrence of *Hyles gallii* larvae last summer. On 29th August 1990 I was telephoned by a resident of Toft Wood, a suburb of East Dereham, who told me he had fat caterpillars with big white spots and red tails, all feeding on his outdoor *Fuschia*.

On visiting him soon after I confirmed the twelve larvae all to be last instar *H. gallii* and evidently from the same batch of eggs. They had stripped bare large areas of an enormous *Fuschia magellanica* bush, which grew in a heap of builder's sand in the garden of my informant's house, and the situation was dry, sheltered and exceedingly hot in the high temperatures of that August.

I brought away eight larvae, of which I pickled two, the others being brought to maturity on vine and *Fuschia* foliage; each day I exposed them to the hot sun from which they made no move to escape, and there were six

fat pupae to keep in an unheated indoor room through the winter. Rafe Eley had a yearning to try to pair moths of this species so I passed the pupae to him in May, and he reared in his out building five males and one female during June 1991. But no pairing was achieved despite his keeping moths alive for some weeks.

On 7th July 1991 a female *gallii* came to my m.v. garden trap. It had been in good condition but evidently had ruined itself in the trap. It exuded meconium and was apparently unpaired, living for a further ten days. This moth could well be thought to have been a locally bred insect. — G.M. HAGGETT, Meadows End, Northacre, Caston, Norfolk.

Unusual emergence times

There have been a number of notes in the *Record* recently concerning the observation of various species in the wild at times which would be considered outside of the normal period. I would like to add a small number of my own such observations over the last three years, being:

Nola cucullatella: Portland, 21.9.89;

Noctua janthina: Portland, 17.10.90;

Idaea aversata (3), *Eligmodonta ziczac, Schrankia taenialis* and *Cabera exanthemata*: Hamstreet, Kent, 2.10.91.

In each of the above cases, the specimens noted were in a fresh condition.— M.F. HALSEY, 2 Henley Close, Rainham, Kent ME8 0ER.

White-letter Hairstreak, *Strymonidia w-album*, in north Warwickshire

To my knowledge, *Strymonidia w-album* has not been recorded in north Warwickshire since the Victoria County History listed one site as "Atherstone". However, a 1985 record of one sighting near Hartshill was passed on to me late in 1990. What was thought to be a single White-letter Hairstreak was glimpsed at another site, Ladywalk Nature Reserve, in July 1990 by the Hon. Head Warden and on 13th July 1991, I was able to confirm its presence there. Thereafter, up to 20th August, numerous sightings were made. Meanwhile, a visit to Hartshill Hayes Country Park on 1st August brought a sighting through binoculars of one perched on the leaf of a small elm at about 10.00 a.m. on a very hot, sunny morning. A further visit the following day revealed a specimen in very good condition nectaring on Creeping Thistle (*Cirsium arvense*). A rather worn individual was also seen nectaring on Creeping Thistle on my return to the same site on 13th August. Although the species still occurs at a few sites in the south of the county, it seems that no sighting in the Borough (north of Coventry) had ever been recorded this century up to 1985. Imagine my excitement then, when I observed through binoculars a single specimen flying around and settling on leaves at the top of a small elm on 3rd August — only two miles from where I live. On further investigation, the site (the former and now concealed junction of two minor roads) was found to have much elm and probably a thriving colony of White-letter Hairstreaks has existed there

for a long time. This was the third site confirmed in as many weeks of one season.

If anyone has records of this or any other notable species of butterfly in north Warwickshire, I would welcome details as I am now concluding the second year of a survey of the butterflies of the Borough. B.R. MITCHELL, 127 Watling Street, Grendon, Atherstone, Warwickshire CV9 2PH.

Observation of a migration at West High Down, The Needles, Isle of Wight

On 31st August 1991, Dean Swennson and I were birdwatching on West High Down, the most westerly point on the Isle of Wight, and a well known site for migrant birds. The day was hot and sunny with a force 2-3 easterly wind blowing. We realised that a large passage of Silver-Y moths (*Autographa gamma*) was in progress. We walked to the tip of the headland and could pick out many individuals through binoculars coming across the sea. They arrived at an estimated height of 250 ft, i.e. 50 ft above the clifftop we were watching from. When the moths reached the land they dropped rapidly and flew eastwards along the Down at a height of no more than 2 ft, feeding on thistles (*Carduus/Cirsium* sp.) as they went. The passage was confined mostly to the top of the Down, with few on the north face (south face is steep cliffs).

By counting all the moths passing between a loft span in one minute, we were able to estimate the numbers passing over the Down at an average of 40,000 every hour. We were present on the Down between 08.00 - 11.30 hours, and the movement was well under way when we arrived and was just as strong when we left three and a half hours later. In that period about 140,000 *Autographa gamma* passed over the Down. Also involved in the movement were 23 Painted Ladies (*Vanessa cardui*), 35 Red Admirals (*Vanessa atalanta*), 20 Large Whites (*Pieris brassicae*) and thousands of the Hoverfly *Episyrphus balteatus*.— S. COLENUTT, Green Edge, Chale Green, Isle of Wight.

Rothamsted farmland light trap network: interesting Lepidoptera records for October to December 1990.

The main interest over this period lies with the extended flight periods of certain species. *Noctua pronuba* Linnaeus, *Hydraecia micacea* Esper and *Agrotis segetum* Denis & Schiffermüller were caught to mid-November. In 1990, *N. probuba* was first recorded on the estate in late May and *H. micacea* in mid-July. These records indicate flight periods of five and a half and four months respectively. Both are univoltine. Skinner (*Colour identitication Guide to Moths of the British Isles*. Viking, 1984) states that the usual flight period of *N. pronuba* is from July to September and that of *H. micacea* from August to October. Therefore there was a considerable extension of the flight period, both early and late, for these species. At the present time it is unclear whether this is due to protracted emergence or a period of adult aestivation. As *N. pronuba, A. segetum* and *H. micacea* are

agricultural pests (Carter, D., *Pest Lepidotera of Europe.* Junk, 1984) these records of extended flight period in an unusually warm year may be of particular importance.

Other late captures were recorded for *Noctua comes* Hübner (24.x.), *Ectropis bistortata* Goeze (22.x.) and *Idaea seriata* Schrank (17.x.). Small numbers of the migrant *Udea ferrugalis* Hübner, *Nomophila noctuella* Denis & Schiffermüller, *Agrotis ipsilon* Hufnagel and *Autographa gamma* Linnaeus were caught to mid-November. No unusual captures were made in December.— ADRIAN M. RILEY and MARTIN C. TOWNSEND, AFRC Farmland Ecology Project, Dept. Entomology and Nematology, Rothamsted Exp. Stn., Harpenden, Herts AL5 2JQ.

Butterflies in the Woolwich (S.E. London) district, 1991.

As a sequel to my note on the previous season here (*Ent. Rec.* **103**: 77-8) there are some points of interest with respect to the one just concluded. After an indifferent spring and a sunless, chilly, and over-dry June, it was perhaps not astonishing that the first brood of *P. icarus* (Common Blue) should have failed to materialise at all on Woolwich Common (compare last year); and right up to mid-August none had been seen so I was fast giving up hope for the second brood. However, on the 18th a few *icarus* were at last noted, and thereafter it was in its former plenty at least in its most favoured areas. This seems to suggest a high degree of resilience, but in any case such a retarded second emergence is surely remarkable.

A most welcome feature of the present season was an unprecedented upturn in the local fortunes of *L. phlaeas* (Small Copper) — a total of nine or ten specimens being noted, all on the common except one on Blackheath. This might indeed look like an extremely modest tally; but when I say that the average incidence here has for long been about one sighting in two years (with odd exceptions) it will be clear why I look upon 1991 as definitely a *phlaeas* year! It was a special pleasure to see a fresh example or two on 13th October, at a time when all other Lycaenids are over. I was struck by the very marked liking of this butterfly for the flowers of ragwort, *Senecio jacobaea,* noticed also on certain past occasions. On 9th August there were three together on a smallish plant, constantly probing the flowers — a male and two females. Three times one of the latter was seen to walk down the stem (a distance of some 20") and almost vanish into the grass at the base, emerging and ascending to the flowers again after a few moments; all the time closely followed by the male (who incidentally showed no interest in the other female). What she may have been deriving from these peregrinations I entirely failed to make out.

In the same area of the common, on the same day, there occurred a solitary *P. tithonus* (Gatekeeper) — a fine female — just as last year I had met with another singleton but in a different part of the district. Some time was spent looking for more, both then and on later visits, but (surprisingly) in vain. Also in the same area, a long narrow strip of partly shaded ground, *A. cardamines* (Orange-tip) is struggling to establish itself — the sole

colony known to me anywhere around — but its fate is precarious, with cool dull weather during its flight period and a June mowing to contend with. The first 1991 individual met with was a male detected at rest on a dull day on a flowering head of *Cardaria draba* where it was beautifully camouflaged. This and/or *Armoracia* could well be the foodplant at this site, there being so little *Alliaria*.

The other outstanding feature of the year in my district was a veritable population-explosion in the autumn brood of *A. urticae* (Small Tortoiseshell) after a long period of very lean years. Its first manifestation was a vast multitude of the larvae over large parts of the nettlebed on Woolwich Common mentioned in my 1990 note. On 18th August they were mostly about full-grown, showing in their teeming, heaving myriads all the variations from black to comparatively pale with still paler stripes or lines. In stark contrast, barely a single imago had been seen up to then, though earlier there must surely have been quite a concourse of them ovipositing on those nettles; elsewhere, suitable stands of nettle, casually inspected, bore no signs of larval nests. The first butterflies appeared at the beginning of September here and there in gardens etc, on buddleia, increasing for a time, but rather soon going over (last seen in my garden 1.x.). A fine sight was afforded by dozens of *urticae* feeding on clumps of lucerne in flower not far from the nettlebed (8.ix), but the bulk of the emerging throng must have dispersed rapidly. I have heard that other districts around London experienced a similar outbreak.

For other Vanessids likewise a marked (though not spectacular) improvement on last year, with one *C. cardui* (Painted Lady), a very few *I. io* (Peacock), and one *V. atalanta* (Red Admiral), all on buddleia on various dates. A rise on these excessively low numbers was furnished by *P. c-album* (Comma), with several noted in and around Charlton (three or four of them on my small buddleia in autumn). Incidentally, can any reader suggest (a) why the highly distinctive and conspicuous larva of the last-named is not more often noticed, now that the species is relatively common and known to feed mostly on nettle; (b) why *I. io* seems nowadays to retire into hibernation so early — long before its relatives; and (c) why michaelmas daisies, formerly so attractive to these butterflies, no longer appear so (again I am not alone in noticing this)?

T. lineola (Essex Skipper) was, if anything, in even greater profusion on the common than last year; in complete contrast, the Burnet moths, *Z. filipendulae,* were both very scarce (like last year — I have known them to be in the utmost abundance there). Large quantities of *Tyria jacobaeae* (Cinnabar) larvae on the much-increased ragwort, wherever it grew on the common, were another welcome sight which I trust will bear fruit next June, though I fear ichneumons will have taken a heavy toll. It seems an inevitable penalty of being an aposematic larva, that one necessarily advertises oneself to parasites!

I am of course happy to accept Patrick Roper's correction (antea. 210) regarding the abundance of *C. argiolus* (Holly Blue) in Greenwich Park in 1991. I can only affirm that on my three or four visits there in each of the last two years during the butterfly's season it was not to be seen though I had often enough noticed it about the hollies in the Flower Garden in earlier years. On the days in question it seems *argiolus* had pressing business elsewhere. Finally I take this opportunity to correct a misprint in my note (**103**: 207) in answer to one of Mr Roper's: in line 4, "reason" (anticipated from a line farther down) should read "power".— A.A. ALLEN, 49 Montcalm Road, Charlton, London SE7 8QG.

***Udea fulvalis* Hübn. in Christchurch**

On 20.vii.1991, I took a strange Pyralid in my garden trap. After conferring with Tony Pickles, it was identified as *Udea fulvalis*. A second arrived on 15.viii.1991 and two more on 19.viii.1991. Goater (*British Pyralid Moths*, 1986, Harley Books, Colchester) mentions that this species was established for a short time in the 1930s near here in the Bournemouth district. The concentration of four examples in so small an area over a period of a month suggests that this species is breeding locally, rather than being immigrants. Tony Pickles kindly set three specimens for me. The fourth has laid a small number of ova. So, after 60 years, *fulvalis* is back.— E.H. WILD, 7 Abbots Close, Highcliff, Christchurch, Dorset BH23 5BH.

***Idaea vulpinaria atrosignaria* Lempke (Least Carpet) and other interesting species in Warwickshire 1991**

I. vulpinaria, new to Warwickshire, was recorded on 1st August at Hillmorton, Rugby by Dr David Porter in his garden m.v. trap. On the following night a second specimen was taken in my garden m.v. trap at Charlecote. Another notable species was *Euproctis chrysorrhoea* Linn. at Shottery, Stratford upon Avon on 26th July by Ray Bliss — the first in the County for almost a century, also only the second Warwickshire recording of *Acronicta aceris* Linn. on 31st July at Charlecote.— DAVID C.G. BROWN, Jacksons Drive, Charlecote, Near Warwick.

***Idaea vulpinaria* (H.-S.) — new to the Isle of Wight list**

Between 28th July and 26th August 1991 a total of 12 examples of *Idaea vulpinaria* (H.-S.) were taken on the Isle of Wight. Four were taken by Mr S. Colenutt at Chale Green; three by Mr D. Wooldridge at Niton, two by Mr B. Warne at Binstead and I took three at Freshwater. There was a population explosion of this moth along the Thames estuary in 1991 and the south-easterly winds may have caused it to migrate westwards. It was also taken in Hampshire at Southsea. This species is new both to Hampshire and the Isle of Wight.— S.A. KNILL-JONES, Roundstone, 2 School Green Road, Freshwater, Isle of Wight.

CORRECTION

In the review of *A natural history of the butterflies and moths of Shropshire* (*Ent. Rec.* **103**: 332), the price was incorrectly given as £19.95. We are pleased to note that the correct price is £10.95 — excellent value for money.

CONTENTS AND SPECIAL INDEX

The contents and special index for volume 103 (1991) will be distributed with the March/April issue.

The Moths and Butterflies of Great Britain and Ireland Vol 7, Part 2 Lasiocampidae — Thyatiridae with Life History Chart of the British Lepidoptera. Edited by A.M. Emmet & J. Heath, Harley Books, Colchester. 1991. £55.00.

This volume deals with the Lasiocampidae, Saturniidae, Endromidae, Drepanidae and Thyatiridae. 29 species of moth are described, their distribution mapped, and their life histories given. The volume follows the format established successfully with the previous volumes. There is an introduction to each family, with figures of wing venation and an easy to use key to the imagines. Each species is described in detail, with notes on similar species (if any) and the life history given, with comments on its distribution in Britain (and worldwide). A distribution map accompanies each species.

The text on *Lasiocampia quercus* goes a long way to clear confusion over the distribution of the subspecies *callunae,* if indeed there are two subspecies. In this case, the lengthy description of the imago is justified but in most cases such detailed descriptions are largely unnecessary and I imagine that most readers will skip this section and turn to the illustrations. The space saved with briefer descriptions could have been given to sections on habitats and foodplants, which are rather too general (e.g. I have found that the larvae of *Euthrix potatoria* often feed in suitable habitats on *Molinia caerulea,* not mentioned as a foodplant here). Key differences between similar species are given and no less than nine distinguishing characters are given to separate *Malacosoma neustria* and *Malacosoma castrensis* (of which numbers 1, 2 and 7 are particularly useful).

Unfortunately there are no illustrations of the genitalia, which is a significant omission for such a major work. For these, one has to return to Pierce's volumes on Noctuidae (for the Thyatiridae) and to Pierce & Beirne's volume on the genitalia of the British Rhopalocera and the Larger Moths; the most recent of these volumes was published in 1942 and an updated work is needed. The distribution maps do not appear to be up-to-date and it appears that not all the county recorders have been asked to

contribute. Despite these small criticisms, the text and maps represent an important and easily readable resource.

There are four colour plates illustrating the 29 species, with up to six illustrations for each species. Males and females are illustrated where there are differences in colour or size. The excellent paintings by Richard Lewington follow the standard set by Volume 7a, although the colours are slightly too pale, particularly for the Drepanidae.

The first part of the book is a chapter on the classification of lepidoptera by M.J. Scoble which summarises recent changes. Although there will, no doubt, be more changes before the series is complete, I found the chapter interesting and informative. Chapter two (by Tweedie & Emmet) discusses moth and butterfly resting postures, illustrated by Tweedie's excellent photographs. How much easier to identify a moth from a photograph of natural posture than from a set specimen! This is the first time I have seen in print that the best distinguishing feature between *Selenia tetralunaria* and *Selenia dentaria* at the moth trap is their different resting posture. As public opinion moves towards a more conservationist attitude to entomology and there is more interest in the ecology of living creatures than in dead cabinet specimens, these photographs and notes will provide a useful starting point for beginners.

By far the largest part of the book is taken up by a chart giving the life history of all the British lepidoptera month by month, with columns on status, distribution, habitats, flight times and foodplants, with a column for remarks. All species are included, even *Heliodines roesella* (not seen in Britain for about 170 years) and Albin's Hampstead Eye (one recorded some time before 1717). A most useful feature is that each species is given the number allocated to it by Bradley & Fletcher in their indexed list of *British Butterflies & Moths* (1986). Red Data Book categories are given where applicable, as well as larval and pupal habits. A most useful idea is the laminated portable card provided which gives a key to the symbols used.

In his introduction, Emmet states that the chart gives generalised information. At first sight, my impression was that the notes were too general to be useful, particularly regarding distribution. Mainland Britain is divided into eight areas (including one for the Channel Isles) and there are four areas for Ireland. These areas are too large; Area A covers south-east England and includes 23 vice-counties. The data for *Aglossa caprealis* states that it is to be found in areas A, B, C, and E, but I know of only two records in the last 20 years and these were from areas A and B. I have found the most useful column to be the habitat section. Used properly, this section should allow us to build up a picture of moth communities, so that we could establish which moths might occur in which habitat, e.g. moths numbered 3, 4, 53, 60, 66, 103, 104, etc occur in mountain habitats. This habitat classification could be the first step towards the creation of an overall view of moth communities, similar to the National Vegetation

Classification system for plants. Emmet has 29 habitat subdivisions. Some are based on physical characteristics (e.g. cliff and undercliff) whilst others are based on the dominant plant type (e.g. woodland). Woodland is subdivided into woods and woodland margins/hedgerows but could be usefully subdivided into broadleaved (ancient semi-natural woods, secondary plantation and carr) and coniferous plantation, with a separate section for woodland rides. Heaths are differentiated from Breckland, but could be usefully subdivided into lowland heath and wet heath (with moorland heath under acid grassland).

Grassland might be usefully subdivided into improved grassland, permanent pasture, hay meadows, arable fields and acid grassland. Nevertheless, despite my initial reservations, I have found the life history chart to be a most useful quick reference guide. It is certainly the most comprehensive and synoptic overview of the British Lepidoptera ever published, and must have been a Herculean task to compile. This is an important addition ot his series and overall good value at £55.00.

Adrian Spalding

IN MEMORIAM
G.H. Youden (1903 - 1991)

George Youden passed away on 19th September 1991, aged 87, he having been born on 8th December 1903. A solicitor by profession, he practised for many years in the family firm at his home town of Dover.

George was a cheerful soul in whose company it was always a pleasure to be. He and I first met in 1937, at a meeting of the entomological section of the Folkestone Natural History Society. There we used to exhibit our more notable captures along with those exhibited by the late A.M. Morley, Baron de Worms, B.C.S. Warren and other members of the society.

As a member of the South London Entomological and Natural History Society* George sometimes attended field meetings, and in one at Hamstreet on 3rd June 1957, he appears in a group photograph (vide *Proc. S. Lond. ent. nat. Hist. Soc.,* **1957**: plate III, facing p.63). There is also a portrait of him in *The butterflies and moths of Kent,* vol. 3, plate XIV, fig. 6.

George was not a prolific writer, but among his more interesting published records are the following: (1) *Drepana curvatula* Bork. (Dusky Hook-tip), at light at Dover, 13.8.1960. A species new to Britain (cf. *Ent. Rec.,* **74**: 44, plate 1). (2). *Hadena compta* Fab., at Dover in 1948, the first confirmed occurrence of this species in Britain for a great many years (cf. *Entomologist,* **83**: 121-122, plate 4). (3) *Crombrugghia laetus* Zell., a female of this small plume netted at Hothfield, Kent, 10.9.61, and new to Britain (cf. *Ent. Rec.,* **75**: 11-13). (4) *Pammene luedersiana* Sorhagen, based on the evidence of a specimen captured by D.G. Marsh, at Aviemore, Inverness-shire, 23.5.1964. New to Britain (cf. *Ent. Rec.* **86**: 197). Mention must also be made of his local list: *The butterflies and moths*

*Now the British Entomological and Natural History Society.

found in the Dover and Deal district of Kent (1949), of which he was co-author with the late B. Embry.

His collection of British lepidoptera (including the microlepidoptera) in 14 Hill cabinets, is donated to the British Museum (Natural History); but his butterflies in three 12-drawer cabinets go to his grandson.

Our sympathy goes out to his widow to whom we offer our deepest condolences. J.M. Chalmers-Hunt

OBITUARY

Charles Gordon Campbell Dickson, 1907 - 1991

Charles Dickson died on 21st October 1991 at the age of 83. He was a foremost African lepidopterist, an indefatigable and dedicated field worker, as is evidenced by the fact that he personally discovered no fewer than 38 new species, all of them from the mountains and hills of the Western Cape. It was his keen scrutiny of the behaviour and distribution of the localised and diverse colonies of closely-related species from this area that convinced him that previous workers had completely under-estimated the diversity of certain Southern African species groups. He fully appreciated the fact that structural similarities between species of the same genus do not preclude speciation; this he proved conclusively through patient study in the field and through life-history research. He accordingly set about revising certain genera, and described an amazing 92 new species and subspecies during his lifetime — approximately one-tenth of the total number of species (inclusive of subspecies) in the subregion. Many were described and illustrated in colour in the *Entomologist's Record*. His work on some of the highly complex genera — such as for example the *Aloeides* (done in this case in association with G.E. Tite of The Hope Museum, Oxford University) — today forms the basis of all modern research on these genera. His output was, in fact, exceeded by no one in the history of Southern African lepidoptery, other than that of his one-time mentor, the great pioneer taxonomist, Roland Trimen.

He patiently studied the life-histories of a great number of South African butterflies, and published, on his own or in conjunction with Gowan Clark, a great number of life-history descriptions. This work culminated in the publication, in 1971, of a book entitled *Life Histories of the South African Lycaenid Butterflies*. This monumental work — unique among Southern African butterfly publications — was written and compiled by himself, making use of Gowan Clark's artistry and notes, and supplementing these with his own. Clark, who had passed away some years previously, was acknowledged as the senior author of the work — a gesture of typical modesty on the part of Charles Dickson. The value of this work was immediately apparent, and gained for him an honorary M.Sc. from the University of Cape Town.

Charles Dickson *ca* 1987. Cape Town, South Africa.

He was keenly interested in the symbiosis between many South African butterflies and ants, and, together with his good friend Andre Claassens, pioneered local research into this fascinating aspect of butterfly life.

In addition to the abovementioned book, he was an author in conjunction with Claassens, of the *Butterflies of the Table Mountain Range,* which dealt exclusively with the butterfly species of the Cape Peninsula, and which was published in 1980. It was inevitable that, when K.M. Pennington died in 1974, leaving a skeleteon manuscript dealing comprehensively with all the butterflies of the Southern African subregion, he should be approached and asked to turn this manuscript into a book. This he did with characteristic zeal, with the result that *Pennington's Butterflies of southern Africa* was published in 1976, with himself as its editor. Today this remains the definitive work on the butterflies of this subregion.

Since the publication of this work, Mr Dickson worked continually in preparation for the second edition. He made a steadfast effort to ensure that the second edition would be published. Sadly, he has not lived to experience the joy of publication. However, the second edition should be

printed in 1992 and will be the final tribute to a truly remarkable lepidopterist.

Notwithstanding his professional approach to Lepidoptery, Charles Dickson, himself an amateur, never lost sight of the value of the amateur to Lepidoptery in general, and produced a number of publications which were aimed at stimulating amateur collectors. Notable amongst these was *What Butterfly is That?,* a handguide published in 1972. Furthermore, because of his unassuming manner and his prompt correspondence, he became personally known to the vast majority of Southern African Lepidopterists. He was truly a giant in his field; his loss has left an unbridgable void.

Charles Wykeham and Ernest Pringle

Charles Dickson — List of Publications

1940. Notes on the early stages of *Phasis felthami* Trim., a Lycaenid butterfly from the Cape Peninsula, and a list of some recently determined foodplants of some other Southern Africa butterflies. *Ann. S. Afr. Mus.* **32**: 545-554.

1943. The life-history of *Phasis chrysaor* (Trim.) (Lepidoptera: Lycaenidae). *J. ent. Soc. sth. Afr.* **6**: 37-47.

1944. The life-history of *Cupido thespis* L. (Lepidoptera: Lycaenidae). *Ibid.***7**: 20-29.

1944-1953. Recently-observed foodplants of some Cape Lepidopterous larvae. *Ibid.* **7**: 96-99; 1945, *idem* (2nd Series). *ibid.* **8**: 150-153; 1947, *idem* (3rd Series), *ibid.* **10**: 126-130. 1953, *idem* (4th Series), *ibid* **16**: 73-76.

1945. The life-history of *Phasis palmus* Cram. (Lepidoptera: Lycaenidae). *Ibid.* **8**: 99-110.

1947. The life-history of *Phasis thysbe* L. var. *nigricans* Aur. (Lepidoptera: Lycaenidae). *Ibid.* **9**: 178-192.

1948. The life-history of *Phasis pyroeis* Trim. (Lepidoptera: Lycaenidae). *Ibid.* **11**: 50-62.

1949. The life-history of *Charaxes pelias* Cram. (Lepidoptera: Nymphalidae). *Ibid.* **12**: 109-117.

1952. The life-history of *Phasis zeuxo zeuxo* (L.) (Lepidoptera: Lycaenidae). *Trans. R. Soc. S. Afr.* **32**: 447-456.

1965. Recently observed foodplants of some South African Lepidopterous larvae. *J.ent Soc. sth. Afr.* **28**: 11-20.

1965. Observations on some Natal Butterflies. *Durban Mus. Novit.* **8**: 19-23.

1972. *What Butterfly is That?* Purnell & Sons. Cape Town.

1974. The wealth of butterfly life at the Cape *U.C.T.* **12**: 9-12.

1976. *Pennington's Butterflies of Southern Africa.* A.D. Donker, Johannesburg.

1976. Six new Southern African Butterflies. *Entomologist's Rec. J. Var.* **88**: 273-280, 307-314.

1977. A new species of the *Phasis thero* (L.) group (Lepidoptera: Lycaenidae) from the Roggeveld Escarpment. *Entomologist's Rec. J. Var.* **89**: 317.

1978. Note on an apparently new species of *Colotis* Hübner (Lepidoptera: Pieridae) from South West africa. *Entomologist's Rec. J. Var.* **90**: 185.

1978. Two new *Poecilmitis* Butler (Lepidoptera: Lycaenidae) from the Hantam's Berg, Western Cape Province. *Entomologist's Rec. J. Var.* **90**: 293.

1979 - 1980. Six further new butterflies from Southern Africa. *Entomologist's Rec. J. Var.* **91**: 300.

1982. Three new Lycaenidae Butterflies from the South Western Cape Province. *Entomologist's Rec. J. Var.* **94**: 222.

1982. Four new South African Butterflies. *Entomologist's Rec. J. Var.* **93**: 219; **94:** 32.

1985. A new Lepidochrysops Hedicke (Lep.: Lycaenidae) from the South Western Cape Province. *Entomologist's Rec. J. Var.* **97**: 1.

Dickson, C.G.C. and Henning, G.A., 1980. A new species of *Poecilmitis* Butler (Lepidoptera: Lycaenidae) from the Western Cape Province. *Entomologist's Rec. J. Var.* **92**: 294.

— , and Henning, W.H., 1980. A new race of *Argyrocupha malagrida* (Wallingren) (Lepidoptera: Lycaenidae) from the Cape Province. *Entomologist's Rec. J. Var.* **92**: 297.

— , and McMaster, J.C., 1967. Some observations of *Poecilmitis turneri* Riley. (Lepidoptera: Lycaenidae), with a description of a new race. *Ibid.* **79**: 209-211.

— , and Schofield, T.W., 1958. Observations on the migration of *Belenois aurota* (Lepidoptera: Pieridae). *J. ent. Soc. sth. Afr.* **21**: 427-428.

— , and Stephen, R.D., 1971. A new race of *Myrina silenus* (F.) (Lepidoptera: Lycaenidae) from the North Western Cape. *Entomologist's Rec. J. Var.* **83**: 255-259.

— , 1975. An additional new race of *Argyrocupha malagrida* (Wallengren) (Lepidoptera: Lycaenidae). *Ibid.* **87**: 129-132.

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Contents — *continued*

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Contents

Notes and Observations

Continued on inside back cover

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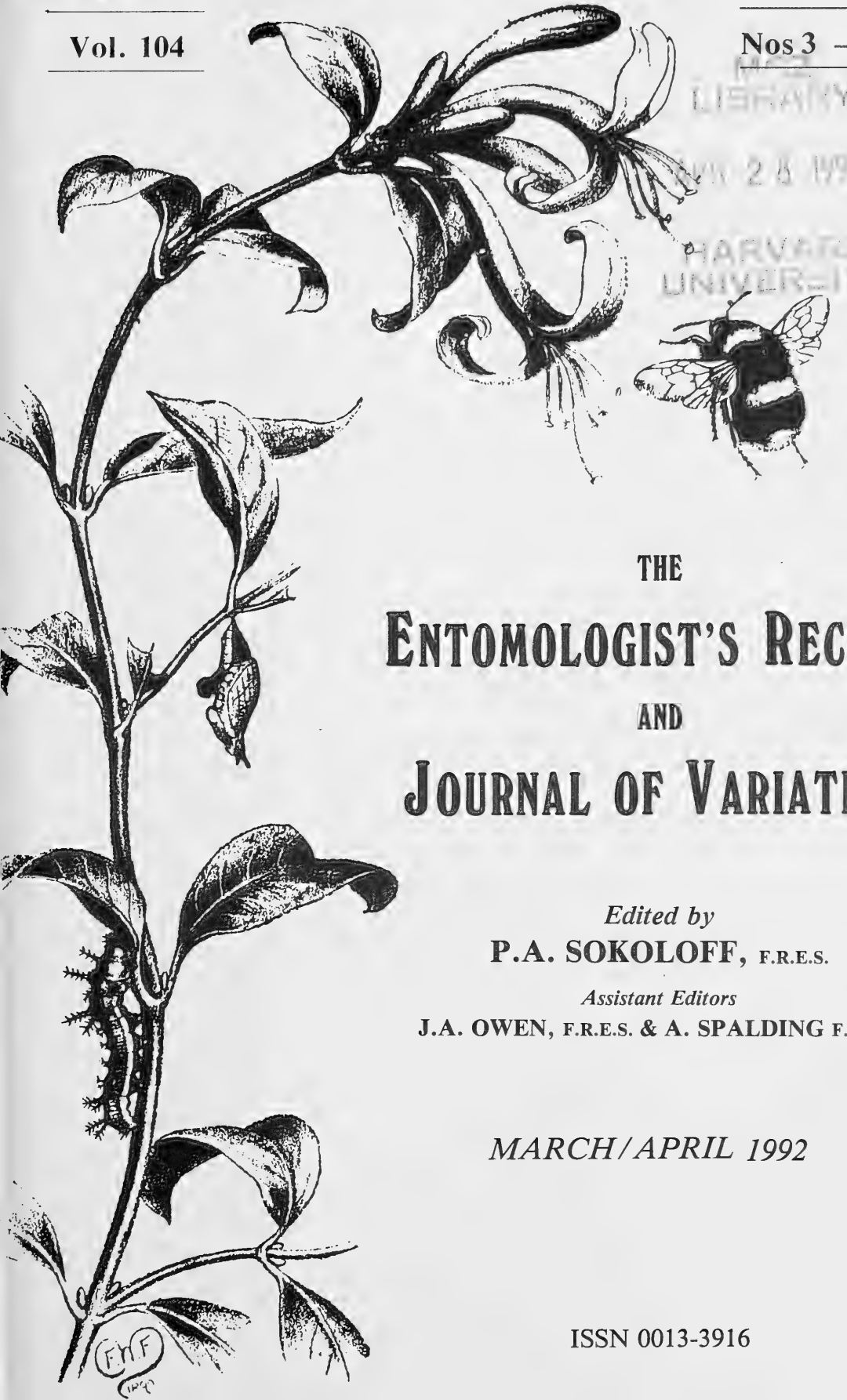

THE ENTOMOLOGIST'S RECORD AND JOURNAL OF VARIATION

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?A QUERCUS F. *CALLUNAE* PALMER (LEP.: CAMPIDAE) IN CO. CLARE, IRELAND

B.K. WEST, B.ED.

36 Briar Road, Dartford, Kent DA5 2HN.

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LASIOCAMPA QUERCUS F. *CALLUNAE* PALMER (LEP.: LASIOCAMPIDAE) IN CO. CLARE, IRELAND

B.K. WEST, B.ED.

36 Briar Road, Dartford, Kent DA5 2HN.

"ABUNDANT throughout Ireland" states E.S. Baynes (1964), "and only as f. *callunae*", and he indicates that certain old records for typical *quercus* need confirmation. In western Ireland over the past three decades the moth could certainly not be described as abundant, or probably even common. Bradley and Pelham-Clinton (1967) summarising the results of a number of visits to the Burren of Co. Clare note the finding of a few larvae, unfortunately not mentioning the foodplants, and give no mention of the moth. I have visited western Ireland, from Co. Cork to Co. Donegal, on numerous occasions from May to September, but not once have I encountered the larvae despite much searching, although my m.v. light has attracted female moths, about half-a-dozen in all, at two different periods, the end of June and early August, in the Burren, but not elsewhere.

Palmer (1847) bases her separation of *callunae* mainly upon differences of the life cycle between typical *quercus* and *callunae*:—

(a) *callunae* — emergence of moth from May to July, larva hibernating and completing growth the following summer, to rest as pupa during the second winter, i.e. a two-year cycle.

(b) *quercus* — emergence of moth in late July and August, larva hibernating but completing growth quickly the following spring to produce imago the same year, i.e. a one-year cycle.

Callunae is associated with the heather moors of the north and west of the British Isles, *quercus* with hedgerows, sea cliffs and open woodland where the larva feeds upon a variety of plants such as hawthorn, bramble and broom. A number of distinguishing features of the two moths have been formulated. These relate to the coarser and darker appearance of *callunae,* the shape of the median fascia, the number of pectinations on the antennae of the males, the shape and size of the forewing discal spot and the extent of its development on the underside.

I have reared both forms in captivity indoors, the larvae being kept at first in plastic containers and then in Watkins and Doncaster cylinders, and being supplied with bramble, heather being added in the later stages to facilitate cocoon making. *Quercus* from S. Devon and Kent have been bred with minimal casualties from both eggs and pre-hibernation larvae. Invariably the larvae fed quickly to pupate between late December and early March, the moths emerging in June, sometimes in late May. I have bred *callunae* from Scotland only from larvae collected from June to September, always with many casualties not due to parasites, but through failure to construct a cocoon, or some other cause when full grown. The insects have passed the winter in the pupal state, moths emerging in late

April, May and June. Thus none has emerged before hibernation, and none has spent two winters as a pupa. Compared with their feral counterparts *quercus* imagines emerge much earlier, the larval period is contracted, hibernation is by-passed and the life cycle shortened by a few weeks. The *callunae* life cycle is essentially unaffected.

The small number of female moths of this species that has attended my m.v. light in the Burren, would have been classified as *callunae*. A female caught at Ballyvaughan on 6.viii.1974 laid very few eggs; the seven larvae produced resulted in six moths the following May and June. Reared on bramble the larvae pupated early in the new year, the life cycle corresponding to that of typical *quercus* from southern England in captivity, i.e. a shortened one-year cycle. I reared a slightly smaller brood from a female obtained at Ballyvaughan in early August 1976; this brood behaved in similar fashion.

On 30.vi.1987 I obtained a specimen at Rinnamona in the heart of the Burren, and it laid some thirty eggs. The larvae showed no inclination to hibernate but fed continuously to pupate from early December to February, and one moth, a male, emerged on 28th June. However, the following summer, that of 1989, saw the emergence of the remainder between mid-June and late July and it was found that over 30% of the brood had died as full fed larvae by failing to pupate, or as pupae, but there was no evidence of construction of substandard cocoons. Apart from the precocious male, the brood displayed a curious two-year life cycle which omitted larval hibernation but possessed a protracted pupal stage, entering this state some nine months early.

It would appear that two distinct strains of *callunae* were involved, one flying in August, perhaps having a one-year life cycle, and the other flying in June and early July and having at least a two-year life cycle. Tutt (1902) gives several examples indicating that in western Ireland the life cycle may be either of one or of two years; thus a larva obtained in Co. Galway 5.vi.1892 pupated that year and the moth emerged 18.vi.1893, whereas another taken 3.vi.1984 also pupated the same year to emerge as a moth a few weeks later.

Kettlewell (1973) notes that *callunae* in Scotland have not only a two-year life cycle, but that the moths appear mainly in odd years. My series of *callunae* from the Scottish Highlands, moths reared from larvae obtained the previous summer, largely bears this out although I have three specimens which emerged in 1964 from larvae obtained at Newtonmore in August 1963. In parts of Ireland the moths will appear every year if a one-year life cycle strain of the insect is present.

Kettlewell further states "All ssp. *callunae,* however, feed on heather, *Calluna vulgaris* usually on open moorland, and also on *Vaccinium* growing in such ecologies", and "*L. quercus* ssp. *quercus* feeds on a wide range of deciduous plants." The Burren is composed mainly of outcrops of Carboniferous Limestone, most of it without heather. The Ballyvaughan

moths were attracted to m.v. light in a garden some distance from any heather; the Rinnamona moths were taken amidst hazel scrub with numerous clearings, also with no heather in the vicinity. Therefore it would appear that there are two strains of *callunae,* with different life cycles, whose larvae are not associated with heather and living in environments very different from heather moorland. I can find no information regarding the larval foodplants of this insect in the Burren.

Huggins (1956) comments upon the anomalous life style of *callunae* in western Ireland, stating that in the Aran Islands, Co. Kerry and Co. Cork, the moth has a one-year life cycle, but in the Burren some complete their transformation in twelve months while others take two years, adding that he cannot say whether there are two races side by side, or if both life cycles take place in the same brood. However, no mention is made of larval foodplants in the Burren, but he does state that in Co. Kerry where *callunae* is found commonly from sea level to at least 1,000 ft it eats "whatever of its food is commonest, from bramble to bog myrtle and finally heather". I suspect that this may well be the situation in the Burren. Nevertheless despite assiduously searching roadside brambles and hawthorn, as well as bog myrtle and heather which occur in certain well defined but restricted areas, not once have I come across this larva, nor have I encountered one elsewhere in Ireland. I believe *callunae* is a species which has become scarcer in Ireland over the past decade or more.

L. quercus in both its British subspecies varies considerably. Barrett (1896) describes males of the typical form as being of a red brown colour, *callunae* a rich dark chocolate hue, and mentions that experiments have indicated that temperature, and not length of pupal state, is a regulatory factor. All the specimens I possess of this species were bred, *quercus* from egg, pre- or post-hibernation larvae, and *callunae* from the Highlands of Scotland from post-hibernation larvae. Comparison of the moths reveals some interesting features.

(a) All Scottish males are a deep chocolate brown contrasting with *quercus* males — much lighter and red brown. Irish males although chocolate brown have a reddish tinge, and so appear intermediate, although close in colour to the Scottish specimens.

(b) The Scottish and Irish Rinnamona females appear similar; deeper coloured than *quercus* from Kent and south Devon, but the Ballyvaughan females are much paler, indeed paler than many of my Dungeness specimens.

(c) The outward turn of the median fascia at the inner margin of the forewing is most pronounced in the Scottish specimens; the Ballyvaughan series shows little such curvature and in this respect resembles *quercus.*

(d) There is a significant difference in the character of the white spot, especially regarding the females. In this sex of *quercus* it is oval or reniform in shape, with a neat, narrow black border; the long axis is right angles to the costa.

Callunae females possess a diamond shaped spot with a rougher and more diffuse black border; the long axis if present is parallel with the costa. My series, including both subspecies, contains but one exception. In *quercus* males the spot appears bright and contrasting, but is small and usually round, oval, reniform or crescentic inside a neat black border; usually a longer axis is present, and if so it is perpendicular to the costa. My Scottish males have a relatively larger spot but without a black border, and in shape it varies, being somewhat square in most examples, having no long axis. In contrast the Irish males possess a somewhat diamond shaped white spot parallel with the costa, and also not enclosed in a black frame.

(e) The presence or absence of this spot on the underside of the wings of the male is perhaps the most well known diagnostic feature in identifying the two subspecies. I possess one exception to this rule, a Rinnamona male which has not the slightest vestige of the mark beneath.

Many questions are left unanswered. Thus does the heather clad Millstone Grit country of Co. Clare support two such strains of *callunae*? What of the counties to the north — Galway, Mayo, Sligo and Donegal — a one or two-year cycle, or both? What of the rest of Ireland, especially those parts not covered by heather moors? Upon what plants do the larvae feed? Are Irish males of *callunae* different in colour from their Scottish counterparts? The females of the one-year strain that I possess are much paler than those whose life cycle covered two years — is this merely coincidental? Perhaps some of these questions have been answered, and appear in the literature I have not consulted, for it is strange that so little appears to be known about so large and conspicuous an insect which as late as 1964 was described as being abundant everywhere in Ireland.

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***Phlyctaenia perlucidalis* Hübner (Lep.: Pyraustinae) recorded in Northamptonshire and Buckinghamshire**

I have previously taken this moth near Woodwalton Fen, an area where I would expect to find this species.

On 26th July 1991 one came to light in my garden at Willen, and also this year in Old Pastures Wood, near Yardley Hastings, Northants two more specimens were recorded, one on 29th July and another on 3rd August.

Perhaps these are two new county records, and if so, does this seem to suggest that this moth is becoming more widespread?— G.E. HIGGS, The Cottage, Willen, Milton Keynes, Bucks MK15 9AD.

A REMARKABLE INCREASE IN NUMBER OF *ACROCERCOPS BRONGNIARDELLA* (FABRICIUS) (LEPIDOPTERA: GRACILLARIIDAE) IN 1991

A.M. EMMET

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"A. BRONGNIARDELLA. England to Cumberland, E. Ireland, not uncommon" (Meyrick, 1928). Until 1991 few people living in the south-east of England would have agreed with this statement. My wife and I, who have probably done more searching for leaf-mines than anyone else, with oak always a top priority, had recorded *A. brongniardella* only from single localities in Surrey, Middlesex, Bedfordshire and south Lincolnshire. Yet the mine is the most conspicuous of all the lepidopterous mines on oak; only a very common hymenopteron, sometimes mistaken for *A. brongniardella* by the inexperienced, is as easy to see. *A. brongniardella* remained locally common in the south-west of England but had virtually disappeared from the central and south-eastern counties from which it had been recorded in the 19th century.

It has always been a rarity in Essex and there were only two records, the first when it was taken in Hainault Forest on 27th September, 1846 by G. Bedell (Stainton, 1848) and the other undated from Danbury by the Rev. G.H. Raynor (Harwood, 1903); "probably extinct in the county" (Emmet, 1981). There had, therefore, been no record from Essex for at least 88 years when Brian Goodey took an overwintered adult in the woods south of Colchester on 21st May 1991. This was also a new vice-county record for north Essex (VC19). Then between mid-July and early August three freshly emerged specimens came to my trap in Saffron Walden. On 15th September Brian Goodey and I visited High Wood, Duddenhoe End in the extreme north-west of the county. The wood has been coniferised but there are amenity belts of hardwood including oaks bordering the broad rides; here we readily found vacated mines.

This prompted me to assess the extent of its foothold in Essex and we searched for it on our travels and even made one or two expeditions expressly to look for it. We visited 36 of the 57 10 x 10km squares in the county and found it in 33 of them, often on the first tree searched. We also established new vice-county records in east Suffolk (VC25), west Suffolk (VC26) and Huntingdonshire (VC31), as well as noting its presence in Hertfordshire (VC20), east Norfolk (VC27), west Norfolk (VC28) and Cambridgeshire (VC29); it had already been recorded in these counties but for the most part not since the 19th century. In Norfolk we found it at once in the south but neither we nor members of the Norfolk Wildlife Trust could locate it in the Norwich district. This may indicate the limit of its spread northwards.

Nearly all the mines that we found were on more or less isolated trees

growing at the edges of fields. We failed to record it in large oak-woods such as those at Danbury, in Epping Forest or at Chalkney Wood, a tract of ancient woodland. Dr David Corke has made an interesting suggestion to explain its increase in numbers and apparent preference for arable land. The moth overwinters as an adult with thatch as its most favoured hiding place. The recent decline in stubble burning has meant that bales of straw are stacked beside the fields on many farms and these offer a safe haven for hibernation as stacks of straw after threshing did in the past. It is unlikely that this is the sole cause for the increase in the population of *A. brongniardella* but it may well be an important contributory factor.

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Is *Syncopacma albipalpella* (Herrich-Schäffer) (Lep.: Gelechiidae) extinct in the British Isles?

I am trying to ascertain the current status of *Syncopacma albipalpella* (Herrich-Schäffer) for *The moths and butterflies of Great Britain and Ireland,* **4.**

Ditchling Common, Sussex was once a noted locality (all of Ford's specimens in the British Museum (Natural History) were taken there) but little remains of the foodplant, *Genista anglica,* and on 26th May 1990 Dr John Langmaid and I failed to find larvae there.

The last published records that I can trace are from Hampshire and are of "larvae" at Hook Common on 23rd May 1965 and a "few larvae" at Silchester in 1973 (B. Goater, 1974, *The butterflies and moths of Hampshire and the Isle of Wight*: 106).

On 26th May 1991 Brian Baker, Dr John Langmaid, myself and others visited Silchester Common. Thanks entirely to Brian's fieldwork beforehand we found the foodplant in two places. Although cases of *Coleophora genistae* Stainton were fairly common, there was no sign of *albipalpella* larvae.

I returned to the area on 14th June 1991 but was no more successful. Later that day I visited Hook Common but found only half-a-dozen plants and no larvae. It seems that the species no longer occurs at either locality.

I would be pleased to hear from anyone who has recent records. *Genista anglica* is a plant that is declining nationally, which combined with the apparent lack of recent records may well mean that the moth is extinct in this country, as opposed to merely overlooked.— R.J. HECKFORD, 67 Newnham Road, Plympton, Plymouth PL7 4AW.

SCARCE TISSUE MOTH, *RHEUMAPTERA CERVINALIS* (LEP.: GEOMETRIDAE), AND A SEARCH FOR THE BARBERRY CARPET MOTH, *PAREULYPE BERBERATA* (LEP.: GEOMETRIDAE) IN LINCOLNSHIRE

P. WARING

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ON 23rd May, 1988, while searching for the Barberry Carpet moth, *Pareulype berberata,* at Ancaster Valley Nature Reserve, south Lincolnshire, I discovered a large colony of *Rheumaptera cervinalis.* A hedgerow of mature wild Barberry, *Berberis vulgaris,* runs the length of the western side of the reserve and there are other large bushes scattered in front of a belt of woodland that runs along the eastern side of the valley. The latter are more heavily shaded by trees but the western hedgerow enjoys full sun and was in full bloom on this visit. The hedge is approximately 3 - 4m tall, about 3m wide and consists mainly of *B. vulgaris* for over 500m of its length.

As dusk came on and the scent of yellow *Berberis* blossom became intense the first *R. cervinalis* were seen flitting briskly along the hedge, carefully and closely following the contours of its surface. Several were netted to check identification before release and during the night eleven were captured by three Robinson and two Heath light traps that were set up by *Berberis* bushes at various places on the reserve.

According to Johnson (1990) this is the first record of *R. cervinalis* in Lincolnshire since the nineteenth century when it was recorded as "N Gainsborough, Lincoln 1840-50" and at "Market Rasen" (Duddington and Johnson 1983), However a loose insert in my copy of the latter notes that the late R.E.M. Pilcher recorded *R. cervinalis* further east in the county at Boston and that it was common at Tytton Hall, Wyberton in 1967. Pilcher speculates that the species may have been breeding on *Mahonia* growing in gardens.

In all probability *R. cervinalis* occurs more widely in the county. It is likely to be breeding on ornamental species of *Berberis,* such as *B. ottawensis* and *B. thunbergii,* which have been planted in many gardens. In general in England *R. cervinalis* is more widely distributed and frequent than light trap records suggest. In searching for *P. berberata* at three localities in Suffolk, one in Norfolk and one in Gloucestershire, I have beaten larvae of *R. cervinalis* at all, even though the county lists contain relatively few recent records of the moth. I have also found it elsewhere when I have looked specifically for it, in gardens in Oxford and Peterborough. I have found *R. cervinalis* larvae feeding on *B. vulgaris, B. ottawensis, B. wilsoniae* and *B. thunbergii,* including the purple varieties of these plants.

As for *P. berberata* in Lincolnshre, Duddington and Johnson (1983) report only two records, neither of which are recent — East Ferry District

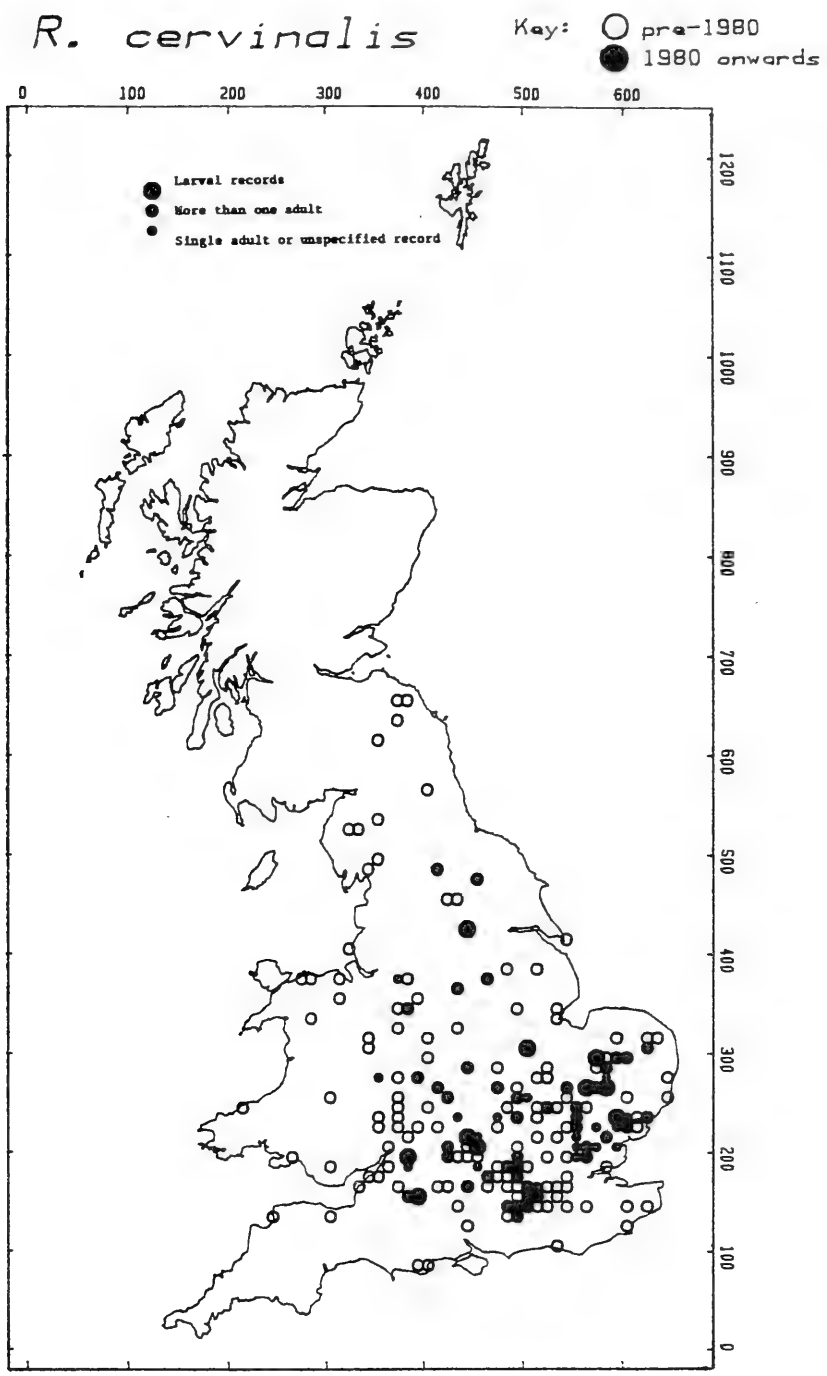
(nineteenth century record, date unspecified) and North Somercotes, 22nd May 1918 (Rev S. Proudfoot). My searches at Ancaster Valley have so far failed to find any evidence of the species. These searches have included beating for larvae on 9th September 1988 and light trapping for adults with three Robinson traps and two Heath traps, all situated by large *Berberis* bushes and operated all night on the night of 23rd/24th May 1988. This was a moonless cloudy calm and muggy night with a few showers and a minimum temperature of 8°C and 36 species of adult macro-moths were seen. In addition Malcolm Pool operated a single Heath trap from June 1988 onwards and throughout 1989 including the following nights, many of which cover the flight periods of *P. berberata*.

1988: June 2, 3. July 1, 9, 15, 22, 28, 31. August 2, 5, 8, 11, 13, 15, 19, 23, 29, September 3, 10, 17, 24.

1989: May 13, 20, 27. June 9, 16, 23. July 1, 15. August 2, 6, 17, 21, 28. September 9.

The dates refer to the evenings of the nights in question. In each case Malcolm was on site from before dusk until it was properly dark, netting flying moths, and arrived in the morning at dawn just before the photocell switched the trap off. 155 species of macro-moth have been recorded for the site as a result of the light-trapping, of which Johnson (1990) reports the species that are of greatest interest in a Lincolnshire context. 138 species are additions to the L.N.U. records for the site.

During the afternoon of 9th September 1988 the western *Berberis* hedge was beaten over a Bignell beating tray in 22 places on the reserve side (which gets less sun in the afternoon). A total of 18 macrolepidopterous larvae were obtained including Dot moth, *Melanchra persicariae* (9), Grey Pug, *Eupithecia subfuscata* (6), Mottled Pug, *Eupithecia exiguata* (2), and Angle Shades, *Phlogophora meticulosa* (1). The *Berberis* by the trees on the opposite side of the valley was beaten in eleven places and produced the following larvae: *P. meticulosa* (4), Scalloped Hazel, *Odontopera bidentata* (2), Light Emerald, *Campaea margaritata* (2), *E. exiguata* (2) and the Peppered moth, *Biston betularia* (1). All of these species have been recorded from a variety of other woody plants but are mentioned here because there are comparatively few records in the literature for larvae from *Berberis*. I have also found larvae of *M. persicariae, B. betularia, E. exiguata* and *O. bidentata* on *Berberis* at other sites, along with other polyphagous species such as the Vapourer, *Orgyia antiqua,* Mottled Beauty, *Alcis repandata,* and Goldtail, *Euproctis similis*. However I cannot confirm that these larvae are able to complete the whole of their development on *Berberis*. All were part grown and may have commenced development on nearby trees and shrubs such as hawthorn, *Crataegus monogyna* (see Ward 1988). There was no sign of *P. berberata* larvae at Ancaster Valley even though larvae were seen the previous day at the Suffolk colony and three days later in Gloucestershire.



The distribution of the Scarce Tissue moth *Rheumaptera cervinalis* in Britain from information supplied to the National Recording Scheme for the Rarer British Macro-moths, using data kindly supplied by the Biological Records Centre, Monks Wood, the Rothamsted Insect Survey and the recorders who have contributed to the Scheme.

Acknowledgements

I thank Malcolm Pool, lately the warden of Ancaster Valley, for his invaluable help with the survey work, Barrie Wilkinson, Reserves Officer for the Lincolnshire and South Humberside Trust for Nature Conservation, for giving permission to work on this Trust reserve and Rex Johnson for examining the archives of the Lincolnshire Naturalists Union at my request.

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Rothamsted farmland light trap network: interesting Lepidoptera records, January to June 1991

Although all the Rothamsted Estate traps operated during January and February, no unusual captures were made. Individuals of *Apocheima hispidaria* Denis & Schiffermüller were caught at separate traps on 4., 5., and 7.iii., suggesting that this species is still widespread on the Estate although it has not been recorded since 1948. Single *Acasis viretata* Hübner and *Eupithecia dodoneata* Guenée were caught on 8. and 11.iv. respectively. These records constitute early emergence for both species. They usually fly during May and June.

Specimens of *Odontosia carmelita* Esper were recorded on 6. and 7.v. at two woodland sites. This species has not been recorded previously on the Rothamsted Estate despite a trap operating for nearly 30 years within 40m of one of the sites of capture. A single *Xanthorhoe fluctuata* Linnaeus f. *thules* Prout was caught on 21.v. This dark form is usually only recorded from northern Britain and, so far as we are aware, has not previously been noted from Hertfordshire.

Autographa gamma Linnaeus was caught on 17.v. (one individual) and between 6. and 29.vi. (six). In contrast to the often faded early summer immigrant *A. gamma,* all were in very fresh condition. No other known migrant species were recorded at this time. Five of the seven individuals were caught in a trap situated adjacent to a field of winter-sown broad beans. The proximity of this known host crop, the lack of other migrant species in the catches, the condition of the specimens and the discovery of suspected overwintering *A. gamma* at Rothamsted and in Bedfordshire in 1990 (Riley, A.M. & Riley, D.K., *Entomologist's Rec. J. Var.* **102**: 299-300) suggests winter survival at this site for 1990/91.— ADRIAN M. RILEY and MARTIN C. TOWNSEND, AFRC Farmland Ecology Project, Dept. Entomology and Nematology, Rothamsted Expt. Stn, Harpenden, Herts AL5 2JQ.

CORTICARIA ABIETORUM MOTSCHULSKY (COL.: LATHRIDIIDAE) NEW TO BRITAIN

R.M. LYSZKOWSKI[1], J.A. OWEN[2] and S. TAYLOR [3]

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ON A VISIT to the R.S.P.B. Loch Garten Reserve on 22.vi.86, R.M.L. and J.A.O. beat the lower branches of a small group of Norway spruce trees (*Picea abies* (L.) Karsten), hoping to find some examples of *Cryptophagus subdepressus* Gyllenhal which had occurred there on past occasions. None of this species appeared but R.M.L. obtained a *Corticaria* which did not fit the description of any of the recognised British members of this genus.

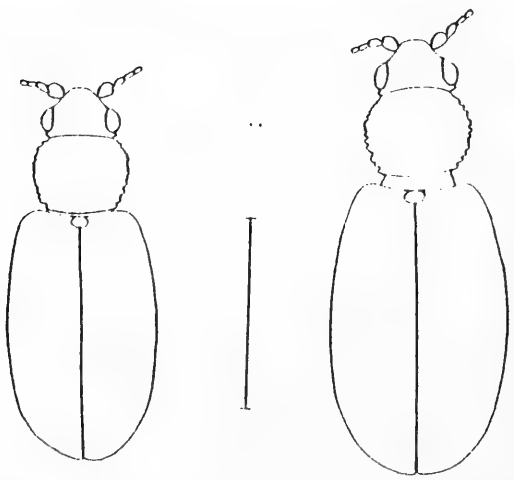
Two days later, unaware of this capture, J.A.O. collected about 100 fallen cones of Norway spruce from another site on the Reserve (NH9817) about 400m distance from the first site. Some of the cones were relatively fresh but many were mouldy. The cones were taken south in a large plastic bag. On 1.vii.86, the cones were examined by tapping them, open-end down, on a flat surface and another *Corticaria* specimen was obtained which similarly did not appear to be any of the known British species. It was sent to Mr Colin Johnson, Manchester, who very promptly identified it as *C. abietorum* Motschulsky (previously known as *C. abietum* Motschulsky), a species not previously known from Britain. Comparison with the description of the specimen obtained by R.M.L. indicated that the latter was also this species.

Re-examination of the cones at intervals over the next few months provided eight additional specimens, the last of which was obtained on 10.iii.87. To try and find other localities for this species S.T. and J.A.O. gathered fallen spruce cones at different sites whenever the opportunity arose, keeping them for several weeks in Winkler extractors or in nylon bags. By these means, further examples of the beetle were obtained from another site on the Loch Garten Reserve (NH9917 — 5.x.86) and from sites near Nairn (NH 9358 — 19.xi.86), near Loch Moy (NH7734 — 6.xii.86), near Grantown on Spey (NJ0327 — 13.xii.86) and Knockandhu (NJ2122 — 19.xii.87). Cones from many other sites, however, viz Glen Livet (NJ2331 — 18.i.87), Strathdearn Tomatin (NH7320 — 25.i.87), Loch Rannoch (NN6257 — 1.v.87), near Loch an Eilein (NH8909 — 2.v.87), near Dunkeld (NO04 — 2.i.88), Blair Atholl (NN8565 — 21.i.88), Ballinluig (NN9755 — 21.i.88), and Castlemilk (NY17 — 20.i.88) did not produce any examples. A single failure to detect the beetle at a site may not, however, be significant for collections of cones from the original site at Loch Garten on 4.v.87, on 5.xi.87 and on 20.vii.91 failed to produce any specimens though cones collected on 23.vii.88 produced several over the next few months.

C. abietorum resembles *C. linearis* (Paykull) more closely than any of the other British members of the genus and runs down to this species if the key given by Joy (1932) is used. It is slightly larger on average, lighter in colour and duller. Measurements of length gave a mean value of 2.0 (1.8 -2.2) mm for 13 examples of *abietorum* against a mean value of 1.85 (1.8 -2.0) mm for four examples of *linearis*. The elytra in *abietorum* are to a variable extent wider behind the middle than in front whereas, in *linearis,* the elytra are more uniformly, though feebly, rounded (fig. 1). In addition, the head and pronotum in *abietorum* are wider in relation to the base of the elytra. In both species the sides of the pronotum are weakly dentate and the pronotum has a well marked, circular depression near the base. The species (as *abietum*) is included in the key given by von Peez (1967) who provides figures of the aedeaegi of both species.

All but one of our specimens came from fallen Norway spruce cones but the precise relation of the beetle to the cones remains to be determined. Many of the cones were mouldy when collected and the mould could have provided food for the beetles or for their larvae. Several of the specimens found in containers which had housed cones for two or three months were teneral, indicating that part, at least, of the life cycle had occurred (in captivity) in the cones. Other examples could simply have been using the cones as a place wherein to hide or hibernate. During the studies, 23 other beetle species were obtained from spruce cones gathered from the ground. Some of these, such as *Atomaria ornata* Heer (= *contaminata* Erichson) and *Aridius nodifer* (Westwood) are recognised mould feeders but others such as *Aphidecta obliterata* (Linnaeus), *Otiorhynchus desertus* Rosenhauer and *Ceutorhyncus floralis* (Paykull) were doubtless casual visitors.

Another matter to be resolved is whether the species can exist in Britain



Corticaria linearis (left) and *C. abietorum* (right). For clarity, antennal segments 5 onwards have been omitted. Scale bar = 1mm.

in association with Scots pine (*Pinus sylvestris* L.) rather than Norway spruce. We have examined at Loch Garten numbers of fallen Scots pine cones and a great deal of mouldy pine-needle debris on the forest floor, especially that formed below fallen or cut pine branches without finding *C. abietorum* though some of the other mould-eating beetles found in Norway spruce cones such as *Atomaria ornata* and *Aridius nodifer* were present. Norway spruce arrived in Britain (at least in post-glacial terms) as an introduction around the year 1500. If the beetle requires Norway spruce, it could not have been an inhabitant of Britain in historic times earlier than this. Most British beetles which are predominantly associated with spruce such as *Dryocoetes autographus* (Ratzeburg) or *Cryphalus abietis* (Ratzeburg) are occasionally recorded from Scots pine. *Hylastes cunicularius* Erichson, however, appears to be restricted to spruce.

Outside Britain, *C. abietorum* occurs throughout Scandinavia and in much of Central Europe (Silfverberg, 1979; Lucht, 1987).

We thank Mr Colin Johnson for providing the identity of our beetles and Mr Alan Mitchell for information on the introduction of Norway spruce to Britain.

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Meotica anglica Benick (Col.: Staphylinidae) in Surrey

I found an example of this beetle in a used mole's nest sited on the bank of the River Wey near Pyrford, Surrey on 12.ii.89. The nest was situated on a sandy but grassed area about 10m from the edge of the river. Dr J. Muona, Oulu has kindly confirmed the beetle's identity.

This species was formerly known to British authors as *M. pallens* but Benick (cited Muona, 1991, *Dtsch. ent. Z.* **38**: 225-246) showed that it was not the *pallens* of Retenbacher but an undescribed species to which he gave the name *anglica*. Most of the British records are from riverside sites in northern England or southern Scotland but, in August 1988, I took a single specimen on a sandy area on the bank of the River Severn in Wales (1988, *Br. J. Ent. nat. Hist.* **2**:52).

The Surrey record would appear to be the first for the species from south-east England. The presence in a mole's nest is unusual for a member of this genus and may be a coincidence. It may be relevant, however, that an example of the true *M. pallens* (Retenbacher) (= *M. lohsei* Benick) was

found also in a mole's nest (Owen, 1987 *Proc. Trans. Ent. nat. Hist. Soc.* **20**: 83). Muona (*loc. cit.*) mentions the association of *M. pallens* with burrows of small mammals.— J.A. OWEN, 8 Kingsdown Road, Epsom, Surrey KT17 3PU.

Foodplants of the Holly Blue butterfly ***Celastrina argiolus* L. (Lep.: Lycaenidae) — some continental records**

The present abundance of this butterfly in recent years has aroused considerable interest as to its foodplants in both this and other entomological journals. There have been several hundred Holly Blue butterflies flying in my Cambridge garden in 1991 and several have been observed laying on a *Pyracantha* bush.

Noticing the article by I. Kruys (*British J. Ent. nat. Hist.* **4**: 77-82) where he states that in Ostergotland, Sweden, where neither holly nor ivy occur, *C. argiolus* uses bilbery, buckthorn and heather as foodplants, his observation prompted me to refer to some other continental authors where quite a wide range of foodplants are given. As long ago as 1821 M. Godart (*Histoire naturelle des lepidoptères*) quoted only alder-buckthorn (*Rhamnus frangula*). In *Nordens Dagsommerfugle* by T.W.Langer, the usual *Ilex* and *Hedera* are given and also *Rubus, Genista, Calluna, Erica, Vaccinium* and *Pyrex* are quoted, although the species of these particular plant genera are not given. Spuler (*Die Schmetterlinge Europas*) quotes *Rhamnus frangula, Genista, Dorycnium, Calluna, Ilex aquifolium, Hedera helix, Pirus, Cydonia, Erica* and *Robinia pseudocacia.* Moving to more southerly climes, Manley and Allcard (*A field guide to the butterflies and burnets of Spain*) give *Hedera helix, Ilex aquifolium, Spartium, Astragalus, Erica, Pyrus* and species of *Rhamnus.* A search through other continental authors would doubtless confirm and even add to this list of foodplants.

The fact that the Holly Blue is well recorded abroad for feeding on foodplants other than ivy or holly does not of course necessarily mean that it does so regularly here. It is, I think, quite well-known that our British sub-species of the Swallowtail (*Papilio machaon brittanicus*) is confined to marshy areas and does not, in the wild, utilise carrots or fennel like the continental sub-species *P. m. gorganus,* although it readily lays and feeds on these and other Umbelliferae when in captivity. Nor does *Pieris brassicae* in the Canary Islands touch the cabbages, upon which it is a pest here, but only occurs on nasturtium there. So it is perfectly possible for a given species to utilise different foodplants in different regions of its range. The potential is there for a change, which can well be brought about by drastic changes in the normally used food supply, over-crowding, or even perhaps a climatic change which alters the growth cycle of the foodplant so that it is not at the correct "stage" at the time the butterflies emerge from their chrysalids.— BRIAN O.C. GARDINER, 2 Highfield Avenue, Cambridge CB4 2AL.

REMINISCENCES OF AN AMATEUR LEPIDOPTERIST, 1920 - 90

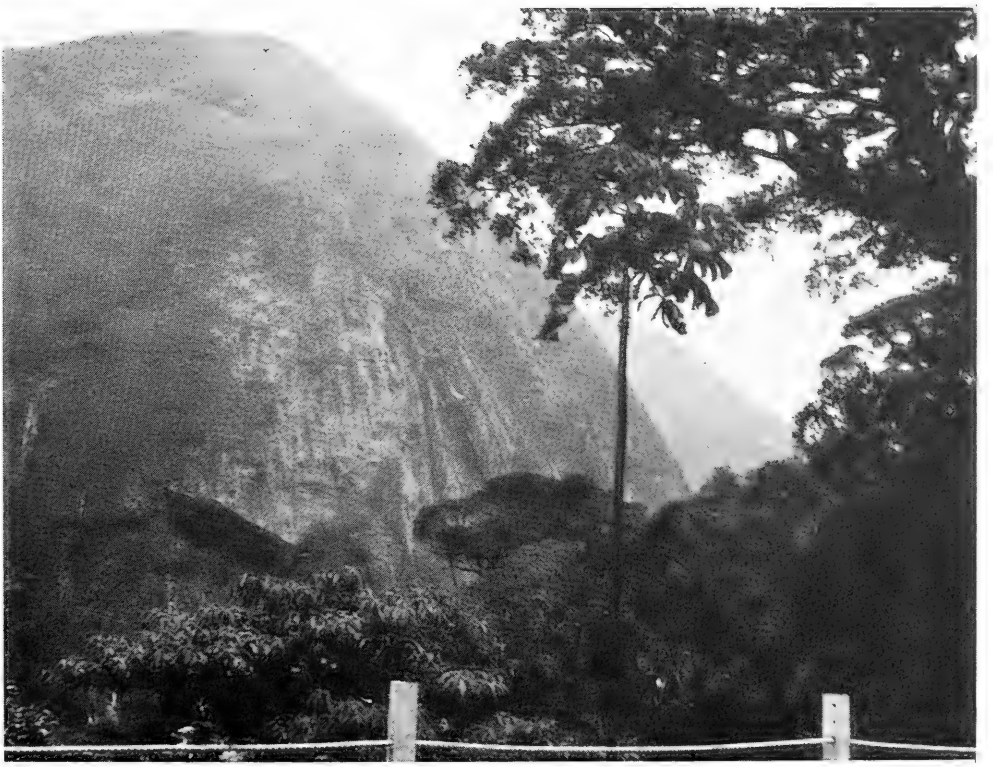
E.P. WILTSHIRE

Wychwood, High Road, Cookham Rise, Berks SL6 9JF.

(Continued from p. 38)

Eighteen months in Brazil

My wife sailed on a Blue Star liner with my luggage in October 1957, while I flew a month ahead of her, stopping at Paris, Lisbon and Dakar before crossing the Atlantic by night. We passed over Recife while it was still dark, so my first glimpse of Brazil as the sun rose was of an endless green carpet of jungle. a curdled canopy studded by occasional silvery white pustules; these were the *Cecropia* trees, or Imbauba, to use their vernacular name in Brazil. They might well be called ant-trees, for after reaching a height between one and thirty metres all have hollow trunks inhabited by ants of the genus *Azteca*. The full-grown tree has a straight single trunk to two-thirds of its maximum height thereafter branching in five or six concentric branches, some of which branch again similarly, i.e. all from one point. This gives them a parasol-like or palmate aspect. The young foliage consists of tender, lyrate leaves, but the mature parasol leaves are very large, oval and furry.



The *Cepropia* (Imbauba) tree.

Gunther's book, *A Naturalist in Brazil* reveals that there has been a controversy on whether the ants protect the trees which provides them with nourishment, and I started making notes on the relations of *Azteca* and other insects when I found that these trees, which had so struck me on my first sight of the Brazilian forest, were easy to find around Rio de Janeiro, and did not lack insects, other than ants, feeding on their foliage.

One can drive out of the residential suburbs of Rio straight up into wooded mountains within half an hour; it is partly secondary forest which has regressed over abandoned coffee plantations, as the coffee industry shifted southwards from the capital. Even the secondary forest is stunningly rich in tree-species and insect-species, not to mention snakes and birds. Only the once common jaguar has disappeared.

Bernard Kettlewell visited us on behalf of *Life Magazine* on the occasion of the Darwin anniversary, 1958.

After a period in South Africa, Bernard had returned to England to lecture on genetics in the Oxford University Department of Zoology. He soon attracted attention with his observations and filmed experiments designed to test current theories about industrial melanism (Kettlewell, 1955). For these he had, of course, selected a single species of our lepidoptera, the Peppered Moth (*Biston betularia* (L.)) and tabulated, as part of the evidence, the recapture of released moths. Before arriving in Brazil he wrote asking me what species in the vicinity might be suitable for similar observations, evidently cherishing the idea of conducting similar experiments. Certainly he arrived well equipped with traps, lights and cine-cameras. Indeed because of this equipment, the Brazilian customs presented him with his first obstacle. However, he was persistent and succeeded in due course in importing it.

After a short period in our flat he installed himself in a suitably vacant wing of the Paineiras Hotel, at an altitude of about 500m, in the cloud forest behind the well-known floodlit statue of the Redeemer on Mt Corcovado dominating the north of the city of Rio de Janeiro.

He engaged a Caribbean taxi-driver called Evans whose large vehicle provided mobility anywhere on the mountainous roads around Rio; Evans moreover proved to be an intelligent assistant in his field work.

The richness and diversity of the fauna, of which the moths were comparatively little known, and impossible to identify quickly at the light trap, had prevented me from suggesting in advance a suitable species for special study, and soon banished from Bernard's mind all thoughts of release and recapture experiments; so he threw himself into photographing and filming extreme examples of pattern and structure of the forest insects, considered relevant to the Darwinian theme of evolution (see Kettlewell, 1959).

Of these activities I have already given some details and references, other than those found here, in the Obituary I wrote of him (Wiltshire, 1979), and will therefore only mention a curious case which interested us both. He specially mentioned it as an unusual example of Batesian mimicry

Larvae of *Gynecia dirce* L.

(Kettlewell, 1959: 203) as it involved two unrelated larvae, which I had found on the underside of a leaf of an Imbauba sapling, apparently commensals in the tent which the five or six Nymphalids had constructed and which the Geometrid had entered, perhaps profiting from its resemblance to them. They were caterpillars of the widespread and well-known *Gynecia dirce* L. often found on very young foliage of *Cecropia* near Rio. I would not say, as Bernard did, that the spiny caterpillars formed "a mass"; I think that term applies better to the fully exposed, gregarious caterpillars of the Noctuid *Dyops ocellata* Cr., fifty, nearly one inch long, of which were observed on such foliage, near Rio (described in Wiltshire, 1962: 51), and still more to the Chrysomelid beetle *Coelomera lanio* Sahlb., which in fact are the most dangerous parasite of the tree.

The *Azteca* ants are vegetarian, feeding mainly on the fatty bodies in the detachable trichilia on the petiole bases and also the tissue growing over

Adult of *Coleomera lanio* with larvae killed by *Azteca* ants on leaf of Imbauba tree.

their bore-holes. They can hardly therefore be motivated to attack larvae as do carnivorous ants; nor, of course, do they cultivate and "milk" myrmecophilous caterpillars (such cases are frequent among larvae of Old World Lycaenids, e.g. our own ill-fated Large Blue (*Maculinea arion*), the main subject of my second chapter). Do they, however, recognise a mass of larvae which constitute a threat to the survival of the vulnerable sapling of their choice and act to defend it? This was the controversy in the literature mentioned above, and in an effort to solve it I attached a mass of *C. lanio* larvae to the underside of one leaf on a small Imbauba sapling carrying only a few leaves and housing a new, small ant-colony. If not prevented it was obvious the larva-mass would completely defoliate the sapling and probably kill it. In the event the ants showed continuous hostility, killed at least half the mass and drove away the remainder, thus saving their plant's life.

I prepared a paper of less than two thousand words reporting this evidence relating to the controversy about the *Cecropia-Azteca-Coelomera* symbiosis and read it to a section of the 12th International Congress of entomology held in London in 1964, and a shorter abstract of my talk was in fact published (Wiltshire, 1965). But at the time I thought it odd that the organisers allotted the talk to Section 9a (Agricultural Entomology), as *Cecropia* is a wild tree and *Coelomera* is monoecous on it. I feared that the professionals of agricultural entomology must have been mystified by the whole thing. However, one ant specialist, Prof. W.L. Brown from Ithaca University, showed interest in my talk commenting that he hoped repeating the experiment would confirm my conclusions. This was the understandable response of a professional to an amateur entomologist's results. My fellow-lepidopterist from Bavaria, Franz Daniel was the other man in the audience who spoke at the end, when he said he enjoyed my several photographs of lepidopterous pupae and larvae feeding on Imbauba, included with my slides of *Coelomera*.

My full notes on my year-long observations of Imbauba insects have not yet been published, doubtless containing many irrelevancies to the main theme, but I will leave them at the British Museum (NH) to lie with the many other unpublished manuscripts, such as the Bell manuscript on Indian lepidoptera.

To return to my eighteen months in Brazil, soon after reaching Rio I made friends with Henry Pearson, an amateur lepidopterist who directed a chemical factory there, making and distributing mainly ethyl alcohol, and he introduced me to Dr Lauro Travassos, then the leading Brazilian professional entomologist and also to Ferreira d'Almeida, a retired postman who was the leading Brazilian authority on its butterflies.

The Pearsons lived in a flat at the foot of the Corcovado, and Henry specialised in the Mimallonidae moth family, a Neotropical endemic. I still usually meet him annually on his visits to England.

(to be continued)

Hazards of butterfly collecting — Philippines, 1977

I got off a ramshackle Avro 748 at the even more ramshackle airport at Tugegerao in northern Luzon, a turbulent ride of two hours out of Manila. I was there to evaluate the activities of a mobile surgical contraceptive unit. The first impression was good — they were actually there to meet me! Finding mobile teams of anything, off — and sometimes even on — their schedule is never easy.

We went off to our first appointment, a small regional hospital some four hours from Tugegerao, on roads that progressively deteriorated. The two young doctors on the team knew what they were doing, had excellent relationships with the staff of the hospital they visited, and did both vasectomies and tubectomies with speed, skill and care (at least with sufficient speed, skill and care to satisfy a trained economist, who could later back up his impression by studying statistics on side effects).

One of the most galling things about business travel is that it rarely combines with butterfly collecting. The schedule is hectic, and everyone else prefers lunch in a restaurant to braving discomforts, wild animals, and snakes in a patch of forest. When we set out the next morning there would be no opportunity for even an hour with a net. We were heading for the most remote point serviced by the mobile unit, the road continuing to deteriorate till we reached a river where an amazing Heath-Robinson pulley-driven ferry awaited us. We got across safely, reached the small hospital, had lunch. A strong and lengthy tropical storm did not interfere with the few tubectomies and a single vesectomy due to be performed. Again all went well, and I could note that the hospital was spick and span, not just cleaned up because of my visit. As we boarded the van to go back to the relative comforts of our last hotel, where most of our luggage still resided, since we had taken only the medical equipment with us, we were informed that the river was in spate and the ferry had been swept away. We were stuck. But not to worry: "It is usually not swept far down river and we normally get it back in action within a day or two".

I was delighted. There would be one or two days free for butterfly collecting, since there are strict limits to how much time can gainfully be used to evaluating a ten-bed hospital's average of three sterilisation clients a month. But first there were questions of practicalities and protocol. Despite my protestations to the contrary, my companions considered that I was faced with intolerable deprivation as a distinguished visitor. Admittedly, the little hamlet had even less to offer, but cold beer and a passable dinner were procured. Involved conversations in Tagalog, as far as I could make out, were concerned with how to organise sleeping arrangements. Again my remonstrations that this really was not an important issue, that anything would do, were not taken at face value.

When it was time for bed I was informed that I was to sleep in the hospital. Elaborate preparations had been made. A mosquito net had been

secured to the arc lamp in the operating theatre and fresh linen had been made up on the operating table. Fortunately I was dog tired and fell asleep without a problem, but whenever I awoke during the night, the giant arc lamp reminded me of where I was. Also, I was actually not all that used to watching a dozen operations performed in just two days, so towards dawn some highly intricate dreams got me up early to face a splendid looking day.

It was an excellent day. My total species count at the end of it was just over 100, including one of those rare cases where you do not even know to which family the species belongs. It was a female, a beautiful mimic of the Danaid, *Parantica aglea*. Was it a Nymphalid? A Pierid? It did not seem to fit. It turned out to be a *Zethera pimplea,* a Satyrid which is so unlike other members of that group that my inability to place it may be excused.

Perhaps it was fortunate that I caught no species new to science that fine day, so unexpectedly devoted to butterfly collecting. I might, though I prefer short and pleasant specific names, have been compelled to call it *theatroperationibusi.*— TORBEN B. LARSEN, 358 Coldharbour Lane, London SW9 8PL.

Vapourer larva on bracken

On 20th July 1991, at Upperton Common in West Sussex my brother noted a larva of the Vapourer, *Orgyia antiqua* L., on a partially eaten frond of bracken, *Pteridium aquilinum*. He kept it, and for its remaining five days before spinning, it ate the same. A female emerged on 7th August.

There is no suggesting that it had fed from the egg on this. This larva often wanders, or is blown from the trees and shrubs on which it more usually feeds. But I find it rather surprising that any lepidopteron other than bracken's own very limited fauna, should eat it at all, and survive to tell the tale.— The Revd. RICHARD DICKSON, Vicarage, Playfair Road, Portsmouth PO5 1EQ.

***Platyptilia ochrodactyla* Denis & Schiffermuller (Lep.: Pterophoridae) in Wiltshire**

During the summer of 1991 I discovered a substantial stand of Tansy (*Tanacetum vulgare*) at the junction of the railway and the Kennet & Avon Canal at Trowbridge in Wiltshire. Accordingly with *P. ochrodactyla* in mind I visited the locality after nightfall on 18th August. Initially there appeared to be little in the way of lepidoptera until about 2200 hours when several Plume moths appeared on the Tansy flowers. Confirmation of their identity with certainty, as might be expected, was hardly possible by torchlight — this had to wait until the following day. As far as I know *P. ochrodactyla* has not been noted in Wiltshire before. The present record is in VC8. *P. ochrodactyla* appears to be quite common in this locality. Tansy occurs on the railway banks sometimes in plenty in this general area but I have only investigated this one locality.— M.H. SMITH, 42 Bellefield Crescent, Trowbridge, Wiltshire.

Aphodius consputus Creutz. (Col.: Scarabaeidae) in S.E. London

On 13th October 1991, on Woolwich Common hear here, finding some horse-dung tenanted as usual at this time of year by large numbers of *Aphodius contaminatus* (Hbst.), I fortunately persisted in dissecting it and was rewarded with a single individual of what I took to be the equally common (but less seasonal) *A. sphacelatus* (Panz.) of the small dark and rather dingy form. Great was my surprise when, on my coming to set it a few days later, it proved to be a far better find — a male of the very local *A. consputus* Creutz. In fact, so strong is the resemblance in general of this species to some of the smaller examples of *sphacelatus* that one could well imagine its being passed over at times in the field as the latter — if the tell-tale yellow patch above each eye in the rarer species (of which there is no trace in the commoner one) has not been noticed. This provides the most obvious difference; others requiring closer scrutiny are the more uniform puncturation of the pronotum with its finer, almost obsolete, side-borders and the shorter, altogether less conspicuous pilose pubescence on only the apical quarter of elytra. I hope to search for further material in the ensuing weeks but the supply of dung on the common is very erratic.

A. consputus is a species with its "metropolis" centred upon East Kent, in that respect reminding one of *A. quadrimaculatus* (L.) — the area from Dover to Thanet (inclusive), with records thinning out as they extend westward. To the south, it reaches the Rye/Camber district and perhaps farther into Sussex. In some of its localities it has occurred plentifully in both late autumn and early spring. West Kent records are very sparse indeed; I can cite only Gravesend (an old one) and my own find of a single specimen from the Isle of Grain, in the extreme east of the vice-county (May 1936). The occurrence of the species at Woolwich is therefore remarkable, especially in being at the opposite end of the vice-county from the Grain capture. There are a very few outlying records — one for Bushey Park (presumably Middlesex) and, more strangely, Tavy Valley, S. Devon. The latter very isolated record probably relates to a casual for the beetle was found in a dead rabbit.— A.A. ALLEN, 49 Montcalm Road, Charlton, London SE7 8QG.

Abundance of butterflies, moths and dragonflies in Cambridge in 1991

All the tales of woe I keep hearing about the scarcity of butterflies did not apply to Cambridge last year. Even though hibernators such as Small Tortoiseshells (*Aglais urticae*) and Brimstones (*Gonepteryx rhamni*) were about as early as late February and March respectively (we did have a mild winter), with the exception of the Holly Blue (*Celastrina argiolus*) and Orange-tips (*Anthocaris cardamines*), butterflies in spring and early summer were few and far between, so it could be that June, in which we had at least some rain every day, although by no means enough to lift the drought conditions and hosepipe ban, quite clearly must have suited the

lepidoptera, and my garden, as well as those of my neighbours, has been swarming with both butterflies and moths from then on until late autumn when the usual Vanessids took off into hibernation. Holly Blues of both first and second generations were exceptionally common, as they were last year, with several hundred being seen. With both holly tree and firethorn present, most of them seemed to be flying around and settling on the latter. Small Whites (*Pieris rapae*), Green-veined (*P. napi*) and Large Whites (*P. brassicae*) have been almost as common with hundreds of eggs of all three species having been observed on my nasturtium plants. There was, however, some very heavy predation of their larvae, for although I spotted the eggs and young larvae of these *Pieris* species on the nasturtium leaves, no Large White and very few Small or Green-veined White larvae survived to the final instar. The buddleias had a phenomenal year. I do not recollect seeing so many butterflies at one time for thirty or forty years. Often, in late August and early September there would be 40 or more on the one bush, day after day. Not just in my garden, but also in other people's gardens within the city and in other towns I visited such as Ely and St Ives. Although the majority of these were Small Tortoiseshells, Peacocks (*Inachis io*), Red Admirals (*Vanessa atalanta*), Painted Ladies (*Cynthia cardui*), Commas (*Polygonia c-album*) and all three *Pieris* species were also present. I even caught a brief glimpse of what I am almost certain was a Large Tortoiseshell (*Nymphalis polychlorus*), but it was too far off and too skittish to be absolutely sure and had disappeared by the time I had got my net. It may well have been a *Nymphalis xanthomelas* (Eastern Tortoiseshell) for European stock of both this and the Large are advertised by the dealers and are bred in this country with the possibility of escapees being around.

Also seen in my garden this year, in some numbers, have been Meadow Brown (*Maniola jurtina*), a species not normally seen so near the centre of Cambridge. For some reason this species and the Small White (but not the Green-veined nor Large Whites) came regularly into the house through open windows. The Large, Small and Essex Skippers (*Ochlodes venata, Thymelicus sylvestris, T. lineola*) all put in an appearance on several occasions.

Walks in the surrounding countryside including National Trust properties have been a source of various sightings. Gatekeepers (*Maniola tithonus*), Small Heaths (*Coenonympha pamphilus*), Wall (*Pararge megaera*), Small Coppers (*Lycaena phlaeas*) the above-mentioned three Skipper species, Small (*Cupido minimus*) and Common (*Polymmatus icarus*) Blues, were all more abundant than I remember for many a year. Although I no longer run a moth trap, every time I did any watering during August and September (by can, hoses being banned), or weeding, I disturbed literally dozens of moths which were resting up during the day and more than I usually expect have been coming into the house, garage

and garden shed. Nothing rare or migrant unfortunately, and by far the commonest moth has been the Large Yellow Underwing (*Noctua pronuba*) comprising at least a quarter of those I have disturbed from foliage. Having occasion in mid-August to remove a small fir tree, while so doing some 30 moths flew out of it, of which nearly half were Large Yellow Underwings. Intrigued by this density in one small tree, I then regularly examined its twin over the next couple of weeks and day after day anything from two to three dozen moths, mainly noctuids, could be shaken out of it.

Dragonflies have also been prevalent in my garden in 1991. They did not breed in my pond, which was full of frogs for most of the year, and I presume they were bred in either the river Cam or Cawcutts lake (a recent innovation, being a by-product of road-building), both some half-mile away. Two individuals of one species in particular, the Common Darter (*Sympetrum striolatum*), were regular visitors and daily took up position on top of some canes supporting my tomato plants where they rested and sunned themselves, sometimes for hours at a time and were so tame I could approach within inches of them to confirm their identities and take photographs. Other species that regularly visited the garden on several occasions were the Southern Hawker (*Aeshna cyanea*), the Brown Hawker (*A. grandis*), the Emperor dragonfly (*Anax imperator*), and the Broad-bodied Chaser (*Libellula depressa*). An interesting observation that I made was to see our cat running back and forth across the lawn and jumping high into the air at each pass. When investigated more closely I saw that this behaviour was due to her efforts to catch one of other of the above dragonflies as they cruised here and there across the garden; fortunately for them at a height that was above her reach.— BRIAN O.C. GARDINER, 2 Highfield Avenue, Cambridge, CB4 2AL.

***Eurydema oleracea* (L.) (Hem.: Pentatomidae): recurrence in N.W. Kent, and its localisation**

Although this handsome shield-bug is stated by the late Dr A.M. Massee (1963, *The Hemiptera-Heteroptera of Kent,* ed. 2: 130) to be widely distributed and locally common in the county, this applies to a period of far greater insect abundance than the present. Southwood & Leston (1959) indicate that it occurs "sparingly". Only a few of the localities listed by Massee (p. 131) are in West Kent, one of which — "Borstal Heath, Plumstead" (it should have been "Bostall Woods") — relates to a specimen taken by myself in May 1952 at roots of herbage. This is the only time up to the present year that I have found the insect.

I was interested, therefore, to encounter the nymphal stages of *E. oleracea* in some plenty on horseradish (*Armoracia rusticana*) on Woolwich Common near here, on 8th September 1991. The first seen was on a leaf of *Polygonum persicaria* next to a clump of the former plant but was quickly recognised. The nymphs are well marked and clearly show the pale central pronotal stripe of the adult. They were of various sizes, first or second

instar to perhaps the last, or at all events the penultimate; mostly somewhere between. In the younger stages, they often tended to congregate quite closely but without actual contact, in a group of several together. Neither then nor on a second visit three days later, when they were about in similar numbers, could any adult bug be found; but nymphs were not difficult to rear. About ten were successfully brought to maturity, the first appearing on the 11th of the month and the last on or about the 26th. All are typical, except that one is much bluer in ground-colour while the rest are greenish-aeneous.

On Woolwich Common, horseradish is locally plentiful but the bug seemed confined to a very small area; nymphs found on only about four separate clumps growing more or less in two groups a few feet apart. Several other clumps nearby were examined without success. Over the years I have from time to time kept a sharp look-out for the *Eurydema* on this plant on various parts of the common but always drawn a blank. The obvious inference is that the species is, for some reason, very highly localised there. Its known area of occurrence is between a large open expanse to the east and a more shaded strip of ground with bushes and young trees to the west.— A.A. ALLEN, 49 Montcalm Road, Charlton, London SE7 8QG.

Otiorhynchus arcticus (Fab.) (Col.: Curculionidae) in Cumbria

On 16th July, 1991 I found one specimen of *Otiorhynchus arcticus* at the foot of the Wastwater Screes in Cumbria. The weevil was taken crawling near a small plant of Tormentil (*Potentilla erecta*) by the side of the public footpath just below the area of the screes known as High Adam Crag (NY1504) at an elevation of 300 feet.

In Britain, *O. arcticus* has been recorded mainly from Scotland but it is also known from Ireland and the Isle of Man where it has been found in a number of coastal localities. On the continent, it has been recorded from Scandinavia, Poland, Czechoslovakia, Finland, Russia and the Pyrenees. Until recently *O. arcticus* was unknown in England except as sub-fossil material. Remains of the beetle were found in late glacial deposits at St Bees in West Cumbria by R.G. Pearson (1973, *J. Anim. Ecol.* **43**: 129-150) but in 1986 a specimen of the weevil was found by Keith Alexander at Lindisfarne Castle, Northumberland (1989, *Entomologist's Record* **101**: 36).

O. arcticus is usually associated with high mountains and can be found at elevations exceeding 3,000 feet, so it is interesting to note that my specimen from Wastwater was found at only 300 feet. However, this is not altogether unusual as it has been found at much lower levels in various places. In Scotland, the weevil occurs at sea level on many of the Western Islands, and it is also recorded from localities in Speyside and Deeside at altitudes below 800 feet. In Ireland, it was found by M.G. Morris on the coast at Poulsallagh, County Clare (1967, *Proc. Roy. Ir. Acad.* **65** (16)): 365) and

H. Britten recorded it from sea level at sites along the south-west coast of the Isle of Man (1945, *North Western Nat.* **20**: 193).

O. arcticus does not appear to have been previously recorded from Cumbria and this establishes a new record for the county and the first for Vice-county 70, Cumberland.— R.W.J. READ, 43 Holly Terrace, Hensingham, Whitehaven, Cumbria CA28 8RF.

Tachys parvulus (Dejean) (Col.: Carabidae) from synanthropic habitats in Northamptonshire and Bedfordshire

Joy (1932, *A Practical Handbook of British Beetles*) describes *Tachys parvula* as "very rare; under stones at sides of small streams", whereas Lindroth (1974, *Handbk. Ident. Br. Insects,* **IV** Pt. 2) gives the habitat of this species as "on open gravel, often near the sea", based upon nineteenth century British records from Devon and Cornwall. He queries the authenticity of early Cheshire and Lancashire localities but Dr M.L. Luff (in litt.) assures me that they are valid. Whitehead (1988, *Entomologist's mon. Mag.* **124**: 186), in recording a single specimen of *T. parvulus* in flight at Broadway, Worcestershire, in May 1986, also lists recent captures at Uckfield, Sussex in 1974, and Reading, Berkshire in 1985. In August and September 1987 Whitehead (*ibid,* **126**: 20) discovered a colony of *T. parvulus* in south Worcestershire, breeding in quartz sand on Jurassic clay bedrock, and concludes this species to be "an obligate lithicole" but "somewhat hygrophilous".

On 7th September 1991, whilst weeding a path in front of my house at Hemington, near Oundle, Northamptonshire (TL091852), a minute black carabid emerged from between two granite kerb sets and ran across the tarred roadside pavement. It proved to be a female *Tachys,* the identity of which Dr Luff later confirmed as *T. parvulus*. Subsequent searches of the area, including the gravel drive to the house, failed to reveal any further specimens. At Hemington the soil is boulder clay overlying Oxford clay.

Shortly afterwards I learned that Dr B.S. Nau had recently recorded this species in his garden at Toddington, near Dunstable, Bedfordshire (TL0129). On contacting Dr Nau, he kindly provided me with details of his captures, and permitted their inclusion in this note. His first record is of ca. three specimens on 8th June 1986, with ca. ten observed on 31st March and two on 26th August 1990. All were seen running from crack to crack across a paved area laid on a thin bed of sand 20 years ago when the house was built. The garden has a neutral loam soil overlying glacial sand. The paving adjoins the house and has a sheltered southerly aspect.

Dr Nau comments (in litt.) that the *Tachys* "resemble black ants in size and speed, but are less jerky and more purposeful" in their movements. Certainly when I first caught sight of the Hemington specimen I was unsure as to whether it was a beetle or not. Dr Nau attributed this rapid movement to the temperature on the surface of the paving which "was quite extreme, hot to the touch (35 - 40°C?)". It is possible that this species occurs in a

wider range of habitats than was previously thought and is being overlooked. The Reading specimens were found in crumbling mortar in an old wall. Perhaps closer examination of the man-made environment will reveal further locations for *Tachys parvulus*.— R. COLIN WELCH, Institute of Terrestrial Ecology, Monks Wood Experimental Station, Abbots Ripton, Huntingdon, Cambs PE17 2LS.

Oegoconia caradjai Popescu-Gorj & Capuse (Lep.: Gelechiidae) in Cornwall

In comparing moths in Brittany and Cornwall, Spalding (1991, *Entomologist's Rec. J. Var.* **103**: 259-261) stated that *Oegoconia caradjai* Popescu-Gorj & Capuse has not been found in Cornwall to his knowledge. When introducing the species to the British list Agassiz (1982, *Proc. Brit. ent. nat. Hist. soc.* **15**: 1-5) included in its known distribution confirmed records from Cornwall and the Isles of Scilly. I have found it in two places on the Lizard and at Gwithian (all in VC1) and, courtesy of Dr F.H.N. Smith, know of other Cornish records from both vice-counties.— R.J. HECKFORD, 67 Newnham Road, Plympton, Plymouth PL7 4AW.

A new larval foodplant for captive rearing of *Hypena obsitalis* Hübner, the Bloxworth Snout

During 1991 I had the opportunity to rear larvae of *H. obsitalis* Hb. from a locality in Devon. Skinner, B. (*Colour Identification Guide to Moths of the British Isles*. Viking 1984) states that this species feeds on common Nettle (*Urtica dioica*) and Pellitory-of-the-wall (*Perietaria judaica*) (Urticaceae). However, I was informed that larvae which had been reared previously from this locality were reluctant to eat nettle.

As no Pellitory grows in the Harpenden area, I gave the larvae the superficially similar Mind Your Own Business (*Soleirolia soleirolii*) (Urticaceae) (also known as Baby's Tears and Mother of Thousands) as well as nettle. The larvae ate both plants, preferring Mind Your Own Business, and all eight emerged as normal adults in due course. I do not believe *H. obsitalis* has been reared previously on this plant.— ADRIAN M. RILEY, Farmland Ecology Group, Dept. Entomology and Nematology, Rothamsted Exp. Stn., Harpenden, Herts AL5 2JQ.

Southerly movement of the Red Admiral butterfly (*Vanessa atalanta* (Linnaeus)) in 1991

During the afternoon of 26.ix.1991, seventeen individuals of this species were seen flying strongly in a southerly direction across several locations on the Longmynd in Shropshire. All the Red Admirals seen were behaving in this way. Between 11am and mid-day on 20.ix.1991 our colleague David Hooper noticed several butterflies, including Red Admirals, flying out to

sea from the beach between Highcliffe and Mudeford, Hampshire. On both occasions the weather was warm, sunny and calm.

These observations may be of interest to those monitoring Lepidoptera migration.— ADRIAN M. and DEBORAH K. RILEY, Longmynd, 35 Park Mount, Harpenden, Herts AL5 3AS.

Larvae of *Cynthia cardui* (L.) (Lep.: Nymphalidae) feeding on alien Compositae

In October 1991, at West Bexington, Dorset, three larvae of the Painted Lady, *Cynthia cardui,* were found feeding on the leaves of globe artichoke, *Cynara scolymus* and two on *Carlina acanthifolia,* an ornamental thistle. *Cynara scolymus* originates in the Mediterranean region and is widely grown as a crop. *Carlina acanthifolia* is also south European, but so far as I know it is not widely cultivated. I thank Dr Susan Eden for providing these records.— DENIS F. OWEN, 2 Shelford Place, Headington, Oxford OX3 7NW.

Recent publications

British sawflies (Hymenoptera: Symphyta) — a key to adults of the genera occurring in Britain by **Adam Wright.** 62pp, numerous figs. Limp. AIDGAP. Field Studies Council 1990. £4.25.

An illustrated set of keys to the adults of the 109 genera of sawflies found in the British Isles. Additional sections on life history, ecology, collecting and morphology are included. Recent taxonomic changes have been incorporated, and a useful bibliography is provided. The keys are clear and well laid out with diagnostic features illustrated.

Insects of the British cow-dung community by **Peter Skidmore.** 166pp, 382 figs. AIDGAP. Field Studies Council, 1991. £8.25.

This book is a copiously annotated set of keys to insects of a particular habitat. Although mainly devoted to insects, there are illustrations of fungi and plant seeds found in cow-dung, and notes on invertebrates other than insects that may be found in or associated with dung. Both adults and larvae are keyed but not all to species level.

Although primarily an identification guide the book is packed with information about the cow-dung community and will be a bible for many students as well as a useful guide for those entomologists who occasionally feel moved to poke around in a cow-pat. This book is excellent value for money.

A review of butterfly introductions in Britain and Ireland by **M.R. Oates** and **M.S. Warren.** 96pp, maps and figures. A4 paperback. 1990. Available from WWF UK, Panda House, Godalming, Surrey GU7 1XR. £8.50.

This is a contract report for the Joint Committee for the Conservation of

British Insects (JCCBI), funded by the World Wide Fund for Nature. The report summarises the findings of a comprehensive review of attempted butterfly establishments, covering 323 introductions involving 43 species in 47 counties within the UK. The reasons for establishments included conservation (47%), surplus breeding stock (29%), amenity (17%) and scientific (7%). As well as documenting known establishments, the report seeks to analyse the results, and makes a number of useful recommendations for successful and sensible establishment. Appendices include further advice, codes of practice and addresses. Although economically produced, this report should be compulsory reading for all those who would like to establish or re-establish colonies of butterflies.

Weevils by **M.G. Morris.** 76pp, 4 colour plates, numerous illustrations. Naturalists Handbook no. 16. Richmond Publishing. 1991. £7.95 (paper) or £13.00 (boards).

This new volume in a highly successful series covers the weevils, an ambitious task in a small volume. Dr Morris provides a comprehensive and very readable introduction to these interesting beetles. The treatment of the biology is exemplary and the sections on collecting and studying are packed with sound advice.

Providing an identification guide to the nearly 600 British species is beyond the scope of a small volume, but the well-illustrated keys to family level are easy to use. Keys to the species level are given for particular foodplants where the weevil fauna is characteristic, such as beech, cabbage, dock and others. Line drawings and a limited number of colour illustrations give the reader a feel for the different families although the scale for the line drawings is not shown. The plates give scale as "x7" — difficult to visualise and a small scale-bar would have been helpful.

An Atlas of Norfolk Butterflies by **M.R. Hall.** 48pp. Paperback. Witley Press Ltd. Hunstanton 1991. £2.95.

A neat, concise and above all current account of the county's butterflies based on planned survey by many observers during 1984-88. Only the Holly Blue is now likely to be under-recorded! Each of the 31 resident and two regular migrant species is given its tetrad dot distribution map and most species have beside them a flight-time histogram that represents the number of different site observations for each week of the season during the middle year of survey.

The accompanying text attempts to clarify apparent distribution anomalies and adds snippets of information of local and wider significance. There are short introductory and historical notes and suggestions for future work. The publication appears to be largely free from proof-reading errors, which will come as relief to those hard-pressed

stalwarts who undertook rushing the whole into print after a delay of nearly three years. *Polyommatus* incorrectly spelt on p.28 is an isolated instance. The booklet is immeasurably enhanced by the exquisite black and white drawings by a local artist naturalist Doug Hammersley; so good are his illustrations that we can see with no doubt at all the insect depicted on p.46 to be the Chalkhill Blue (not a Norfolk species today) and not the Silver-studded! The Natural History Department of Castle Museum, Norwich, attracts praise for the central role it played in the survey, just the tip of its ice-berg of consistent encouragement and support given to the wild-life workers of the county.

Available from BBCS, 1A Tuckswood Lane, Norwich NR4 6BD.

G.M. Haggett

Recent surveys and research on butterflies in Britain and Ireland: a species index and bibliography. Compiled by **P.T. Harding** and **S.V. Green.** 42pp. ITE, 1991. £2.50. Available from Institute of Terrestrial Ecology, Merlewood Research Station, Grange-over-Sands, Cumbria LA11 6JU.

This little publication summarises the literature refererences from the 1970s to date that are relevant to biogeographical studies on butterflies in the UK and Ireland. Bibliographic references are indexed by species and, most usefully, the title of the relevant article is given. A handy resource volume for those interested in autoecological research, studies of distribution, management and protection of species.

Butterflies of South-east Cornwall by **M.P. Frost** and **S.C. Madge.** 69pp, 35 maps. A5. Caradon field and natural History Club, 1991. £3.95. Available from A. Aston, Briar Cottage, Downderry, Torpoint, Cornwall. This well produced local list gives, for each species recorded in S.E. Cornwall, a distribution map based on 1km squares, comment on status, habitat, flight period and foodplants. A number of species are illustrated with attractive line drawings. There is a gazetteer, bibliography and index. An interesting feature of this informative list is earliest and latest records for adults in various years. The authors have been careful to distinguish between literature foodplants and those utilised locally, thus considerably enhancing the value of this work.

A complete guide to British moths (Macrolepidoptera) by **Margaret Brooks.** 248pp, numerous colour illustrations plus 26 colour plates. Jonathan Cape 1991. £19.95.

This book is a sequel to *A complete guide to British butterflies* by the same author, published in 1982. The introductory chapters range wide over the biology of moths including life-cycle, variation, enemies, diseases, protective devices, migration, injurious species and habitats. There are notes on collecting, study and breeding.

Broad treatment of the life histories of the 17 families of "macros" introduce the main body of the work, an illustrated account of the life of individual species. Each species gets two pages. A brief description of distribution, habitat, life cycle and foodplant, with a more extensive coverage under the headings imago, egg, larva, pupa and notes on breeding. Colour photographs depict the living moth, egg, larvae in various stages of development, cocoon (where appropriate) and pupa. The book concludes with 26 plates of set specimens, glossary and very brief bibliography.

Reading through the book produces mixed reactions — eager anticipation of the treatment of early stages ("complete guide") to disappointment that only 80 species are in fact covered in detail. The treatment of these 80 is very good. The colour photographs vary from very good to excellent with a few that surpass even these descriptions. It is a great pleasure to see so many facets of the early stages of our moths so well illustrated. The "complete" part of the book is justified by the inclusion of the plates covering all species, including those not covered in detail in the main part of the book.

A reader purchasing a "complete" guide could reasonably expect coverage of all British moths including major forms and sub-species. Some of these are absent, others are tantalisingly mentioned in the text with no linked illustration. There are some notable absences — where, for example, are *Thalera fimbrialis* and *Eupithecia abietaria*? A number of distinct forms and sub-species are missing. For example, only *gueneei* of *Luperina nickerlii* is illustrated, and forms such as *Hepialus fusconebulosa* ab. *gallicus* and *Apamea crenata* ab. *combusta* are omitted.

A complete guide to British moths (Macrolepidoptera) by **Margaret Brooks.** 248pp, numerous colour illustrations plus 26 colour plates. Jonathan Cape 1991. £19.95.

Species resident in the Channel Isles, and which may be found on the mainland are variably treated. Both *Scotopteryx peribolata* and *Agrotis crassa* are illustrated, but no mention is made of *Thera cupressata, Trigonophora flammea* or *Hypena obsitalis*. Treatment of other immigrant species is similarly varied with such as *Mythimna loreyi, Utetheisa pulchella, Eublemma parva, Nola aerugula* and others not getting a mention. The nomenclature used is also problematic. There are many errors relating to authors in the legend to the plates and some confusion, for example in the genus *Zygaena,* where the author of the sub-species in the trinomial is assigned to the binomial — e.g. "*Zygaena purpuralis* Trem." Full or shortened author names are seemingly used at random, with "Hubner" and "Hb.", "Linnaeus" and "Linn." appearing on the same page.

Much of this criticism could have been avoided if the book had unashamedly kept to its treatment of life histories, which have some of the best published photographs the reviewer has seen — rather than attempting to produce a complete guide. Paul Sokoloff

Die Schmetterlinge Baden-Würtembergs Volumes 1 & 2 **Tagfalter.** Edited and compiled by **Günter Ebert** and **Erwin Rennwald.** Vol. 1: 552pp, 354 colour photographs, 57 distribution maps, 138 diagrams and drawings. Cloth boards and dustjacket. Price DM49. Vol. 2: 535pp, 516 colour photographs, 86 distribution maps, 193 diagrams and drawings. Cloth boards and dustjacket. Price DM49. Verlag Eugen Ulmer, 1991.

The interest to European lepidopterists of this sumptuous two-volume work far exceeds the boundaries of the south-west German state of Baden-Würtemberg. It comprises the first part, devoted to butterflies, of a larger work intended to cover the whole of the Macrolepidoptera. Of the remaining five volumes, volume three will cover the Sphingids, Lasiocampids, Arctiids, etc., volumes four and five, the Noctuids, and volumes six and seven the Geometers.

The whole appearance of these first two thick butterfly volumes, covering 175 species, is very pleasing, being printed on good quality glossy paper and lavishly illustrated with first rate colour photographs, mostly taken in the field, of the imagines, larvae, pupae and their habitats within Baden-Würtemberg. Part one of the first volume deals with a whole range of general topics such as taxonomy, faunistics, ecology, conservation and (contributed by Norbert Hirneisen) data processing, with characteristic German thoroughness. For example, habitat preferences, associations with different plant communities, and flowers visited are tabulated in impressive detail.

The second part of volume one and the whole of colume two consists of a systematic treatment of all the butterflies on the Baden-Würtemberg list, many of them familiar species in Britain. These species' accounts have colour photographs of all their stages and their typical habitats with locality and date; regional and vertical distribution with distribution map from computerised data; ecological information, including behaviour, larval habitats and foodplants (documented with observers' names); and problems concerning their conservation.They also usually include a diagram showing the flight period and often more than one, demonstrating regional variations. Thus the information for each species is largely based on local, original observations and not repeated from previous books. Here lies the intrinsic value of this work to all lepidopterists: it is up-to-date and contains data not readily available in many other works. The compilers and their various contributors are to be congratulated on a magnificent achievement begun a quarter of a century ago, as are the publishers and the Ministry of the Environment of Baden-Würtemberg whose generous subsidy has kept the price for the two volumes down to a very reasonable 98 German marks — about £34.00. The volumes may be ordered direct from the publisher Verlag Eugen Ulmer, Postfach 70 05 61, 7000 Stuttgart 70, Germany). I recommend it to everyone who can read at least some German; even those who cannot will still gain much with a little help from an English-German dictionary. John F. Burton

THE HAWK MOTHS (LEPIDOPTERA: SPHINGIDAE) OF HONG KONG AND SOUTH-EAST CHINA

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Introduction

IN 1841, coincidentally the same year that James Brooke became the first white rajah of Sarawak, the island of Hong Kong, together with a small section of the mainland, was ceded by China to Great Britain. The New Territories were leased to Great Britain in 1898 for 99 years, giving Hong Kong a total land area of 1,046 square kilometres. Geographically of course, Hong Kong has always been part of the Chinese Province of Guangdong (Kwangtung) and in 1997, when the New Territories lease expires, Hong Kong will revert to Chinese rule.

Much of Hong Kong today is grossly overcrowded and the population, estimated at some six million in 1990, grows daily. The casual visitor to the Territory, used to the tourist view of skyscrapers and wall to wall shopping on the island and in Kowloon, would be surprised to find quite large rural areas in the New Territories. Their presence is due to two factors. Firstly, the somewhat rugged terrain and lack of motorable roads and secondly, the Hong Kong Government's rather rigid control on development of the countryside.

Over the last few hundred years the extensive primeval lowland forests have disappeared, destroyed by the inhabitants to make way for crop lands. Remnants have survived, however, in the ravines and copses in the lower hills and valleys; they support a surprising diversity of wildlife, in particular plants and insects. Ideas on conservation came late to Hong Kong. The Country Parks Ordinance was enacted in 1976, establishing a Country Parks Authority and within a relatively short period thereafter, under the guidance of the then Governor Sir Murray Maclehose, 21 Country Parks covering almost 40% of the total area of the Territory were designated. Most visitors to the Country Parks go to the easily accessible recreational areas where barbeque facilities etc are provided; there are also large tracts where access is not encouraged.

General

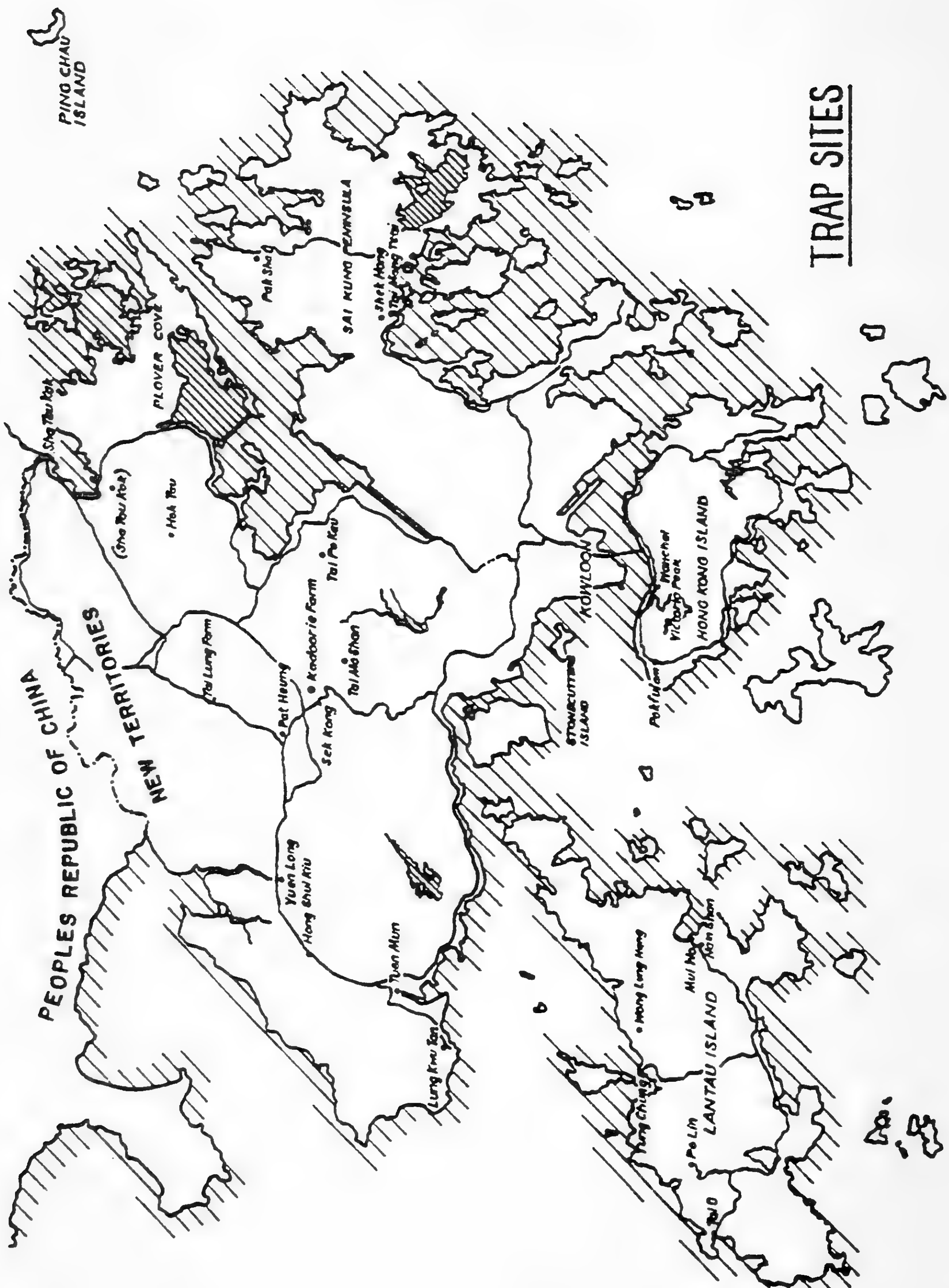
This paper is the result of intensive collecting of sphingid moths in Hong Kong between June 1989 and November 1990. A total of 63 species has been recorded, many of which are new records from the Territory and some are new records for China. Mercury Vapour lamps were run on 110 nights, sometimes with two lamps on the same night and a total of 937 trap hours were logged. Traps were run all night, from before dusk until after dawn on 59 occasions. Although for various reasons some areas were

covered rather better than others, efforts were made to cover all of the Territory. Trap sites are listed (Table 1) and the numbers found in each locality are recorded under each species heading. All place names mentioned in the text are plotted on the map.

A large proportion of the trapping was carried out at Kadoorie Farm, Pak Sha O and Tai Po Kau. Kadoorie Farm occupies a few hundred acres between 152 metres and 760 metres below Tai Mo Shan, at 958 metres the highest point in the Territory. It was leased by the Government to the Kadoorie Agricultural Aid Association (KAAA) in the 1950s for stock breeding, vegetable growing and to assist local farmers to improve farming skills in order to raise their standard of living (Barretto 1980). Today it is a beautiful and peaceful haven in the New Territories, carefully managed and supporting a plethora of wildlife. Pak Sha O is a peaceful old Chinese village in the east of the Sai Kung peninsula, set in fung shui woodland, one of numerous such villages in the New Territories. Tai Po Kau is designated a "Special Area", the equivalent of a Site of Special Scientific Interest (SSSI). It contains some of the oldest and most diverse woodland in Hong Kong consisting of mixed broad-leaved and pine.

The collections at the Hong Kong University and at the Agriculture & Fisheries Department Tai Lung Experimental Farm at Sheung Shui were examined, as were the private collections of Dr Alistair Ballantine, Dr Mike Bascombe, Mr Kent Li and Mr James Young. The Guangdong Entomological Institute and the Zhongshan (Sun Yatsen) University in Guangzhou, China, were visited and records from these collections are included in the text where appropriate. It was not possible to carry out a breeding programme during this project due to pressure of a full-time job and frequent short absences from the Territory. Host plant records in Hong Kong have been kindly provided by Dr Mike Bascombe and Mr James Young; no attempt has been made to include other known host plants since these details are readily available elsewhere.

In addition to light trapping, moths were netted feeding at dusk and dawn on *Lantana* (Verbenaceae), *Ixora* and, in particular, *Duranta repens* (Verbenaceae), known locally as Golden Dewdrop (Ho, 1981: 71). The appearance of macroglossine species at light is at best sporadic and, after it was realised (about July 1990) just how attractive the blossom of *Duranta* is to this group, a total of 140 hours were spent in the early evening and at dawn at bushes at Pak Sha O, Victoria Peak and near Tung Chung on Lantau Island. Some *Macroglossum* species were not taken at all at light; the relative incidence at light/nectaring of all *Macroglossum* species is shown on Table 2. It was noticed that bats, often seen taking moths around the light, also appeared around the *Duranta* bush at dawn where they have been seen to take nectaring *Macroglossum*; on one occasion a bat was netted when both it and the author struck at a *Macroglossum* at the same time!


TRAP SITES
PEOPLES REPUBLIC OF CHINA
NEW TERRITORIES
PING CHAU ISLAND
PLOVER COVE
SAI KUNG PENINSULA
KOWLOON
HONG KONG ISLAND
Victoria Peak
STONECUTTERS ISLAND
LANTAU ISLAND
Kadoorie Farm
Tai Po Kau
Tai Mo Shan
Sek Kong
Pat Heung
Tai Lung Farm
Yuen Long
Tuen Mun
Lung Kwu Tan
Po Lin
Tai O

Code	*Locality*	*Number of nights*
KF	Kadoorie Farm, Lam Kam Road, (Sek Kong)	20
PSO	Pak Sha O village, Sai Kung Peninsula	38
TPK	Tai Po Kau Country Park (Special Area), Tai Po	27
PC	Ping Chau Island	6
L	Lantau Island (Mui Wo, Wong Lung Hang, Tung Chung, Nam Shan, Po Lin, Tai O)	10
VP	Victoria Peak, Hong Kong Island (collecting at *D. repens* only — no trapping)	
SH	Shek Hang, Sai Kung	2
STK	Sha Tau Kok	1
LKT	Lung Kwu Tan	1
TMT	Tai Mong Tsai, Sai Kung	1
SHK	Sek Kong	2
SK	Sai Kung	2
—	(Traps were also run on Stonecutters Island and at Plover Cove but no sphingids were taken due to poor conditions.)	

Table 1
List of Hong Kong trap sites. June 1989 — November 1990

There is obviously a limit to what can be achieved in only 18 months; although the total number of Sphingids known from Hong Kong has been doubled, it is unlikely that all those species present have been recorded. A representative collection has been deposited at the British Museum (Natural History) in London.

Macroglossum	*At light*	*Nectaring*	*Total*
Stellatarum	0	1	1
Bombylans	0	6	6
Belis	3	1	4
Pyrrhosticta	14	125	139
Troglodytus	2	28	30
Insipida	0	4	4
Sitiene	0	41	41
Heliophila	6	31	37
Mediovitta	0	6	6
Variegatum	6	89	95
Fritzei	227	9	236
Sylvia	0	1	1
Corythus	22	34	56
Passalus	3	13	16
Mitchelli	2	0	2

Table 2
Macroglossum species taken at light and nectaring in Hong Kong.
June 1989 — November 1990.

The Species

Agrius convolvuli L.
KF (4), PSO (33), TPK (8), PC (29), L (11), VP (16) *(101).*
Sporadic in appearance, this widespread Old World species is nevertheless fairly widespread in the Territory. The 23 specimens in the small Hong Kong University collection probably account for the comment by Hill, Hore and Thornton (1982: 283) that this is undoubtedly the commonest hawk moth in Hong Kong. The moth is often found sitting some distance from the trap in the morning and adults have also been taken at both dusk and dawn feeding at the blossoms of *Lantata* and *Duranta*. On 23.x.90 a total of 16 newly emerged specimens were attracted to the supermarket lights on Victoria Peak.

Bascombe and Young have both reared this species in Hong Kong on

could be said to be hill-topping, particularly at Kadoorie Farm and Tai Po Kau; a habit also noted for the species in Borneo (Holloway, 1987: 122). Found throughout the spring and summer, it is commonest in July and August.

Bascombe has reared this species on *Ipomoea batatas* (Convolvulaceae); Young has reared it on *Clerodendrum kaempferi* (Verbenaceae) in Hong Kong. The author found two larvae feeding on *Duranta repens* (Verbenaceae) at Pak Sha O; one pupated and died, the other also pupated but produced a parasitic wasp of a *Callajoppa* species (Hymenoptera: Ichneuminidae), thought to be undescribed, eight days after pupation. The wasp has been deposited at the British Museum (NH).

Acherontia styx medusa Butler
KF (14), PSO (7), PC (2), SH (3) *(26)*. Found in the same localities as the previous species, but not as frequent. Most of those taken, even at Kadoorie Farm, were not hill-topping.

silogramma increta Walker
PSO (4), PC (9), L (9), SH (1) *(23)*. This and the following taxon are treated by some authors as forms of the same species. In this paper they are treated as being specifically distinct. They can be easily separated by the colour of the abdomen below, which is pure white in *increta* and a dirty brown in *menephron*. Both species vary considerably in the amount of dark coloration on the upperside and also in size; of nine specimens of *increta* taken on Ping Chau Island between 18 - 21.ix.90, four were very small; the smallest male having a fw length of 41mm as opposed to an average of approaching 55mm. The largest specimen noted during the survey was a male with a fw length of 63mm.

Bascombe has reared the species on *Vitex negundo* (Verbenaceae) in Hong Kong.

Psilogramma menephron Cramer
PSO (2), PC (1) *(3)*. Very much scarcer than its congener during this survey although others have found both species in equal numbers in Hong Kong. A pair were found *in copula* by Ballantine in his garden at Tai Mong Tsai on 1.ix.89.

Bascombe has reared this species in Hong Kong on *Clerodendrum fortunatum* (Verbenaceae) and *Ligustrum sinense* (Oleaceae).

Amplypterus panopus Cramer
KF (8), PSO (6), TPK (21), LMC (1) *(36)*. Not very common but widespread in the Territory. Twelve specimens came to light at Tai Po Kau on 3.iv.90, a wet and misty night. With the exception of three fresh specimens at Pak Sha O on 5.viii.89, 15.viii.90 and 24.viii.90 respectively, the species was only seen in the months of March and April.

Rothschild & Jordan (1903: 189) mention specimens in the museum at Tring from Hong Kong.

Ambulyx sericeipennis (?)agana Jordan

TPK (29), L (2) *(31)*. This species is not common in Hong Kong and 29 of the total recorded were taken at Tai Po Kau at the end of March and early April 1990 when the wet and misty conditions were apparently ideal for this and a number of other species. The other two were taken at Tung Chung, Lantau Island on 1.vi.90 and 2.vi.90. No specimens have been seen in any other collections.

Mell (1922) did not record *sericeipennis* from S. China and there are no examples from China in the National Collection in London. Ssp *agana* was described by Jordan from Sikkim, Assam and Burma; it is a variable race as is that from Hong Kong, which resembles *agana* closely. A number of male specimens have been deposited in the Natural History Museum.

Ambulyx ochracea Butler

KF (11), PSO (27), TPK (27), L (11), SH (5) *(81)*. A frequent species widespread in Hong Kong.

Ambulyx liturata Butler

PSO (1), TPK (11) *(12)*. All specimens taken during this survey were at Tai Po Kau between 28.iii.90 and 3.iv.90 with the exception of a single worn example at Pak Sha O on 24.viii.90. All are males. The only other Hong Kong specimen seen is a fresh female taken by Young, also at Tai Po Kau, on 26.viii.88.

In the collection of the Zhongshan (Sun Yatsen) University, Guangzhou, there are three *Ambulyx subocellata* Felder all taken in the University grounds in 1948; a further two examples taken in the same locality in June 1964 are in the Guangdong Entomological Institute collection. Guangzhou in a matter of 120km "as the crow flies" north-west of Hong Kong; this species may well be found in the Territory in time.

Clanis bilineata bilineata Walker

PSO (85), TPK (1), PC (49), L (1) *(137)*. Found from April to October, this is generally a late comer to the light rarely seen until some time after midnight. Indeed the high totals at Pak Sha O and Ping Chau Island are accounted for by the fact that the lamp was left on all night on each occasion the trap was used at these locations. At Tai Po Kau, where it was run all night only twice, the single specimen was seen coming in at 0345 hours. The species was regularly seen flying between 0400 hours and dawn. On 12.ix.90 a specimen was seen flying at 1920 hours.

Leucophlebia lineata Westwood

PSO (12), STK (1) *(13)*. This attractive moth is not at all common in Hong Kong. A specimen was taken at Sha Tau Kok on 6.iv.90 and three were seen at Pak Sha O on 11.v.90; a further one was seen in the same place on 12.ix.90. All other individuals were seen at Pak Sha O in the month of August. It was also seen by the author at both Tai Po Kau and Pat Heung near Sek Kong in the early 1970s.

Polyptychus trilineatus costalis Mell

KF (1), PSO (5), TPK (6), L (3), SH (3), SK (2) *(20)*. This is not a common moth in Hong Kong; it was found during the survey in April, May, June, August, September and October.

Marumba gaschkewitschi complacens Walker

PSO (1), PC (2) *(3)*. A fresh specimen was found clinging to the rim of the trap at Pak Sha O after the lamp had been on all night on 26.v.90. Two further specimens were taken on Ping Chau Island on 18.ix.90. There are two specimens in the Agriculture and Fisheries Department collection at Tai Lung, apparently taken in that location on 24.ix.63 and 14.x.71. Li took single specimens at his garage lights at Hong Shui Kiu near Yuen Long on 28.ii.88, 14.iii.88 and 13.x.88. No other Hong Kong examples are known.

Marumba dyras dyras Walker

KF (3), PSO (271), TPK (61), PC (4), L (31), SH (8), STK (9) *(387)*. This is one of the commonest hawk moths in Hong Kong and has been found in every month from March to October. It is immensely variable and this variability has caused it to be redescribed as "new" on at least ten occasions. The subterminal forewing line is very obviously double, with the outer line heavier. In *M. sperchius,* with which it could be confused, this line is usually single but if double, the *inner* line is heavier and the outer one vestigial (Kitching, *pers. comm.)*.

Young has reared *dyras* on *Hibiscus mutabilis* (Malvaceae) and *Microcos paniculata* (Tiliaceae) in Hong Kong.

Cypa uniformis Mell

TPK (2), PC (1) *(3)*. A specimen was found at 1915 hours on 17.viii.90 at Tai Po Kau fluttering against a wall next to the trap shortly after it had been turned on; a second was seen inside the trap 30 minutes later. A third specimen was taken on Ping Chau Island on 18.ix.90. All are males. No other Hong Kong specimens are known.

Two of the specimens have been deposited at the British Museum (NH); the identity of one of them was confirmed from genitalic examination.

Cypoides chinensis R. & J.

KF (1), PSO (1), TPK (1) *(3)*. The first specimen seen during this survey was at Kadoorie Farm on 25.i.90 and was almost overlooked. It was a cool night (11°C) and had been preceded by a two-week cold spell; the trap was switched on at 1830 hours and off at 2000 hours since there was apparently nothing flying. Thinking it empty, the trap was not examined closely until the following day when a male *chinensis* was found clinging to the inside of the perspex cone! A second male was found two nights later at Tai Po Kau and a fresh female was taken at Pak Sha O on 7.ix.90. One of the males has been deposited at the British Museum (NH). No specimens exist in other Hong Kong collections examined and this is quite surprising since it was found in some numbers around the Tai Po Kau forestry office lights in October 1972 by the author.

Mell (1922: 174) recorded a female coming to light at Ding Wu, North of Guangzhou in mid April and found full grown larvae in April and the middle of June. He found it in wooded areas from 200 to 600 metres. He gave the larval foodplant as *Liquidambar formosana (*Hamamelidaceae), a common plant in Hong Kong.

Cephonodes hylas hylas L.

PSO (3) *(3)*. This day flying hawk moth is a fast flyer and very difficult to approach. None of the three recorded during this survey were captured. One was seen nectaring on *Lantana* at 1120 hours on 8.vii.90 and another would have been taken feeding at *Duranta repens* at 0950 hours on 5.ix.90 if the author had not, in his enthusiasm, fallen off the table on which he was precariously balanced! A third was seen, also at *Duranta repens* at 1805 hours two days later. The species has been taken by other collectors in Hong Kong in small numbers and Bascombe has reared it on *Gardenia jasminoides* var. *florida* (Rubiaceae).

Sataspes tagalica Boisduval form *tagalica* Boisduval (Plate 1, Fig. 2 male, Fig. 4 female)

PSO (5) *(5)*. This remarkable mimic was usually seen mid to late morning but on one occasion was seen late in the afternoon. Females were observed throughout the month of August feeding at *Duranta repens* for a cumulative total of well over an hour. It is difficult to say whether the moth is genuinely scarce or whether it is often overlooked due to its resemblance to *Xylocopa* bees (Hymenoptera, Apidae); *X. phalothorax* Lepeletier in the case of the male (Plate 1, Fig. 1) and an unidentified *Xylocopa* in the case of the female (Plate 1, Fig. 3). Often the only way to tell the moth from the model, which was usually common and often abundant, is that the former always hovers in front of the blossom whilst feeding and the latter lands on the bloom before starting to feed. However, the bee often "hovers" in front of several different flowers before making a selection and when doing

so it is almost impossible to tell moth and bee apart. The yellow markings on the abdomen of the female *Sataspes* exactly resembles light reflecting on the shiny black body of *Xylocopa*. More than once the author has started out of his chair for a *"Sataspes"* which then settled on a flower and the realisation that a "bee" is hovering for rather a long time occasionally took a while to register. Ballantine (*pers. comm.*), observed males feeding and found them readily separable from the model.

Rothschild and Jordan (1903: 474) mention a male and two females from Hong Kong in the Tring Museum, now part of the British Museum (NH) and Mell (1922: 203) also mentions two males from Hong Kong in the Berlin Museum. Mell (1922: 199) also records *S. infernalis* from the area around Guangzhou, albeit uncommonly and there is no reason why this species should not also be found in Hong Kong. Specimens of *infernalis* from the Guangzhou area in the Natural History Museum in London have much brighter and more distinct abdominal bands than those illustrated by D'Abrera (1986: 117); they could not be confused with *tagalica*.

Daphnis hypothous hypothous Cramer

TAK (1) PSO(1) *(2)*. There is a worn female specimen of this species in the Hong Kong University collection labelled "*Daphnis nerii*. July 23, 1974. Magazine Gap Road. Hong Kong" (the Peak District on Hong Kong Island). This is the first record known from Hong Kong. A second specimen was taken by Ballantine at Pak Sha O some years ago. At 2120 hours on 13.viii.90 a fresh male came to light at Tai Po Kau and on 4.viii.90 a worn female was taken at Pak Sha O. No other Hong Kong records are known. The species comes readily to light in Borneo (Holloway, 1987: 146 and Tennent, 1991: 228); the lack of records suggests it is genuinely scarce. Larval foodplants include *Nerium indicum* Mill (Apocynaceae), a plant which is common in Hong Kong.

There is a specimen in the Guangdong Entomological Institute, Guangzhou, taken in Guangdong in October 1983 and another in the Zhongshan (Sun Yatsen) University, also taken in Guangdong Province in (?)1989. Mell (1922: 210) found nine adults and twelve larvae in twelve years in southern China. Chu and Wang (1980: 55) record it from Wan Nam (Tai Tuen Mountains in the Ping Pin District) and Sze Chuen Provinces in China.

Dahira rubiginosa Moore

TPK (34) *(34)*. This species was only found at Tai Po Kau in March and April 1990 during a period when conditions were apparently ideal for a number of species seen only at that time. It was not noted in any other collection in Hong Kong.

Described by Moore in 1888, only the holotype from N.W. India seems

to have been known to Rothschild & Jordan (1903: 515). Mell (1922: 212) found and bred it in S. China.

Acosmeryx castanea R. & J.

KF (2), PSO (98), TPK (20), L (24), SH (4), STK (1) *(149)*. Although D'Abrera (1986: 132) illustrates quite distinct insects, to separate this species from *A. pseudomissa* Mell is very difficult. Since they are, in all likelihood, conspecific (Kitching, *pers. comm.*), all are here treated as *castanea*. A common and widespread species in Hong Kong, sometimes coming to light in large numbers. Although a trap was run for six full nights on Ping Chau Island, *Acosmeryx* species were notable for their absence.

Acosmeryx sericeus rufescens Mell

KF (3), PSO (34), TPK (11) *(48)*. The least common member of the genus in Hong Kong, *sericeus* is easily identified by the reddish coloured upperside.

Acosmeryx shervillii f. *pseudonaga* Butler

KF (9), PSO (51), TPK (14), L (1) *(75)*. Common and widespread in Hong Kong.

This species is illustrated by D'Abrera (1986: 132) as *A. socrates* f. *socrates* Boisduval; he illustrates *shervillii* f. *shervillii* as *socrates* f. *cinerea* on the same page (Holloway 1987: 148, Kitching, *pers. comm.)*. *Socrates* is only known from Sulawesi and the Philippines. *Shervillii* is easily identified by the median dark grey triangles on the underside of the abdomen; other *Acosmeryx* species with which it might otherwise be confused have a thin median line (Kitching, *pers. comm.)*. It is very surprising that only f. *pseudonaga* was found during this survey since both forms are found in all other parts of its range (Kitching, *pers. comm.*) although in Borneo *pseudonaga* is considerably more common than *shervillii* (Holloway 1987: 150).

Eupanacra busiris busiris Walker

PSO (16), VP (4), SH (1) *(21)*. Species of this genus were referred to *Panacra* Walker until recently (Cadiou and Holloway, 1989: 139). Of the 21 specimens of *busiris* recorded during this survey only four were at light and most of these appeared almost as soon as the light was turned on at dusk; one was taken however flying around the light at 2330 hours on 4.viii.90 at Pak Sha O. The remainder were taken immediately after dusk and just before dawn feeding at *Duranta repens* where, often in the company of *Angonyx testacea,* they were hard to catch in the almost total darkness. At Pak Sha O they were, like *Angonyx, Macroglossum, Gurelca* and very occasionally *Hippotion,* feeding completely oblivious of the m.v. lamp only ten feet away. A freshly emerged specimen taken at dusk at light

near Pak Sha O at 1950 hours on 24.iii.90 had the green forewing stripe replaced by a dull reddish brown; unfortunately the specimen was subsequently lost.

Eupanacra mydon mydon Walker

KF (3), PSO (13), L (2) *(18)*. Thirteen of the 18 specimens came to light; four of the remainder were taken nectaring at *Duranta repens* and the last was netted shortly after dawn feeding at *Ixora* sp. The species seems to fly slightly earlier in the evening and slightly later in the morning than the previous one; it has also been observed coming to light at 2230 hours. It is much commoner in collections than *busiris*.

Bascombe and Young have reared it on *Alocasia odora* (Araceae) in Hong Kong.

Angonyx testacea Walker

PSO (31), TPK (1), L (12), SH (1) *(45)*. This species is far more readily attracted to light than *Eupanacra* species and it has been noted coming in to light on one occasion at 2300 hours (Pak Sha O, 7.ix.90). Only ten of those recorded during the survey were taken whilst nectaring and of these, nine were at Pak Sha O and one near Tung Chung on Lantau Island, all at *Duranta repens*.

Nephele didyma F.

L (1) *(1)*. A single, very worn example of f. *didyma* F. was taken at light at Wong Lung Hang, near Tung Chung, Lantau on 19.x.90. It is the only specimen known from the Territory.

Mell did not record this species from S. China.

Enpinanga assamensis Walker

PSO (1) *(1)*. At 0230 hours on 10.viii.90 a fresh male was found resting on ivy climbing on a wall adjacent to the trap at Pak Sha O. A second male was taken by Li resting on a *Lantana* bush early in the morning of 8.ix.90 at Hok Tau. No other specimens are known from Hong Kong.

Mell did not record this species.

Gurelca hyas Walker

PSO (18), PC (30), L (17), VP (5) *(72)*. Oddly enough this species was only taken at light on Ping Chau Island and all other individuals taken during the survey, were netted at dusk or dawn feeding on *Duranta repens* or *Lantana*. The moth was seen to favour blossoms close to the bulk of the growth rather than extended fronds and often disappeared inside the bush in search of blooms. It was observed flying in to the light at 0130 hours (Ping Chau, 18.ix.90 (3)) and 0145 hours (Ping Chau, 22.ix.90). A specimen with the hindwing yellow replaced by a dark russet was taken on Ping Chau Island on 18.ix.90.

Bascombe has reared this species on *Paederia scandens* (Rubiaceae) in Hong Kong.

Gurelca himachala sangaica Butler

PSO (2) *(2)*. One specimen was taken at Pak Sha O at dawn feeding at *Duranta repens* on 4.ix.90 and a second, also at dawn at Pak Sha O on 14.ix.90. Li took a specimen at his home at Hung Shui Kiu near Yuen Long on 4.xii.87. It is probably more common than these records suggest since it may be confused with *hyas*. It may also fly later in the year.

Both Rothschild & Jordan (1903: 589) and Mell (1922: 243) treat *sangaica* as a ssp. of *G. masuriensis* Butler. Mell records it from the province of Guangdong in China.

Sphingonaepiopsis pumilio Boisduval

PSO (2), L (1) *(3)*. A specimen of this attractive little sphingid was taken at Pak Sha O at dusk on 12.ix.90. It looked like a very small *Gurelca* in flight and is probably easily overlooked. A second was taken at the same spot shortly after dawn on 10.x.90 and a third at dawn near Tung Chung on Lantau Island on 19.x.90. All were feeding at *Duranta repens*. Ballantine took two specimens in September 1986 at Pak Sha O and no other examples have been noted.

Macroglossum stellatarum L. (Plate 5, Figs. 7 and 8)

VP (1) *(1)*. A single specimen taken on Victoria Peak shortly after dawn on 29.xi.90 is the only one known from Hong Kong. The white markings on the right forewing seen in the illustration were present when it was captured and appear to be hardened sap-like substance.

Macroglossum bombylans Boisduval (Plate 3, Figs. 1 and 2)

PSO (2), VP (4) *(6)*. The pale underside of *bombylans* is distinct even in flight. It is not a common moth in Hong Kong and was never taken at light; all six specimens were taken in September and October 1990 nectaring at *Duranta repens*; five at dawn and one at dusk.

Rothschild & Jordan (1903: 632) mention specimens from Hong Kong in the museum at Tring.

Macroglossum belis L. (Plate 4, Figs. 7 and 8)

KF (3), VP (1) *(4)*. The orange, rather than yellow, hindwing band, which is fairly indistinct at both edges, distinguishes this species. Two specimens came to light at 2015 hours on 14.v.90 on the summit of Kadoorie Farm and a third came to a trap lower down at 2230 hours on the same night. A worn specimen was netted at *Duranta repens* at dawn on Victoria Peak on 2.xi.90. Other collectors have taken this species in Hong Kong at light and

it is known to come readily to light in Thailand (A.M. Cotton, *pers. comm.*). Li has taken it at *Lantana* at Tuen Mun.

Macroglossum pyrrhosticta Butler (Plate 1, Figs. 5 and 6, Plate 4, Figs. 5 and 6, Plate 5, Figs. 5 and 6)

PSO (40), PC (5), L (26), VP (68), SK (1) *(140)*. This is one of several *Macroglossum* species which are extremely difficult to identify. It can be distinguished from *M. variegatum* by the fact that the underside of the fantail is a reddish chestnut colour in *pyrrhosticta* and a uniform dark brown in *variegatum*. This holds true for most fresh specimens but becomes difficult or impossible with worn specimens. Both species also vary considerably. The only sure means of identification is to examine the genitalia. This has been done in the case of those illustrated, all of which have been deposited at the British Museum (NH). The specimen illustrated on Plate 1 (Figs. 5 and 6) is a chocolate brown colour on the upperside instead of the usual much darker colour. Difficulties in identification make it impossible to be certain about numbers allocated to this species and to *variegatum*; totals should therefore be considered to be estimates.

Bascombe and Young have bred *pyrrhosticta* (or *variegatum,* or both!) on *Paederia scandens* (Rubiaceae) in Hong Kong. Young has also reared it on *Psychotria rubra* (Rubiaceae). The specimen depicted on Plate 4 (Figs. 5 and 6), was reared by the author from an ovum found on *Paederia* sp.

Rothschild & Jordan (1903: 641) state "The bright ferruginous underside distinguishes easily from *variegatum* and *heliophila*". Would that that were so!

Macroglossum fukienensis Chu and Wang, described from China, is clearly *pyrrhosticta* and was synonymised by Inoue (1990: 2).

Macroglossum troglodytus Boisduval (Plate 5, Figs 1 and 2)

PSO (11), PC (1), L (1), VP (17) *(30)*. Only two of the specimens recorded during the survey were taken at light — one on Ping Chau Island on 9-15.x.89 and the other at Pak Sha O on 3.viii.90. All the others were taken feeding at *Duranta repens* at dusk or dawn.

Macroglossum insipida insipida Butler (Plate 3, Figs. 3 and 4)

PSO (4) *(4)*. This is a member of a group of generally small *Macroglossum* species, also almost impossible to identify without genitalic examination. So far only *insipida* has been found in Hong Kong; none taken during this survey came to light. All were taken nectaring. Confusion may occur with this and the previous species.

Mell (1922: 264) named ssp. *sinensis* from southern China; this seems to be no different to the nominate form which is in itself very variable.

Macroglossum sitiene Walker (Plate 4, Figs. 3 and 4)

PSO (32), PC (1), L (3), VP (7) *(43)*. One of the few species of *Macroglossum* that is readily identifiable; the sharp angle to the inner edge of the dark forewing band is diagnostic. Although others have taken this species at light in Hong Kong, a specimen found in the trap on Ping Chau Island on 18.ix.90 was the only one seen at light during the survey. All other specimens were taken at dusk or dawn at *Duranta repens* or, occasionally, *Lantana*. It was noted that whereas most individual *Macroglossum* of other species would mainly visit blossoms at the crown, or at least high on the *Duranta* bush, *sitiene* more usually visited blossoms at a much lower level. At the site on Victoria Peak, where two large stands of *Duranta* were split by Lugard Road, *sitiene* was usually to be seen at blossoms below the road.

Macroglossum heliophila Boisduval (Plate 3, Figs. 5 and 6)

KF (2), PSO (29), PC (1), L (1), VP (2), SH (1), TMT (1) *(37)*. Easy to identify in well marked specimens by the dark underside and pale grey medial band on the forewing upperside. It is a variable insect and less well marked or worn specimens can only be positively identified by examining the genitalia.

Bascombe and Young have reared this species on *Psychotria rubra* (Rubiaceae) in Hong Kong.

Macroglossum mediovitta R. & J. (Plate 3, Figs. 7 and 8)

PSO (6) *(6)*. A widespread species which appears to be uncommon throughout its range. There are only five specimens in the National Collection in London. In Hong Kong it is certainly rather scarce, all those recorded during the present survey having been taken at *Duranta repens;* one at dawn on 11.viii.90, two at dawn on 1.ix.90 and another at 0850 hours the same morning when the sun was well up, one at dusk on 4.ix.90 and the last at dawn the following morning. The pale forewing band varies considerably, from being almost broken centrally, like that illustrated, to being 1.5mm wide. Other collectors in Hong Kong have taken the species at light (Bascombe, Tai Po Kau, 26.ix.80 and Ballantine, Pak Sha O, ix.86). Two specimens have been deposited in the British Museum (NH).

The species was not known to Mell and does not seem to have been recorded from China previously.

Macroglossum variegatum R. & J. (Plate 4, Figs. 1 and 2)

PSO (38), PC (4), L (14), VP (27), TMT (2) *(95)*. Together with *pyrrhosticta* and *fritzei,* this is one of the commonest *Macroglossum* species in Hong Kong with most examples taken nectaring at *Duranta repens;* only six individuals were taken at light (Pak Sha O, 14.xi.89; Ping Chau Island 9 - 15.ix.89, 22.ix.90; Tung Chung, Lantau Island 1.iv.90; Tai

Mong Tsai 8.xi.90 (2)). For diagnostic notes see *pyrrhosticta*. Although it has been possible to allocate most specimens taken during the survey to *variegatum* or *pyrrhosticta,* some worn examples are more difficult; numbers of both species are therefore estimated. The genitalia of the specimen illustrated have been examined to confirm its identity; it has been deposited in the British Museum (NH).

Macroglossum fritzei R. & J. (Plate 5, Figs. 3 and 4)

KF (57), PSO (39), TPK (96), PC (1), L (32), VP (1), SH (11) *(237)*. It would be very difficult to confuse *fritzei* with any other *Macroglossum*. It is unusual in that it is the only *Macroglossum* species in Hong Kong which seems to be strongly attracted to light and seldom taken nectaring (see Table 2). Twenty-three and 31 individuals were trapped at Tai Po Kau on 22.v.90 and 13.vii.90 respectively and on 30.v.90 at Nam Shan Country Parks Offices just outside Mui Wo on Lantau Island, about 20 were seen flying around the outside security lights. Although it usually comes early to the light, it has been seen flying as late as 2200 hours (Pak Sha O, 11.v.907), 2230 hours (Kadoorie Farm, 31.vii.89) and 2320 hours (Shek Hang, 20.v.90). Only ten individuals were taken nectaring at *Duranta* at Pak Sha O (8), Tung Chung, Lantau Island (1) and Victoria Peak (1).

At the time of Rothschild & Jordan (1903: 654) *fritzei* was known only from the holotype female from Okinawa (vii.1891) in the Tring Museum, and a further female from Hong Kong in the British Museum (NH). The latter specimen has been examined and bears the label "HK. 1/92. JJW". The species is still not well represented in the British Museum (NH) and a series has been deposited there.

Macroglossum hunanensis Chu and Wang, described from Hainan Island, is clearly *fritzei* and was synonymised by Inoue (1990: 2-3).

Macroglossum sylvia Boisduval

L (1) *(1)*. A single fresh female *sylvia* was taken at Tung Chung, Lantau Island on 18.x.90 nectaring at *Duranta repens*. It is the only *Macroglossum* species from Hong Kong not illustrated and this is due to the fact that it was not identified until the author's return to the UK. It is a much scarcer species than *corythus* throughout its range (Kitching, *pers. comm.*).

Rothschild & Jordan (1903: 658) say, "Yellow area of hindwing below reduced, not extending so close to distal margin as in most specimens of *corythus,* more sharply defined distally" but this is not a reliable feature (Holloway 1987: 165). Fresh specimens can easily be separated by the colour of the fan and abdomen underside, which in *corythus* is chestnut brown and in *sylvia* very dark brown with light greasy or white median abdominal patches (Kitching, *pers. comm.*). Unfortunately this is less useful in worn or greasy specimens.

Mell (1922) does not mention this species.

Macroglossum corythus luteata Butler (Plate 2, Figs. 1 and 2)

KF (1), PSO (36), TPK (4), PC (11), L (3), VP (10), LKT (1) *(66)*. This common species has been seen flying at more hours of the day and night than any other *Macroglossum* in Hong Kong. Generally the last species to leave the *Duranta* bush after dawn, it has been recorded flying at 1020 hours (Pak Sha O, 12.viii.90), 1145 hours (Pak Sha O, 18.vii.90 at *Lantana*) and at light at 2305 hours (Tai Po Kau, 6.v.90 (2)), 0130 hours (Ping Chau Island, 22.ix.90), 0200 hours (Ping Chau Island, 17.ix.90) 0410 hours (Tai O Country Park Management Centre, Lantau Island, 18.x.90) and 0535 hours (Ping Chau Island, 18.ix.90). It has been seen feeding at *Duranta, Lantana* and *Ixora*. A specimen taken at Pak Sha O on 18,vii,90 had very tattered forewings, one hindwing completely missing and ca 60% of the second hindwing missing, yet seemed able to hover and feed without difficulty.

Bascombe has bred this species in Hong Kong on *Paederia scandens* (Rubiaceae).

Macroglossum passalus passalus Drury (Plate 2, Figs 2 and 4)

PSO (15), TPK (1) *(16)*. Only three specimens came to light, two at Pak Sha O on 5.viii.89 and 20.iv.90 respectively and the third flew to light at 1940 hours (shortly after dusk) at Tai Po Kau on 13.vii.90. Of the remainder, one was taken at *Lantana* at dusk on 6.vii.90 and the rest at *Duranta* at dusk and dawn during August and September 1990.

Bascombe has reared *passalus* on *Daphniphyllum calycinum* (Daphniphyllaceae) in Hong Kong.

Macroglossum mitchelli imperator Butler (Plate 2, Fig. 5 and 6)

KF (1), TPK (1) *(2)*. Single specimens came to light at Tai Po Kau on 28.iii.90 and Kadoorie Farm on 14.v.90. No other Hong Kong specimens are known.

Mell (1922: 272) recorded this as a rare member of the genus in S. China, finding only three specimens in 12 years in forested mountain areas above 1,000 feet.

Hippotion velox Fabr.

L (1) *(1)*. On 29.v.90 a single *velox* came to light near Tung Chung on Lantau Island. Although found throughout the Oriental and Australian Regions (D'Abrera 1986: 189), this seems to be the first record for China. It is not mentioned by Mell (1922) or Chu and Wang (1980).

Hippotion celerio L.

KF (1) *(1)*. One specimen of this very widespread species came to light at 2350 hours on 29.ix.90 at Kadoorie Farm. It has been recorded from Szechwan Province in China by Chu and Wang (1980: 70) but this seems to be the only specimen known from Hong Kong.

There is a single specimen of *celerio* in the Guangdong Entomological Institute, Guangzhou, apparently taken in Guangdong Province in October 1983. It was recorded for the first time in Japan in 1988 (Tanida, 1990).

Hippotion echeclus Boisduval

A specimen of *echeclus,* somewhat faded but otherwise in good condition, was found in the small Hong Kong University collection of moths and is now in coll. Tennent. It bears no data label. All the collection is thought to be from Hong Kong and the bulk of it was formed by Hill during the periods 1960-65 and 1973-80. Hill (*pers. comm.*) does not recall the specimen in question but thinks it very likely that it originated from Pokfulam on Hong Kong Island, where most of his collecting was done. No other Hong Kong specimens are known. It was not known to Mell (1922).

Hippotion rafflesii Butler

KF (1), PSO (163), TPK (2). PC (16), L (70), SK (1) *(252).* This, the next species, and *Hippotion boerhaviae* are almost impossible to separate with any certainty other than by genitalic examination. *Rafflesii* is often slightly larger than the other two and has a rather browner forewing. The anal angle of the hindwing tends to be brownish and only slightly lighter than the marginal brown band whereas, in the other two species this area has a pale cream/off-white patch (Kitching, *pers. comm.*). These features do not always apply. The presence of *rafflesii* and *rosetta* in Hong Kong has been confirmed by genitalic examination and specimens have been deposited at the British Museum (NH). Although numbers of both species taken during this survey are provided they are, of necessity, only estimates since to be certain would mean dissecting every specimen.

Of those recorded during the survey nine were taken nectaring at *Ixora* (Pak Sha O, 3.viii.90, 18.viii.90) and *Duranta* (Pak Sha O, 3.viii.90, 11.viii.90, 10.x.90, 14.x.90 (2), 7.xi.90 and Tung Chung, Lantau Island, 18.x.90).

Hippotion rosetta Swinhoe

KF (3), PSO (13), PC (29), L (24), VP (1), TMT (2) *(72).* This species was listed by some authors (e.g. D'Abrera 1986: 190)) as *depictum* Dupont and synonymised by Holloway (1987: 172). It is apparently much less common than *rafflesii.* Although most prolific from April to September both species came to light in every month of the year except February, sometimes in large numbers and at all hours. On 1.vi.90 at Tung Chung on Lantau Island, a total of 53 specimens (of both this and the previous species) entered the trap before 0300 hours; the following night there were 20 specimens, all after midnight. Specimens have also been taken feeding at

Lantana (Pak Sha O, 4.viii.89), *Duranta* (Pak Sha O, 11.viii.90, 24.viii.90, 10.x.90,14.x.90, Tung Chung, Lantau Island, 18.x.90) and *Ixora* (Pak Sha O, 3.viii.90, 24.viii.90). These are all records of single specimens; the remainder came to light.

Examination of a large number of *Hippotion* specimens has failed to establish the presence of *boerhaviae* in Hong Kong. For a taxonomic discussion on the differences between *rosetta* and *boerhaviae* see Holloway (1987: 172). *Boerhaviae* has been recorded a number of times from the Ryukyu Islands (Inoue, 1982: 321) but the specimens have recently been found to be *rosetta* (Inoue, 1989: 91).

Theretra nessus Drury

KF (3), PSO (186), TPK (10), PC (28), L (10), SH (1), TMT (2) *(240)*. Common and widespread. Two examples taken on 19.xi.89 were the last "large" hawk moths seen that year. It has been seen in every month of the year with the exception of December, January and February. It comes readily to light and has also been seen shortly after dawn feeding at *Pumeria rubra* (Apocynaceae) (Frangipani).

Theretra boisduvalii Bugnion

TPK (1) *(1)*. Mis-spelt by many authors, including Rothschild & Jordan (1903: 767) and D'Abrera (1986: 194) as *boisduvali,* this species does not appear to have been known from China by Mell or Chu and Wang although it is found in Taiwan (Inoue 1973: 126). A single specimen which came to light at Tai Po Kau on 13.viii.90 appears to be the only record for Hong Kong and for China.

Theretra clotho clotho Drury

KF (19), PSO (61), TPK (4), PC (2), L (2), SH (2) *(90)*. A common and widespread species found from April to October.

Bascombe has reared it on *Saurauia tristyla* (Actinidiaceae) in Hong Kong.

Theretra latreillii lucasii Walker

KF (6), PSO (73), TPK (7), PC (5), SH (12), LKT (1), SHK (1), SK (1) *(110)*. Both the species and subspecies name of this common and widespread insect have been mis-spelt as *latreillei lucasi* by a number of authors, including Rothschild & Jordan (1903: 772) and D'Abrera (1986: 196), although Inoue (1973: 127) does give the original spelling of *lucasii*.

It is a variable species with a distribution from Sri Lanka to the Papuan subregion. Rothschild & Jordan (1903: 772) say there are "two subspecies which intergrade completely" (!) and, although the species is generally dark in the west and paler in the east, there are individuals in the National Collection from each end of the geographical area which could equally well

come from the other. Mell (1922: 297) described seasonal forms *distincta* and *montana* from S. China although there is no difference, beyond individual variation, in seasonal forms in Hong Kong.
Bascombe has reared larvae on *Saurauia tristyla* (Actinidiaceae), *Melia azedarach* (Meliaceae), *Ampelopsis brevipedunculata* and *A. cantoniensis* (Vitaceae) in Hong Kong.

Theretra alecto L.
TPK (1), L (1) *(2)*. A fresh specimen came to light at Tai Po Kau at 0010 hours on 30.iii.90 and a very worn example came to light at Tung Chung, Lantau Island, on 1.vi.90. Ballantine took a fresh specimen at Pak Sha O on 19.v.85 and there is a specimen in the Hong Kong University collection, bearing no data label but probably taken by Hill on Hong Kong Island in the 1970s. No other specimens from Hong Kong are known.

Mell (1922: 299) found ova and larvae in Guangdong. There are three specimens in the Guangdong Entomological Institute in Guangzhou. one was taken on Hainan Island in May 1983 and the other two are from Guangdong Province taken in October 1983.

Theretra suffusa Walker
KF (2), PSO (58), TPK (3), SH (1), STK (1), SK (2) *(67)*. This attractive species was found during the survey from April to September flying in fair numbers at Pak Sha O from 24.iv.90 in fresh condition. It was usually fairly early at light, often being one of the first sphingids to arrive.

Mell (1922: 302) records it from Hong Kong.

Theretra oldenlandiae F.
Apparently very much scarcer than *silhetensis* throughout its range, only two specimens of *oldenlandiae* are known from Hong Kong. They are in the Agriculture & Fisheries Department collection at Tai Lung Farm amongst 14 specimens of *silhetensis* and bear data labels "vi.1964" and "vi.1967".

There are two specimens each in the collections of the Guangdong Entomological Institute, Guangzhou, and the Zhongshan (Sun Yatsen) University, Guangzhou; the three bearing data labels are from the area of Guangzhou and in each case they reside amongst large numbers of *silhetensis*.

Theretra silhetensis silhetensis Walker
PSO (14), PC (1), L (6), STK (1) *(22)*. All specimens seen during this survey were taken at light from April to October.

Theretra pallicosta Walker
KF (10), PSO (16), TPK (12), PC (1), L (1), SH (3), STK (1) *(44)*. Widespread throughout the Territory but never seen in large numbers. April to September.

Pergesa acteus Cramer

KF (1), PSO (5), PC (1), L (1), W (1) *(9)*. The first specimen of this species seen during the survey was a fresh example found clinging to the front door at the entrance to the author's block of flats in Wanchai, Hong Kong Island, at 1500 hours on 6.viii.89; presumably having been attracted by the security lights the previous night. One was taken feeding at *Ixora* shortly after dusk at Pak Sha O on 11.viii.90, oblivious of the m.v. lamp some ten feet away and all others were taken at light.

Rothschild & Jordan (1903: 790) mention *Panacra butleri* Rothschild which they say was based on a "defective" specimen of this species "in which the green colour has changed into reddish tawny". A number of specimens where the green suffusion on the forewing seems to have faded into a reddish colour, or almost disappeared altogether, have been examined and in some cases the specimens appear fairly fresh. Other, less fresh, specimens often still appear green. Perhaps "*butleri*" is a natural form; this could be confirmed by breeding experiments.

Bascombe has reared the species on *Alocasia odora* (Araceae) in Hong Kong and Lau (*pers. comm.*) has found it in large numbers at Tai Lung Farm.

Rhagastis albomarginatus dichroae Mell.

KF (1), TPK (1), L (6) *(54)*. This does not seem to be a common species in Hong Kong and 46 of the total recorded were seen at Tai Po Kau on 28.iii.90, 30.iii.90 and 3.iv.90, a period of particularly wet and misty weather when other species not often seen, were found in quite large numbers (*Ambulyx sericeipennis, A. liturata, Dahira rubiginosa*). The remainder were taken at Tai Po Kau (30.vii.89), Kadoorie Farm (31.iii.90), Tung Chung, Lantau Island (1.vi.90) and Wong Lung Hang, near Tung Chung (2.vi.90 (4), 4.vi.90).

Bascombe has reared this species on *Aleurites montana* (Euphorbiaceae) in Hong Kong.

Cechenena aegrota Butler

KF (15), PSO (12), TPK (33), L (1), SH (4), STK (5), SK (2) *(72)*. A fairly common species although sporadic in appearance during this survey. Seen only in the months of April, May, July and September.

Mell (1922) does not appear to have seen *aegrota*.

ERRONEOUS RECORDS

Acherontia atropos L.

Hill, Hore and Thornton (1982: plate 307) illustrate two *Acherontia* which they identify as *atropos*. Hill and Cheung (1988: 87) illustrate a third specimen. The specimens are clearly *styx*, as are all non-*lachesis* specimens in the Hong Kong University collection. There is a specimen of *Acherontia*

lachesis in the University collection which bears the label "*Acherontia atropos*. D S Hill det. 1976".

There is a specimen of *styx* in the Tai Lung Agricultural Station collection labelled "on wing. Tai Lung. P Y So. 31.5.66"; a second label reads "*Acherontia atropos* L. J D Bradley. det 1986". It is clearly *styx*. If it was caught on the wing this is very unusual.

Sphinx pinastri L.

A specimen of *Psilogramma increta* labelled *Hyloicus pinastri* is illustrated by Hill, Hore and Thornton (1982: plate 313); it resides in the Hong Kong University collection and has been examined.

Hemaris tityus L.

Hemeris (sic) *tityus* is said by Hill, Hore and Thornton (1982: 286) to occur in Hong Kong. It is not found in the Territory.

Daphnis nerii L.

This, listed as *Daphnis neu* (sic), is one of a number of Sphingids eroneously recorded by Hill, Hore and Thornton (1982: 285) as being seen regularly in Hong Kong. A single *Daphnis* specimen in the Hong Kong University collection, almost certainly the source of this comment, is *hypothous*.

Macroglossum saga Butler

There is a specimen of *Macroglossum corythus* in the Hong Kong University collection labelled "*Macroglossum saga*. D.S. Hill det. 1976"; this is presumably the source of the comment by Hill, Hore and Thornton (1982: 286) that *saga* is found regularly in Hong Kong. This species is not yet known from Hong Kong although there is no reason why it should not be present. Its distribution is Northern India to China and Japan (D'Abrera 1986: 163).

Hyles lineata F.

Hill, Hore and Thornton (1982: plate 312) illustrate a specimen which they identify as this species; the same specimen is also illustrated under this name by Hill and Cheung (1988: 87). The specimen is actually either *Hippotion rosetta* or *H. rafflesii* — more likely the latter.

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Postscript

At 11.00am on the 16th November 1991, a male *Ambulyx subocellata* (Felder) was found by Mr Kent H-K Li on the pavement outside a building site adjacent to the Hong Kong Peak Tram Terminus. It had been apparently trodden on although it was still quite fresh; presumably it had been attracted the previous night to fluorescent security lights present at the

site. This is the first record of *subocellata* for the Territory and brings the known total of Sphingid species to 64.

My thanks to Kent H-K Li for supplying the data and colour prints of the specimen.

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COLOUR PLATES

Legend

Plate 1.

Fig. 1. *Xylocopa phalothorax* female. Pak Sha O. 6.ix.90 at *D. repens* (coll. Tennent).

Fig. 2. *Sataspes tagalica* male. She Shan (Lam Tsuen Valley). 26.vi.77. A. Ballantine (coll. Tennent).

Fig. 3. *Xylocopa* sp. female. Pak Sha O. 8.ix.90 at *D. repens* (coll. Tennent).

Fig. 4. *Sataspes tagalica* female. Pak Sha O. 18.viii.90 at *D. repens* (coll. Tennent).

Figs. 5/6. *Macroglossum pyrrhosticta* male. Hung Shui Kiu (Yuen Long). 28.i.89. K. Li (coll. British Museum (NH).

Plate 2.

Figs. 1/2. *Macroglossum corythus* female. Ping Chau Island. 17.ix.90 at light (coll. Tennent).

Figs. 3/4. *Macroglossum passalus* female. Pak Sha O. 11.viii.90 at *Lantana* (coll. Tennent).

Figs. 5/6. *Macroglossum mitchelli imperator* male. Kadoorie Farm. 14.v.90 at light (coll. Tennent).

Plate 3.

Figs. 1/2. *Macroglossum bombylans* female. Victoria Peak. 23.x.90 at *D. repens* (coll. Tennent).

Figs. 3/4. *Macroglossum insipida* male. Pak Sha O. 15.ix.90 at *D. repens* (coll. Tennent).

Figs. 5/6. *Macroglossum heliophila* female. Shek Hang (Sai Kung). 20.iv.90 at light (coll. Tennent).

Figs. 7/8. *Macroglossum mediovitta* male. Pak Sha O. 1.ix.90 at *D. repens* (coll. Tennent).

Plate 4.

Figs. 1/2. *Macroglossum variegatum* male. Pak Sha O. 25.viii.90 at *D. repens* (coll. British Museum (NH)).

Figs. 3/4. *Macroglossum sitiene* male. Tung Chung, Lantau Island. 18.viii.90 at *D. repens* (coll. Tennent).

Figs. 5/6. *Macroglossum pyrrhosticta* male. Sek Kong. 10.v.90. Bred from ova coll. British Museum (NH)).

Figs. 7/8. *Macroglossum belis* female. Kadoorie Farm. 14.v.90 at light (coll. Tennent).

Plate 5.

Figs. 1/2. *Macroglossum troglodytus* male. Victoria Peak. 29.x.90 at *D. repens* (coll. Tennent).

Figs. 3/4. *Macroglossum fritzei* male. Kadoorie Farm. 11.v.90 at light (coll. Tennent).

Figs. 5/6. *Macroglossum pyrrhosticta* male. Pak Sha O. 11.viii.90 at *D. repens* (coll. British Museum (NH).

Figs. 7/8. *Macroglossum stellatarum* female. Victoria Peak. 29.xi.90 at *D. repens* (coll. Tennent).

(Note: Colour plates prepared and printed for the author in Hong Kong.)

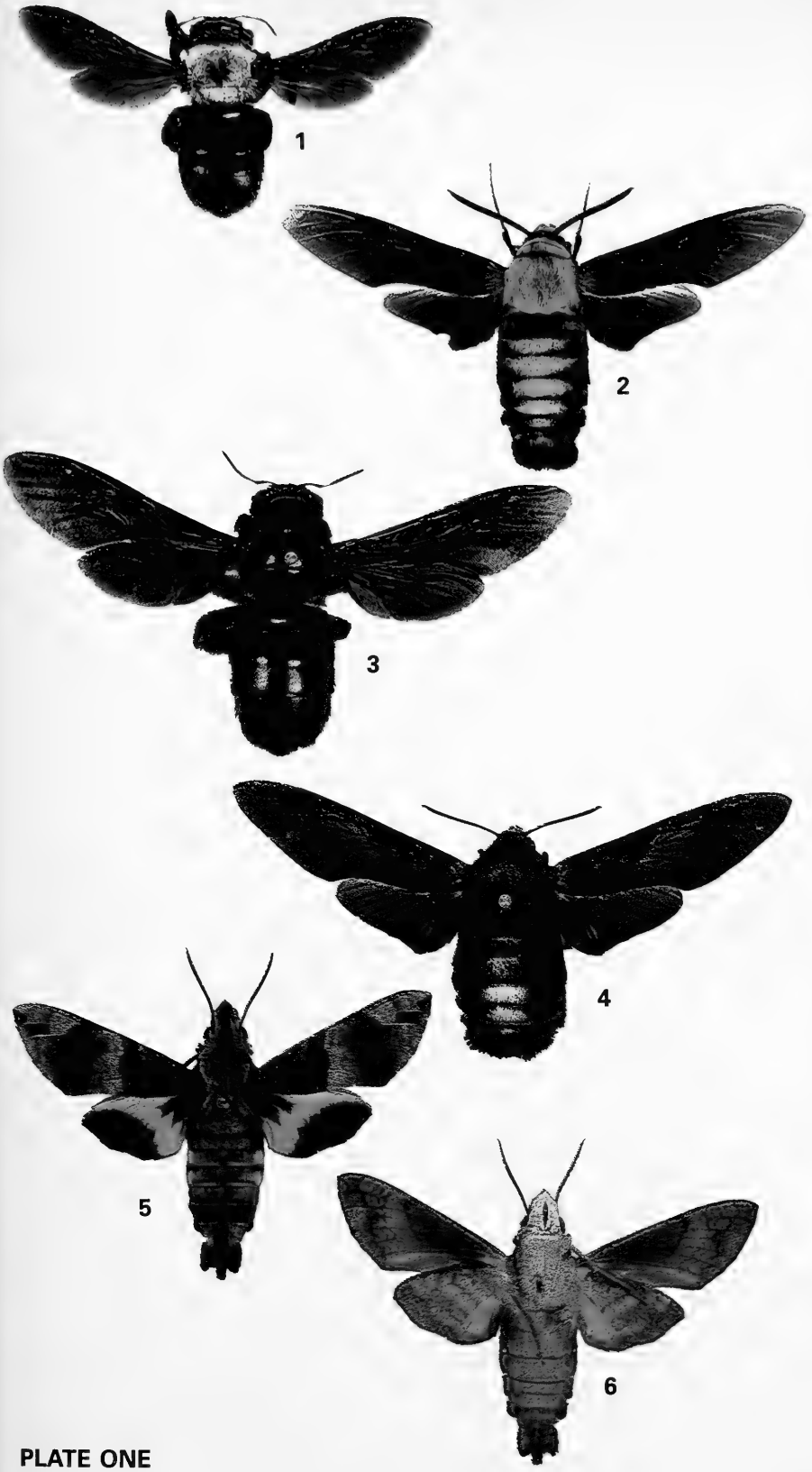

PLATE ONE

PLATE TWO

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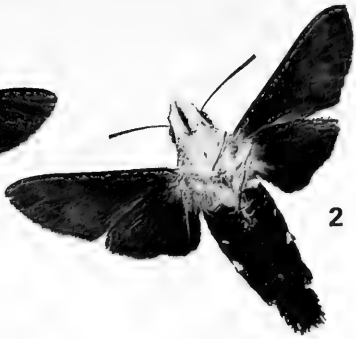

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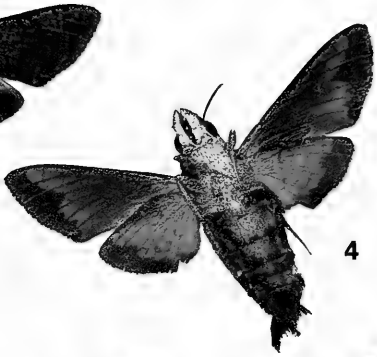

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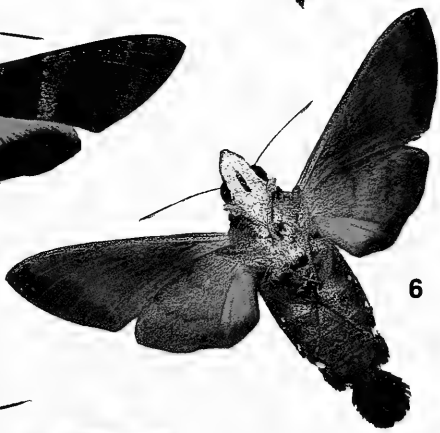

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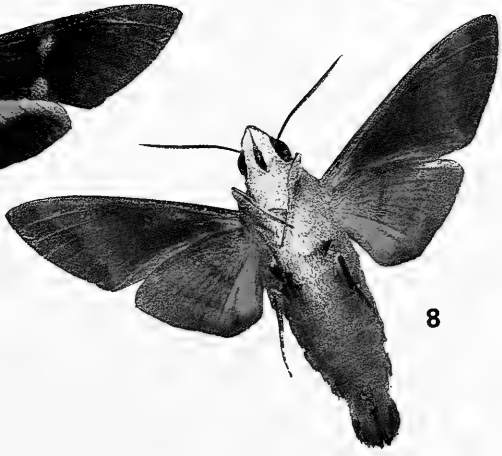

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PLATE THREE

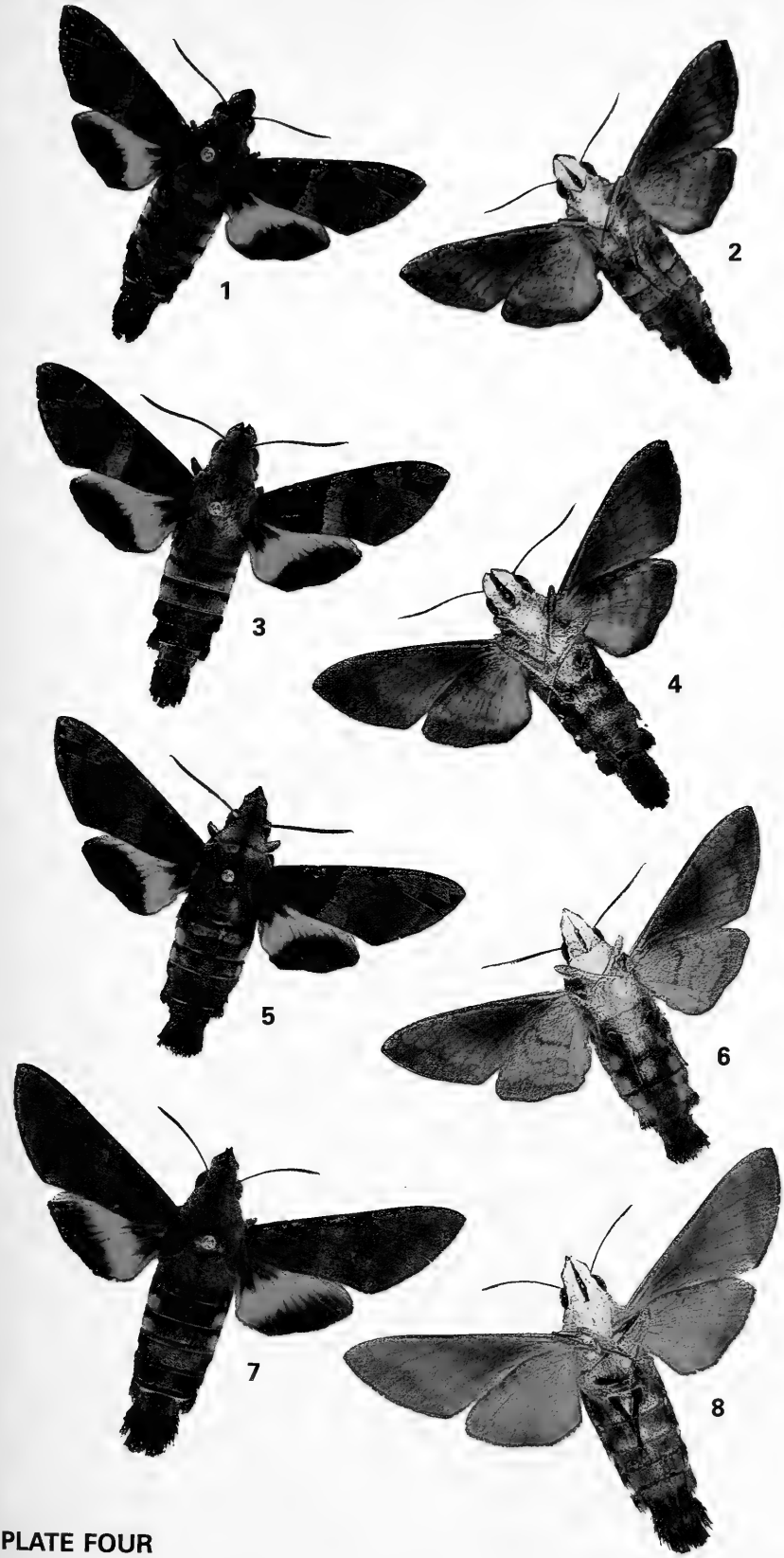

PLATE FOUR

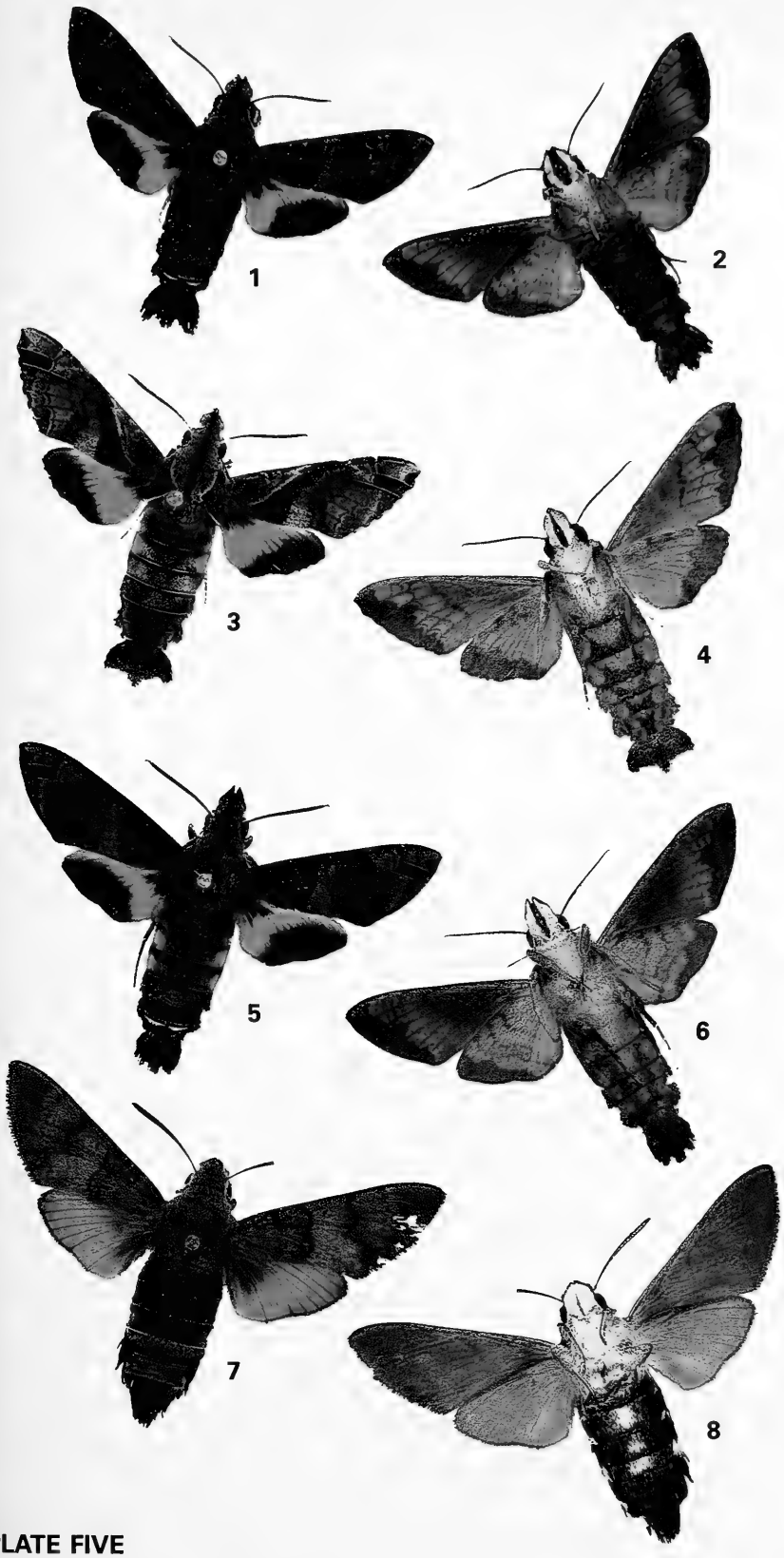

PLATE FIVE

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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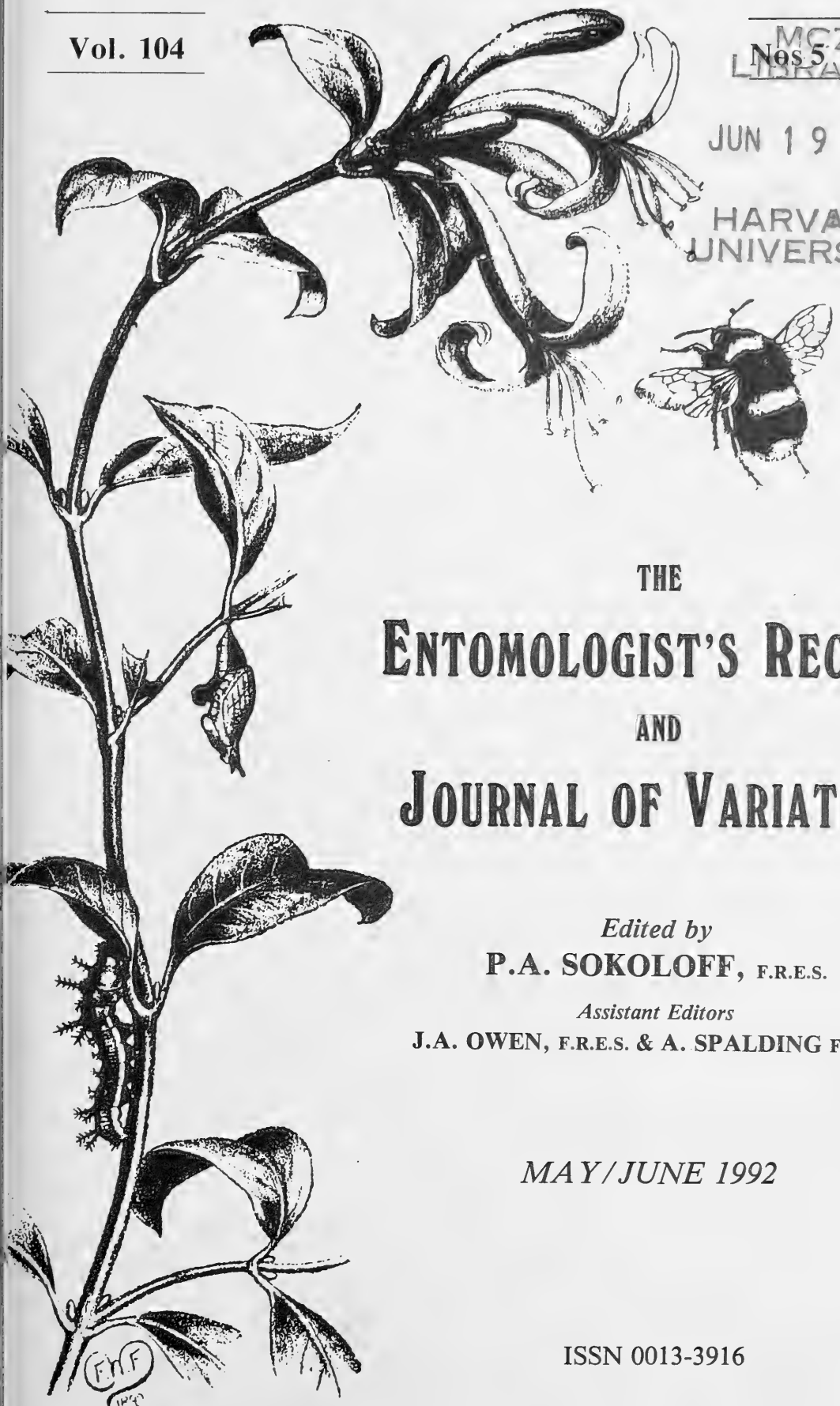

THE ENTOMOLOGIST'S RECORD AND JOURNAL OF VARIATION

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EXTINCT AND VERY RARE BRITISH LONGHORN BEETLES (COL.: CERAMBYCIDAE AND LAMIIDAE)

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Introduction

WHAT IS so remarkable about the presence, indigenous or otherwise, of our evidently extinct two species of large, handsome *Cerambyx* beetles is that the information about both, quite satisfactorily and accurately provided by Stephens (1839), was for some strange reason transposed. Thus, the data for *C. cerdo* L., catalogued by him in 1829 as an introduction, a view to which he adhered two years later in his *Mandibulata,* should have applied to *Cerambyx scopolii* Füssly, and the localities given for the latter should have referred to *C. cerdo* L. These errors were to be repeated in most of the subsequent 19th and 20th century publications devoted to the Coleoptera until Allen (1968) drew attention to these transpositions. Mr Allen brought this confusion of data to coleopterists' notice shortly after the amazing discovery of a sub-fossil specimen of *C. cerdo* in Cambridgeshire (Duffy, 1968).

To the comments above it is relevant to add that Donisthorpe in his "Notes . . ." (1898) dismissed forthrightly both *C. cerdo* L. and *C. scopolii* Füssly as importations to this country; but forty years later in his account of the Coleoptera found in Cambridgeshire (1938), he had evidently changed views, noting that the former species had occurred in the Isle of Ely.

It is assumed that by then Donisthorpe had spotted the original errors and that the *Cerambyx cerdo* L. in his Cambridgeshire lists is the true *cerdo* L. of our modern catalogues: should that not be so, then he has repeated the secondary confusion over specific names to which Allen, *op. cit.* also referred.

Cerambyx cerdo L.

This is the larger of our two extinct species of *Cerambyx,* indeed one of the largest European Longhorn beetles, measuring up to well over 5cm long. On the Continent the larva of the beetle is associated with ash, beech, crab-apple, elm, false acacia, hornbeam, oak, sweet chestnut, walnut and willow. Oaks, however, are the favourite pabulum, especially isolated trees such as those growing on the edges of woodlands and in parks, to which material damage is done as the tunnellings are so broad and long.

Abroad the Hymenopterous parasites include *Doryctes longicaudis* Giraud, *Ephialtes manifestator* L., *E. tuberculatus* Fourcr., *Megarhyssa superba* Schrk., *Odontocolon appendiculatus* Grav., *Rhyssa amoena* F., *R. persuasoria* L. and *Tynandricus rudnevi* Novicki. The Arachnid, *Psocides,* is also a parasite of the larva. *Cossus* larvae, although not

predators, will readily bite and injure young immature larvae of *cerdo* when encountered. Earlier stages of the beetle, including the pupa, are subject to a high percentage of fungal attacks (Rudnev, 1935). Pupation takes place in the late summer, the pupa overwinters and the imago emerges in May; alternatively, lately ecloded imagines will overwinter. Metamorphosis is variable depending upon the condition of the brood tree: if it is live, the cycle is completed in two to three years; if the wood is dead, it will stretch to some five years (Toman & Felix, 1980).

Besides the host trees enumerated above *Cerambyx* has been recorded with lignite (Linstow, 1905). This is of some interest because the semi-fossil Cambridgeshire specimens about to be discussed were found in trees estimated to be between 3600 - 4000 years old. Did these particular beetles attack already very ancient trees or were they contemporaneous with them? It has not been practicable to Carbon-14 date the insects without irreparably damaging them.

It should be understood that the original data given here are the "reversed" ones as pointed out by Allen *supra*.

"On willows: Isle of Ely: 6." (June), (Stephens, 1839). It is to be observed that Stephens writes *on* and not *in* such host trees. In the copy in the Library of the Royal Entomological Society of Stephens' earlier work (1831), there is a hand-written note to the same effect with an additional comment that the beetle was collected by "C. Darwin Esq." The Stephensian record is reiterated by Donisthorpe (1898), Fowler (1890), Morley (1943) *et al.*, but curiously, Duffy (1968) — surely a *lapsus memoriae* — remarked that Fowler, *op. cit.*, "apparently saw fit to ignore the genus altogether . . . Neither is there any mention of this genus in the supplement . . ." (Fowler & Donisthorpe, 1913). Allen (1968) draws attention to this oversight.

In March 1965, Mr N.E.J. Goodchild discovered a well-preserved example of *Cerambyx cerdo* in a branch of a very long trunk of "bog oak" near Isleham, Ely, Cambridgeshire. Full details of this splendid find, together with photographs of the beetle, were published three years later (Duffy, 1968).

A decade later two more almost perfect specimens of *C. cerdo* were found in another shorter piece of bog oak at Ramsey Heights, Cambridgeshire (Harding & Plant, 1978). Other sections of bog oak revealed the presence of large galleries, without much doubt the workings of *C. cerdo,* but in that case no insect was discovered. These two important records unquestionably confirm the 1839 Stephensian ones from the Isle of Ely.

It is hoped that further searches for and examination of these ancient tree trunks when and as they are brought to the surface by the plough will lead to the discovery of yet more examples of *Cerambyx.*

The three beetles have been deposited in the national collections, British Museum (Natural History), together with examples of the host trees

exhibiting an empty pupal chamber and in the case of the Ramsey Heights specimens, larval sloughs, and what was considered to be contemparary with the beetles, examples of an Acarid, *Histiogaster,* with which both *cerdo* spp. were infested.

References to *C. cerdo* in the British catalogues are as follows:— Introduced (Stephens, 1829); introduced (Curtis, 1837); thereafter there is a long gap until the species is included by Beare (1930) as indigenous; introduced (Kloet & Hincks, 1945); and in our latest catalogue it is marked as (native but) extinct (Kloet & Hincks, 1977).

C. scopolii Füssly

The evidence that this species was formerly indigenous is not overwhelming. Bearing in mind, however, that it occurred very sparingly until perhaps the beginning of this century in old woods and copses in which well-established trees once grew before they were felled by urban developers, it is possible that a few specimens, whatever their origins, appeared to have bred here, only to be captured, dead or alive and, in the space of half a century, eliminated from our fauna.

In Europe, whence it is sometimes imported into this country, the larva is found (as have the few adults taken here) in isolated trees, such as ash, beech, birch, crab-apple, elm, hornbeam, maple, oak, *Ribes* (Escherich, 1923), sour cherry, sweet chestnut, wild cherry.

Abroad Hymenopterous larval parasites include *Ephialtes mesocentrus* Grav., *E. tuberculatus* Fourcr., *Helcon dentatus* F. and *Mesoleptus coxalis* Bris.

Pupation occurs either in August or September, ecloding beetles then overwintering, or in the following spring, when the adults emerge and are about from April until July. The life cycle varies from two to three years. Unlike *C. cerdo, scopolii* is essentially diurnal; it flies readily in bright sunshine and is more often than not found on flowering wild plants.

In England, the chronological history of this species is as follows:— "A pair . . . said to have been captured in the west of England. Mr [Abel] Ingpen has a specimen which he is informed was taken at Colney-hatch wood, near London." (Stephens, 1831). The first datum above is less circumscribed and modified to Devonshire by Stephens in his Manual (1839): this in turn is further localised to an estate near Kingsbridge, Devon, where the species was reputedly taken, *circa* 1809 (Morley, 1943).

Spry and Shuckard (1840) illustrate *scopolii,* pl. 78, fig. 1, stating in their text, "One species," with, of course, the wrong data. Over thirty years later more detailed information was published regarding this beetle (Smith, 1873-74); after referring to the Stephensian records and being assured that the Ingpen capture in Colney Hatch was authentic, Smith added that E.W. Janson found a dead example in an old hornbeam in the same locality some years earlier. Colney Hatch wood, he continued, had been cut down over twenty years previously, but other ancient woods, such as Walker's and

Southgate, close to Colney Hatch, were still extant in his day, and further, a few miles from the former, a live specimen was found by Arthur Cates in a grove at Kentish Town in July. 1873. This insect went into the Smith collection. In the same month another dead specimen was found squashed in Camden Town, and yet another in Wood Green. These are all north London localities. Smith decided, perhaps rightly, that these were all relict beetles on the verge of extinction.

Fowler (1890) also repeats Stephens' original records, and adds that the pabulum is oak. One more example was found in Gray's Inn Square in June, 1902, *in coll.* Bates (Fowler & Donisthorpe, 1913).

All the above data, save the last, are re-stated by Morley (1943). Kaufmann (1946) in discussing the following species expressed the view that *scopolii* may have been indigenous during the 19th century, but that it was by now extinct and unlikely to be an encounterable native (see also Duffy, 1968).

Finally, one or possibly two examples of *scopolii* were found in an old tree by a member of the Janson family, *teste* the late W.H. Janson, in St George's Fields (Allen, 1968). This locality like the others no longer exists, but it was formerly part of Hyde Park, W.1, Mr Allen *in litt.*, where until recent times a number of old trees once stood.

From these records it may be concluded that *C. scopolii* led a transitory, precarious existence in ancient growths in the Metropolis, outer suburbia and regions to the north of London, not fostered by the coleopterists of the day.

C. scopolii is thus listed in the British catalogues:— Stephens (1829): not indigenous; Curtis (1837): introduced; Beare (1930): a native species; Kloet & Hincks (1945): introduced; Kloet & Hincks (1977): re-instated as an indigene.

Plagionotus arcuatus L.

This, the Great Wasp Beetle, was native to this country from at least the second half of the 18th century; the poet, George Crabbe (1795), lists it as flying "in the woods below Belvoir" (LR). It is figured by Martyn (1792) and by Donovan (1794), who described it as ". . . the rarest species of the genus . . . we have in England . . .".

It was known as well to Marsham (1802) and illustrated by Samouelle (1819), who commented that *arcuatus* was found on tree trunks in this country. Stephens (1831) regarded it as rather local; he found several in Hertfordshire and gives other localities, notably Chislehurst, where it was abundant.

P. arcuatus was clearly confined to the south of England; a number of northern localities are recorded by our early entomologists, but they are obviously introductions, imported in logs and other timber: that was the opinion by the start of the present century (Newbery, 1905), but refuted insofar as the southern finds were conerned, with references to Dr W. Bond *et al.* (Fowler & Donisthorpe, 1913).

Convincing records of the species as an erstwhile indigenous species are confined to Essex, Kent and Middlesex.

The larva occurs in beech, chestnut, goat willow (Duffy is doubtful about this), hornbeam, oak, old fruit trees, *Prunus* sp., wild cherry.

Its Hymenopterous parasites include *Doryctes gallicus* Reich., *D. leucogaster* Nees, *Echthrus reluctatior* L., *Ephialtes abbreviatus* Thoms., *E. mesocentrus* Grav., *Helcon carinator* Nees, *H. dentator* F., *H. tardator* Nees, *Ipobracon nigrator* Zett., *Oncophanes lanceolator* Nees, *Pseudovipio desertor* F., *Sichelia filiformis* Grav., *Xorides irrigator* F., *X. nitens* Grav.

Duffy (*op. cit.*) has suggested that heavily infested timber from abroad may eventually lead to re-establishment of *arcuatus* in this country.

Pupation occurs in spring; metamorphosis lasts two years.

The imago emerges in May and is found in the open until July, either resting on the host trees or their branches lying on the ground. They are very active, flying readily in the sunshine and are sometimes found browsing on flower heads.

Thanks, however, to the depredations of Dr Bond who came across an evidently well-established and flourishing, very large colony of *Plagionotus* in Hainault Forest in unstripped felled oak logs, first in 1829 (Bond, 1833), when he and his companion caught some hundred specimens; and again — and no doubt in the intervening years, though that is not stated — in 1836 (Bond, 1837), on which occasion he collected over two hundred further examples, not to mention "a great number of larva and pupae". (!) He, his fellow collectors, Dr Power and the Waterhouse brothers, and other Coleopterists almost certainly wiped out the locality between them. Thereafter notes on the occurrence of *arcuatus,* other than importations, are few and far between, although Cox (1874) still wrote of the beetle, "Moderately common." (!) Dr Power and the Waterhouses also took this insect in Epping Forest and the neighbourhood (Buck, 1955): that was over 120 years ago.

Whether, if ever, *P. arcuatus* succeeds, via imported free-flying specimens, in founding a new breeding colony somewhere in what remains of our native woodlands at present seems unlikely.

The beetle is catalogued as indigenous in all the British lists, but labelled as questionably extinct by Kloet and Hincks (1977).

Leptura virens L.

Nothing more of this beetle has been seen since Stephens' capture of two specimens in the Forest of Dean early last century, and it has been omitted from the British lists since Newbery and Sharp (1915). Mr Allen has suggested that *virens* should be included in the British catalogue but marked as an extinct species. Its history in this country is fully discussed by Kaufmann (1987).

Strangalia attenuata L.

There are only three Stephensian records of the finding of this Longhorn in Berkshire, south Essex and south Wiltshire, examples of which are in the national collections in the British Museum (Natural History) and the Hope Department, University of Oxford. Donisthorpe (1898) considered these specimens, in the Power collection (British Museum (NH), to be aberrant forms of *S. maculata* Poda; this is not so: they are genuine *attenuata* (Kaufmann, 1988). Marked as extinct (Kloet & Hincks, 1977).

Acmaeops collaris L.

Once a common species, it has been so relentlessly collected in the past that *collaris* is now confined to a few isolated areas in the March counties (Kaufmann, 1989); in consequence it figures on the endangered list (Shirt, 1987).

Strangalia revestita L.

Very few of this extraordinarily rare and elusive beetle exist; it is unquestionably a native beetle which turns up singly like a jack-in-the-box when least expected. It was last recorded from Surrey in 1971.

The larval pabulum is known to be the wild cherry, but no-one has yet succeeded in finding any of the early stages of *revestita* in this country despite the plethora of host trees (Kaufmann, 1988), nor is the full life cycle known abroad (Klausnitzer & Sander, 1981).

Its very scarcity here and infrequent occurrences have led in a sense to its own protection.

Obrium cantharinum L.

The position regarding this insect is equivocal: it is still listed as an encounterable species (Kloet & Hincks, 1977), but in fact has not been captured since the late 1920s. Details of its distribution and occurrence are summarised by Kaufmann (1947; 1985). To those particulars may be added that its larva is attacked by these Hymenoptera:— *Deuteroxorides albitarsus* Gr., *Ephialtes mesocentrus* Gr., *Spathius curvicaudis* Ratz. and *Xorides praecatorius* Gr. The presence in old orchards or flying around aspen trees of these parasitic insects might possibly be an indication of the presence, too, of this very rare species of *Obrium*.

Pyrrhidium sanguineum L.

Listed as a vulnerable species (Shirt, 1987), *sanguineum,* following its re-discovery forty years ago in Herefordshire, is spreading slowly in some Welsh localities (Kaufmann, 1990).

Lamia textor L.

A very vulnerable species (Shirt, 1987) crepuscular and difficult to find

because of its guarded habits, *Lamia* was last seen nearly forty years ago in the Main Argyll - west Perth region (*antea,* 1991: 73-74).

Oberea oculata L.

Having been so over-collected in the past, it comes as no surprise that this beetle is now on the endangered list (Shirt, 1987). Largely restricted to the Fens, *Oberea* was last observed (and photographed) eight years ago at Wicken Fen, Cambridgeshire (Shirt, 1987).

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***Psacadina zernyi* (Dipt.: Sciomyzidae) in Hampshire**

Specimens of *Psacadina zernyi* were taken by general sweeping on 29.v. and 14.vii.1990 at Black Dam, Old Basing, Basingstoke. The site lies on the River Lodden and comprises small amounts of fen and alder carr interspersed with scrub and grassland. Despite extensive collecting over the whole site the flies could only be found amongst the carr. I believe the current known localities for this fly are East Anglia and Surrey.— L. CLEMONS, 14 St John's Avenue, Sittingbourne, Kent.

***Pteromicra leucopeza* (Meigen) L. (Dipt.: Sciomyzidae) in south-east Kent.**

A single specimen of this rare fly was otained by general sweeping on the evening of 6th July 1989 at Long Wood, Dover. The occurrence of the species is in itself notable but its presence in mature chalk woodland is perhaps more surprising. The larvae of *leucopeza* develop in aquatic snails and Long Wood is some distance from substantial bodies of fresh water. One would not imagine the insect to be a particularly strong flier although it could conceivably have been seeking out damper localities. It may be that there are other more terrestrial host snails involved in the life cycle.— L. CLEMONS, 14 St John's Avenue, Sittingbourne, Kent.

The ghost of *gnaphalii* past

After reading Colin Pratt's Historical Summary (*Ent. Rec.* **104**: 9-17) I had thoughts of self-doubt. Had I found all of Wightman's relevant diary entries and had I copied them all correctly? It was probably the extended note written under 19th August 1939 that bothered me. It ran: "This species feeds in hot sun and needs sun to be healthy and also warm air at night. It comes up to feed at night and is then easier to see if you look at the plant, but I cannot consider it a night-feeder rather than a day-feeder, it is simply more confident at night. In the cages it feeds all day at intervals but always low down or concealed amongst leaves . . . after a dull day when the sun comes out I note they quickly mount the food and feed and as quickly go down again".

Curiously, as I read this I seemed to hear that old familiar voice "Can't think there is any mystery. That young fellow has answered his own riddle. He has clearly and correctly indicated the importance to the moth of wood clearance and especially of coppice cutting and he instanced the population increases that followed. But he is troubled why the species declined at other times when *Solidago* was still present: in my day we did not know that micro-habitat was so critical and that species then so common like *euphrosyne* needed its food in bare soil where there was maximum heat absorption. This of course fits *gnaphalii* like a glove. And for a species on the edge of its range that requirement was paramount".

But, I thought, how can we account for its absence from the Kent-Sussex border woods during the last century amongst other places? "Because it was always there, in an era of tough keepers and of collectors who did not know how to find it" rejoined the pragmatist. And its absence today? "The areas where *gnaphalii* was most successful were amongst the last to be worked for underwood in the traditional manner, while elsewhere the coppice and the overstories grew denser earlier. Since then modern sylviculture and neglect of traditional wood-working have resulted in thickets the length and breadth of the Home Counties". At this the voice became sad and weak as it faded.

So it really was habitat loss, I mused, but in the simple sense that the restricted woodlands that had always been the home of *gnaphalii* could no longer provide what the species so exactly needed. And these woods while now suitable for *camilla* were the graveyard of the shark. One could go on about *salicalis* and *lunaris* exploiting similar circumstances in the same area, if for a much shorter period, or reflect that the Laughton woods flanked the sole British site for *immorata,* also banished by the hand of man although through a different activity. Yet that would be to complicate things and I wondered instead whether entomological conundrums could be so simply answered. But then AJW usually had the answer in his forthright, simple way.— G.M. HAGGETT, Meadows End, Northacre, Caston, Norfolk NR17 1DG.

THE IMMIGRATION OF LEPIDOPTERA TO THE BRITISH ISLES IN 1990

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NINETEEN-NINETY turned out to be an exceptionally interesting year, owing mainly to the occurrence of a number of rare immigrants and species new to Britain. These included the Pyrales *Hellula undalis* F., which had its best year with six out of a total of 13 examples on record prior to 1990; the second specimen only of *Etiella zinckenella* Tr. (the first having been taken in 1989); and *Psammotis pulveralis* Hb., apparently the first for the country since about 1900. Among the Geometers, *Crocallis dardonaria* Donzel was new to Britain with two specimens, both from the Channel Isles; while a single *Peribatodes manuellaria* H.-S. from Kent was also new to our fauna. Of the Arctiinae, the appearance of the Crimson-speckled Footman (*Utetheisa pulchella* L.) with 30 imagines reported was a notable event, 1990 being its best year ever except 1961, its *annus mirabilis,* when more than 30 were recorded. Among the Noctuidae, *Spodoptera cilium* Guen. from Cornwall was new to Britain, and the second and third records of occurrence of *Ochropleura leucogaster* Freyer were likewise remarkable. *Cryphia algae* F. from Guernsey signalled the third British record of this species; a single *C. raptricula* D. & S. from Kent apparently represented the sixth British example; and the capture of *Grammodes stolida* F. at Crowborough, Sussex constituted the second British record of this southern European and African moth. An outstanding feature of 1990 was the appearance of the Long-tailed Blue (*Lampides boeticus* L.) in unprecedented numbers, totalling over 100 sightings, mostly in the London area, and the finding of a number of larvae.

Of the commoner migrant butterflies, *Colias croceus* Geof. totalled some 462 individuals, and showed 1990 to be the best year for the Clouded Yellow since 1983, and with the highest numbers (about 340) for any one county being recorded from Sussex. First noted on the 24th May in Guernsey (T.N.D. Peet per Austin, *Moths & Butterflies of Guernsey,* 1990, p.13), followed by one seen the 28th May at Milton Keynes, Buckinghamshire (D. Dey), then last at Old Kea Church, Cornwall, the 27th November (H. Jones per R.D. Penhalluric). The butterfly ranged widely, being reported from 18 counties (including Kerry, Cork, Down and Clare, Ireland) and Yorkshire (v.c. 64), where it reached furthest north at Pontefract the 2nd July (K.M. Mayall per P. Winter).

The Red Admiral (*Vanessa atalanta* L.) was first observed on 18th January, at Newtown, Isle of Wight (Knill-Jones, *Ent. Rec.* **102**: 197) and lastly on 25th November, at Dinton, Wiltshire (S. Palmer). It was widely distributed, being recorded from 22 English counties, as well as from Wales and Ireland, and from Scotland where it reached furthest north at Rendall,

Orkney (B. Ribbands per I. Lorimer). In west Scotland, 115 were counted on the Isle of Canna between 6th June and 27th September (J.L. Campbell); but in the north-east it was reported in relatively small numbers together with larvae, in Banffshire (R. Leverton) and Caithness (S. Swanson). At some localities, mainly in the south, it was noted in abundance. For instance, at Spurn, Yorkshire, about 400 were seen on 3rd and 4th September (B.R. Spence); and at a point some 35 miles at sea south-east of Plymouth, Devon on 17th October, a large number of "Red Admirals" estimated at between 400-500 individuals was seen (Pearce per Stokes, *Bull. Amat. ent. Soc.* **50**: 191). At Littlehampton, Sussex, on 2nd June, 14 *atalanta* accompanied by a number of *Cynthia cardui* were reported as "seen coming in off the sea" (per D. Dey).

The Painted Lady (*Cynthia cardui*) made a good showing with an overall total of about 1064 sightings. The first was seen on 1st March at Thorney Island, Sussex (C.B. Collins), then last on 3rd November at Cosham, Hampshire. The butterfly ranged widely, being recorded from 18 English counties, and extending to the Channel Isles and Ireland northwards to Scotland at Tarbert and Isle of Canna (J.L. Campbell), and Cornhill, Banffshire (R. Leverton). In Wales, reported from Pembrey Forest, Carmarthen, 9th March, in southerly winds as coming from "S. Azores" (per I.K. Morgan), and from Tintern, Monmouthshire (R. Haynes). Also observed, 22nd October, on a safety rail about 20 miles from Rosslare, on an outward ferry journey from Fishguard to Rosslare (M. Stevenson per A.S. Boot). The most northerly sighting was at Sanday, Orkney, 26th May (I. Lorimer). The highest number recorded for any one county was about 300 for Sussex.

As also happened in 1989, 1990 saw the sudden appearance in great numbers in Essex, Norfolk and elsewhere, of the Tineoid *Yponomeuta evonymella* L. For example, at St Olaves, E. Suffolk on 7th July, "a massive invasion" occurred of "small Ermines" (probably *Y. evonymella*) (cf. Foster, *Ent. Rec.* **103**: 44-45).

The Diamond-backed Moth (*Plutella xylostella* L.) was noted first at Fernham, Berkshire on 21st April (S. Nash) and last at Winterton, Norfolk, the 13th November (A. Foster). The moth ranged as far north as Scorradale, Orkney (I. Lorimer).

The Rush Veneer (*Nomophila noctuella* D. & S.). Records of this Pyrale began with one at Durlston, Dorset on 5th March (R.J.H. Murray), last at Fountainstown, Cork on 30th November (A. Myers) and reached furthest north at Spurn, Yorkshire on 19th October (B.A. Spence).

The Rusty Pearl (*Udea ferrugalis* Hbn.), with the earliest date of appearance on 13th April at Freshwater, Isle of Wight (Knill-Jones, *Ent. Rec.* **102**: 191), and latest on 27th November at Bradwell-on-Sea, Essex (S. Dewick), this species had a very good year with a count of 2,138. Among highlights of special interest may be mentioned that on 12th November, P.

COMMONER IMMIGRANTS 1990
(Approximate numbers only)

	C. cardui	*V. atalanta*	*C. croceus*	*M. stellatarum*	*A. ipsilon*	*P. saucia*	*A. gamma*	*U. ferrugalis*	*N. noctuella*	*P. xylostella*
January	–	1	–	1	–	–	–	–	–	–
February	–	6	–	5	2	–	–	–	–	–
March	19	38	–	13	79	1	–	–	14	–
April	6	32	–	6	17	1	11	1	8	–
May	37	106	2	5	15	2	81	6	2	14
June	482	215	30	71	105	16	190	34	27	28
July	64	232	34	124	352	20	1138	99	22	42
August	267	411	176	93	517	63	988	452	139	84
September	153	839	88	128	337	211	1204	274	107	23
October	35	87	112	166	435	432	1108	714	159	24
November	1	27	20	9	9	27	101	558	5	10
December	–	–	–	–	–	–	1	–	–	–
Totals 1990	**1064**	**1994**	**462**	**621**	**1831**	**773**	**4822**	**2138**	**483**	**225**
Totals 1989	331	1656	184	248	3483	392	4582	450	564	109

Davy counted 40 at Durleston, Dorset; and on the *same date* at Dymchurch, Kent, J. Owen estimated seeing about 50 in each of three traps as well as many on walls, fences, etc.

Palpita unionalis Hb. 1990 was the best year ever for this usually rather uncommon Pyrale, with a total of approximately 179 moths as against 108

in 1956, and 112 in 1959. Also the much scarcer Pyrale, *Uresiphita polygonalis* D. & S. reached double figures for only the first time with a total of ten examples.

Of the common Noctuidae, *Noctua pronuba* L. (Large Yellow Underwing) is a plentiful species that is both immigrant and resident, though many recorders may not realise this. At Highcliffe, Hampshire, on 11th September, E.H. Wild recorded a sudden spate of 88 individuals which were probably immigrants. Another common species similarly classed as both resident and immigrant is *Phlogophora meticulosa* L. (Angle Shades). At Cornhill, Banffshire, between 13th and 17th October saw a sharp increase to double figures, such numbers being unusual for N.E. Scotland (M. Young and R. Leverton).

Agrotis ipsilon (Hufn.) (Dark Sword-grass) was first seen at Freshwater, Isle of Wight, on 23rd February (S.A. Knill-Jones), and last at Fountainstown, Co. Cork , the 30th November (A. Myers). The maximum number on any single occasion was at Branscombe, Devon, the 30th September when 100 plus were noted (P.J. Baker). The range north extended to Scorrodale, Orkney (I. Lorimer).

Peridroma saucia Hb. (Pearly Underwing) first appeared 21st March at Durlston, Dorset (R.J.H. Murray), and last at Charlecote, Warwickshire on 17th November (A. Gardner). The highest number recorded on any one night was 113 at Land's End, Cornwall the 18th October (S. Colenutt). As with *A. ipsilon,* the range furthest north reached Scorrodale, Orkney.

Autographa gamma L. (Silver Y) was the commonest of the nocturnal immigrants, though several recorders remarked on its comparative scarcity. It was first seen 8th April, at Littlehampton, Sussex (D. Dey); and last at Bidford-on-Avon, Warwickshire on 2nd December (R. Cox per D.C.G. Brown). Exceptionally heavy arrivals on weekend of 26th/27th July along S. Devon coast, may have run into thousands, e.g. at Jennycliff, 26th July it was seen in "hundreds"; and likewise "in hundreds" in the Start Point area 27th July (V. Tucker).

The Hummingbird Hawkmoth (*Macroglossum stellatarum* L.) had a good year totalling some 621 sightings, the first on 7th January at Berry Head, Brixham, Devon (C. Johnson per V. Tucker), and the last at Bath, Somerset, the 27th November (B.W. Moore). The records came from many observers spread over 32 counties, ranging from as far north as North Ronaldsey, Orkney, where it was observed feeding at *Hebe speciosa* (I. Lorimer). The maximum number for any one county totalled about 200 for Cornwall.

ANNEX I

Names of Recorders

Adams, S.J., Agassiz, D.J.L., Aitken, A.O., Allen, M., Archer-Lock, A., Arnold, N., Astel, N., Austin, R., Baker, Mrs M.A., Baker, B.R., Baker, P.J., Baker, T., Baldock, D.W., Banson, B., Barke, M., Barnett, R., Barnham, M., Barrowcliffe, Miss K., Beals, D., Bolt, I., Bond, K.G.M., Boot, A.S., Botwright, G., Bowdrey, J.P., Bradford, E.S., Bretherton R.F., Brind, C.A., Bristow, R., Brook, J., Brooks, Miss M., Brooks, S.,

Broomfield, Mrs M., Brown, D.C.G., Brydon, I.L., Butcher, A.G., Campbell, Dr J.L., Cardy, P.G., Carpenter, R., Carter, Col. W.A., Carrick, G., Catchpole, I., Chalmers-Hunt, J.M., Champion, M., Champkin, W., Charlwood, R., Chatelain, R.G., Church, S., Clancy, S.P., Clarke, Dr J., Classey, E.W., Cleere, N., Cooeman, –, Coleman, D., Colenutt, S., Collins, C.B., Collins, G.A., Constable, –, Cooper, K., Cox, R.M., Cox, T., Cramp, P.J., Crane, G., Craske, R., Crawley, P., Cribb, P., Cross, A., Crowther, P., Darlow, R., Davey, P., Davies, N.R., Davies, R.P.T., Dawkins, J., Dawson, Mrs G., Dennis, R., Deserens, N. & M., Dewick, A.J. & S., Dey, D., Divers, P.J., Dobbs, A., Dobson, A.H., Doody, E., Dredge, Mr, Duddington, N.R., Duinhoven, H., Dukes, P., Dyson, R.C., Easterbrook, M.A., Eastwick-Field, Col G.G., Edgar, R. Ellis, J.R., Else, G., Emmet, Col A.M., Emmett, E.V., Evans, M., Eyre, S., Eyvindsson, Mr, Ezard, A.S,. Fairclough, R., Ferguson, I.A., Firmin, J., Finch, Mrs, Fisher, J., Flatt, R., Fordham, B., Foster, A., Fradgley, J., Freed, T.H., Friese, J., Frost, M.C. & H., Gale, J. & B., Gale, S., Gapper, J.,Gardner, A., Gibbard, R., Gittings, T., Good, J., Goodey, B., Goodman, Mrs M., Gould, M., Grant, J., Gray, M., Green, J.G., Greenwood, J.A.C., Haes, E.C.M., Hall, M.R., Halsey, M. & J., Hanby, A.M., Hardman, R., Harman, T.W., Harrison, T., Hart, C., Hastings, R., Haynes, R., Head, Mrs C., Heathcote, P., Heather, Jill, Heckford, R.J., Henwood, Dr B.P., Higgs, G.E., Hipperson, D., Hoare, R., Hobbs, R., Holden, J.R., Holloway, Mr, Hopkins, E.A. & F.S., Hopkins, P., Hopper, J., Howton, D., Hucker, B., Humphreys, Mrs R.J., Hurrell, Mrs, Hutson, T., Irving, R., Ivon-Jones, B., Jaines, J., Jeffes, M., Jenner, H., Jewitt, Elizabeth, Johnson, R., Janes, H., Jonas, H., Jones, H., Joy, D., Kelly, M., Kenderedine, J., Kenward, Mrs A.M., King, Miss S., King, T., Kitson, L., Kitson, T., Knell, S., Knill-Jones, J.W., Knill-Jones, S., Knott, J.K., Lane, C.G. & R.E., Lang, D., Langmaid, Dr J.R., Leverton, R., Lorand, R., Lorimer, I., Luckens, Dr C.J., Luckens, Mrs F.E., McCallum, J., McDougall, K., McTear, Mrs, Mackworth-Praed, E., Mackworth-Praed, H., Madden, A., Mayall, K.M., Mitchell, B.R., Moore, B.W., Moore, D.A., Moore, S.E., Moore, T., Morgan, I.K., Moxey, S.P., Muddeman, N., Murray, R.J.H., Myers, Prof A., Nash, S., O'Heffernan, H.L., O'Keeffe, D., O'Mahony, M., Owen, Dr D.F., Owen, J., Owston, A., Page, C., Paine, R.L., Palmer, S., Parmenter, J., Parnaby, Mrs E.M.I., Parsons, M., Payne, J., Peet, Dr T.N., Penhallurick, R.D., Philp, E., Pickles, A.J., Pratt, C., Pyman, G.A., Radford, J., Reid, J., Ribbands, B., Riley, A., Rogers, M., Rollins, C.C.M., Rooker, J., Roper, P., Rosser, P., Rouse, T., Ruff, K., Rule, J., Rushen, D., Russell, A.P., Rutherford, C.I., Ryan, B., Sanders, P., Sandwich Bay Bird Observatory, Saul, K.G., Semmens, M.P., Sharpe, R., Siddons, P.N., Simmons, M., Simpson, Dr A.N.B., Skeen, R., Skinner, B., Sleep, T.D., Smith, A., Smith, Dr., F.H.N., Smytheman, P., Softly, R., Spalding, A., Spence, B.R., Stanistreet, S., Statham, B.L., Stephenson, G.C., Sterling, Col D.H., Sterling, P., Stevenson, M., Stokes, D., Swanson, S., Swensson, D., Tapp, R.D., Taylor, D., Taylor, M.P., Thompson, P., Tickner, M., Tiley, R., Toomer, J.A., Tucker, V., Turner, N., Vickerstaff, Mrs K., Vincent, J., Wakeham-Dawson, A., Walker, D., Wallis, A.J., Walters, J.M., Ward, J., Wardell, W.R., Waring, Dr P., Warren, M.S., Weatherhead, R., Wedd, D.J., Wells, Mrs J., West, B.K., West, M., White, R. & C., Wild, E.H., Wilkinson, Mrs A., Wills, C., Wilson, D., Wilson, P., Winter, P.Q., Woolsett, J.B., Wooldridge, D.B., Wright, G., Wright, S., Wynward, C., Youden, G.H., Young, D.A., Young, Dr M.

(to be concluded . . .)

Old Scottish specimens of *Argynnis paphia* (L.) (Lep.: Nymphalidae)

There is good evidence that the Silver-washed Fritillary butterfly, *Argynnis paphia* (L.) used to occur locally in several southern and possibly north-eastern localities in Scotland up until around the beginning of the present century, when it appears to have become extinct in the country (Thomson, 1980, *The Butterflies of Scotland*: 159-162). In his account Thomson reviews all known literature records of its occurrence but states that "there are no Scottish specimens of this species in collections".

One of the literature sources included by Thomson is a list by Guthrie (1897, *Hist. Berwicks. Nat. Club* **15** (1894/95): 332-345) which records *A. paphia* from Minto Rocks, Roxburghshire. I was recently asked to review the insect collections at Hawick Museum and I found there the W.G. Guthrie collection, in which there were three specimens of *A. paphia* standing over a printed name label and a handscript label saying "LOCALITIES [.] Rare in Scotland [.] Minto Rocks". The nearest specimen to the label, positioned in fact immediately above it, was a rather small dark male, set underside, and this specimen has now been transferred to the National Museums of Scotland through the courtesy of Roxburgh District Council and the curator of Natural History at Hawick Museum, John Harrison. The other two specimens are one male and one female, both set upperside and both rather larger and brighter than the transferred specimen (though on the same kind of pin). They were spaciously positioned significantly higher above the cabinet label than would be expected and this otherwise empty column space contained also a single specimen of *Argynnis adippe* (Dennis & Schiffermüller) (which is most unlikely to have come from Minto Rocks (cf. Thomson, *loc. cit.*) or to have been misidentified by Guthrie as *paphia*). It is not clear whether these further specimens, which have for the time being been left *in situ,* had been added later or simply been moved in response to some temporary need. The drawer (and at least one of the specimens of *paphia*) had been drenched by water at some time, and the wings of several specimens had through this become firmly stuck to the floor of the cabinet drawer. Needless to say, none of the material mentioned here had its own data label.— MARK R. SHAW, National Museums of Scotland, Chambers Street, Edinburgh EH1 1JF.

A September record for *Parnassius phoebus* Fabr.

The remarkable tally of exotic lepidoptera reputedly taken in the United Kingdom during the late summer of 1887 was recently reviewed by Burton, *Ent. Rec.* **104**: 25-31. The reported finding of *Parnassius phoebus* as late in the year as 1st September is challenged as "hard to believe" by Kudrna. Admittedly, current literature consistently limits the flight period of this species in Europe to the months of July and August. However, Verity (1952, *Les Variations geographiques et saisonnieres des Papillons diurnes en France*. Ed. Sciences Nat., Compiegne, p.219) quotes the Swiss lepidopterist, Vorbrodt, that this can extend into September. The following observation from Austria's Sudtirol confirms that this is indeed the case. On 1st September, 1988, I chanced on a small colony of *P. phoebus* at around 2,100m on the slopes of the Glockner-Gruppe. Passing the spot nine days later, I noted with surprise that a few *phoebus* were still quartering the habitat.— G. PRINGLE, Aldon Farmhouse, West Malling, Kent.

THE FALKLAND ISLANDS — AN ENTOMOLOGICAL SNAPSHOP

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IN MARCH and April 1989, and again in January to March 1990, I was lucky enough to be a visiting Dental Surgeon to the Falkland Islands and took the opportunity to investigate a little of the entomology world while I was there. Not much work has been done over the years on the insect fauna, and most people who travel to the islands to look at wild life spend their time visiting the abundant bird and sea mammal populations. Gaden Robinson's book *Insects of the Falkland Islands* is a good starting point, so armed with this, some advice from the British Museum (Natural History), a butterfly net and some collecting boxes I ventured south.

During my first visit my wife and two children came with me, so I had rather limited space for "bug" equipment. However in 1990 I travelled with additional collecting boxes and an ex Open University m.v. moth trap, a relatively portable trap which I felt would be suitable to transport to the various islands.

The Falklands are a compact group of about 400 islands with a land area of 6,270 squre miles, deep in the South Atlantic about 8,000 miles away. They are on the same latitude south as London is north, 300 miles from the Patagonian coast, and 1,000 miles north of the Antarctic continent. So a longish trip whatever transport is used. Originally it took some time to get there but since 1985 and the new airport at Mount Pleasant on East Falkland, the trip takes only about 18 hours with one stop on Ascension Island. All the flights are organised by the R.A.F. from Brize Norton and Tristars are used. They are very comfortable and my family and I were very well looked after. Ascension Island is quite a surprise, just a rock in the middle of the sea, virtually on the equator but with sea breezes the climate is very agreeable. Some vegetation does exist on Ascension, and we were sorry not to have been able to explore a little, as it seemed ideal for bugs — at least for those that were not blown away. The stop over on Ascension was only for an hour or two, and we were soon on our way. The pilot has to be sure of reasonable weather in Stanley before setting off from Ascension because diversions to the South American mainland have been difficult. Although the situation has improved considerably, for some time after the conflict with Argentina, even landing at Montevido in Uraguay could mean being locked up for 24 hours!

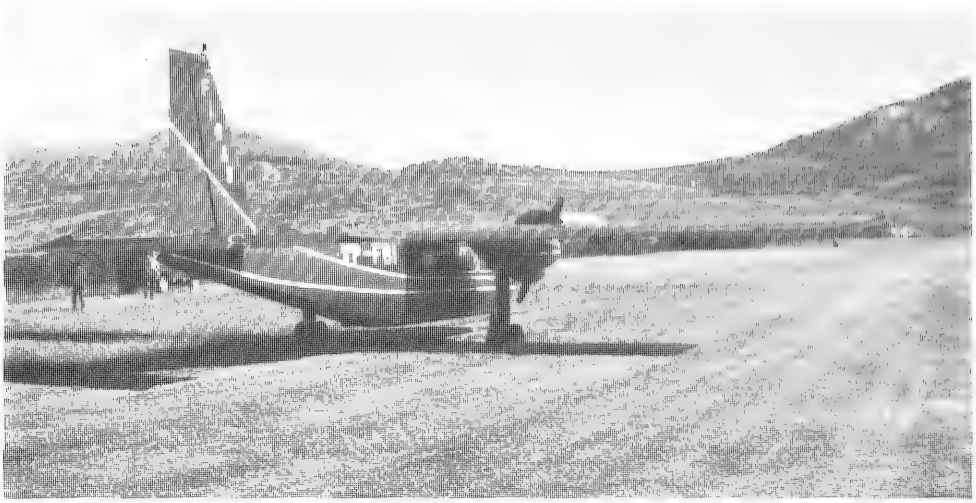
Both trips south were uneventful and our first experience of the Islands was a lecture about mines. It seems that many of the minefields remain as it is just impossible, and not cost-effective, to remove the remaining ones. This was quite a thought-provoking lecture for the average entomologist used to walking all over the place in a fairly unrestricted fashion! Even taking the standard army minefield maps, mandatory for any expedition over the countryside, could only be of limited help.

First impressions of the Falkland Islands from the front seat of the four-wheel-drive Landrover, the commonest vehicle to be found, was of a treeless, rather flat, rugged landscape. The main road out of the airport to Stanley, about 35 miles away, is of raised stone and shingle construction, quite a shattering experience after an hour or so. At this point I did have some sympathy with Darwin's comments when he visited the Islands in 1833: "*An undulating land, with a desolate and wretched aspect is everywhere covered by a peaty soil and wiry grass of a monotonous brown colour.*" His observations are a little unfortunate as this impression has been handed down through much of the literature. On arrival in Stanley the picture changes to one of considerable colour. The roofs and sides of many houses are brightly painted, and the setting of the town, really a large village of about 1,200 on the hillside surrounding a natural larbour, is particularly attractive. We spent some time in Stanley as the main hospital where I was working is to be found there.

Unlike Darwin, who visited the Islands in March and had very poor weather, we encountered many days of crystal clear bright sunny warm weather. Generally the climate is not dissimilar to that of the United Kingdom, though slightly warmer in winter (May to September) and slightly cooler in summer (November to March). We did have some days of considerable wind, and this does seem to be an important factor in the survival of many insects as some have been shown to exhibit the oceanic-subantarctic adaptation of brachyptery or complete loss of wings. Sadly I did not come across any Lepidoptera which showed these features.

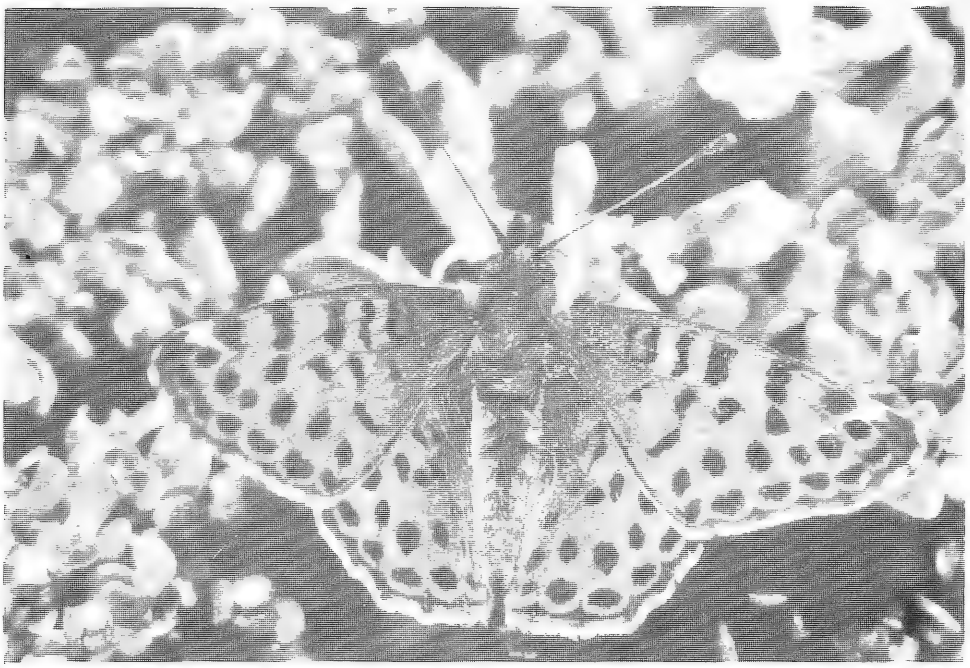
We spent many hours armed with butterfly nets walking around Stanley and the adjacent countryside ("Camp" as it is known on the Islands from the Spanish word campo meaning countryside). We were not always successful, but on the sunny warm days we did see considerable numbers of diptera, including many hoverflies such as *Syrphus octomaculatus* (Walker) and *Carposcalis bertrandi* (Austen). Sadly no butterflies in 1989 or 1990 from the Stanley area. Although records show both the only resident, Queen of the Falklands Fritillary, *Issoria cytheris cytheris* (Drury), and the migrant Southern Painted Lady, *Cynthia carye* (Hübner), as being visitors to these parts of the region. During 1990 I ran a moth trap in the west part of Stanley overlooking the race track, and this proved to be very successful, and on some warm nights we caught several hundred moths, mainly Noctuidae, such as *Caphornia ochricraspia* (Hampson), *Caphornia xanthostola* (Mabille), *Agrotis hispidula* (Guenée) and many micros which we still have to identify. Always the Ichneumon fly *Alolophion occidentalis* (Morley) was present in considerable numbers on warm nights. The only problem I did have was when I had fortgotten to put enough ballast in the bottom of the light trap when the wind increased, and had to start chasing it across the field before too much damage occurred to it and its contents.

We were lucky enough to visit some of the outer islands, which we knew



Britten-Norman Islander at Hill Cove, on grass landing strip, taking off towards the hills in the distance.

had an interesting collection of sea mammals and birds, something the children would enjoy. Our first excursion was to Carcass Island, one of the most northerly islands in the archipeligo. Transport is by air, in a small seven-seater Britten-Norman Islander. These little planes are vital lines of communication for the islanders who until recently could only communicate with each other by radio telephone links. Our trip to Carcass took us about one and a half hours as it had to stop to pick up and drop supplies and passengers at the various outlying settlements en route. Much of the trip seemed to be over the sea, and we kept careful watch out of the windows for whales, sometimes spotted from these small aircraft. Carcass Island, being one of the most northerly islands, is marginally warmer and drier than Stanley, and we found it particularly pleasant. During 1989 not much in the way of Lepidoptera was found, with the rather exciting exception of two new records for the islands, *Phyllia triangulifera* (Blanchard) and *Pseudoleucania tephra* (Köhler). We had a particularly warm day and during the evening a number of *Phyllia triangulifera* moths flew in through an open window, all in fine condition, obviously a sudden emergence due to the daytime temperatures. Because all electricity on this island is from a generator, the time for catching moths is limited in the evenings as power goes off around eleven o'clock. The following day was considerably cooler, and cold winds prevented any further insect captures, except the discovery of a camel cricket *Parudenus falklandicus* (Enderlein), a particularly fine beast found walking across the bathroom floor in our cottage. This wingless creature is one of the four major groups of insects on the islands represented by a single species, and in comparison with other Falkland insect fauna, it is a large creature reaching some 25mm in length. On my return to Carcass the following year, I had my moth trap, and following a similarly warm day I managed to catch *Phyllia triangulifera*



Male *Issoria cytheris cytheris* on Diddle-dee, *Empetrum rubrum* (West Falklands).

again, this time about one month earlier in the year. No more notable moth catches, even though my host on Carcass, Mr Rob McGill had very kindly allowed the generator to run on during the evening, long after normal lights out. I was blessed with two fine days in 1990 on Carcass Island and I was able to see the Falkland Fritillary in full flight in the more sheltered parts of the island.

It is an interesting butterfly exhibiting sexual dimorphism, and is closely related to the European Queen of Spain Fritillary *Issoria lathonia* (Linnaeus). I found it, when the sun was out, flying very close to the ground, at all times in areas where the violet (*Viola maculata*) was growing. As with all the Falklanders, my hosts the McGill family were very kind and helpful in my Entomological pursuits. On the last night, they mentioned that in 1984 they had taken a picture of a large moth resting on a chair outside early one morning. Back in Stanley Mrs Lorraine McGill brought me the slide of the moth later identified as *Hyles lineata* (Fabricius), the first record of this hawk moth from the islands.

After returning to Stanley for two weeks we ventured south for a weekend to Sea Lion Island, as many people have given good accounts of the sea mammals and bird life, and it would be of particular interest to our children. We were not disappointed. David and Pat Grey our hosts and managers of the lodge on this island made us very welcome, and soon after our arrival we were able to see Rockhopper, Magellanic, Gentoo and King Penguins. The burrows of the Megellanic Penguins are easy to find in this part of the world and occupy large areas of ground. On this small island I

will always have the memory of my four-year-old daughter looking down a burrow with quite young penguins looking back at her, moving their heads from side to side as they looked at her first with one eye and then with the other.

We felt thoroughly spoilt for wild life on this island and during our stay here we were to see elephant seals, sea lions and the wonderful sight of a pod of killer whales not more than 50 yards off the beach, spotted first by my wife, as I am often reminded! The bird life on all these islands is extraordinary and although this is intended to an entomological account, I must mention such experiences as coming within a few yards of a Peregrine Falcon and viewing Striated Caracaras from almost point blank range. So many Oystercatchers and Giant Petrels, Antarctic Skuas, Grebes and dozens of other birds made us realise why so many of the visitors to these parts are Ornithologists. The bug situation, however, was not very lucrative. Such a small windswept island, so exposed to the sea and elements obviously has little attraction for most Lepidoptera. Even when airborne the wind strength probably made it impossible for any flying insect to remain over land for very long!

Further trips were made to the West Falklands to areas of possible increased insect populations, such as Hill Cove, where Ray and Dene Hansen looked after me. This settlement faces north, shielded from the southerly colder winds by the Mt Robinson range of hills. I felt we might expect to find some different species. The Falkland Fritillary could again be found around the settlement and on walks towards Mt Adam and Mt Robinson. In the valleys much of the vegetation seemed very lush, sometimes even boggy. The hillsides were really dominated by dwarf shrub heath, the main component of this being the ubiquitious Diddle-dee (*Empetrum rubrum*) growing on a hard peat overlying rocky ridges. I often sat down to rest my lower limbs and turned over the edges of this attractive plant to find all manner of beetles, such as the Metallic beetle, *Metius blanda* (Dejean) and Weevils, such as *Malvinius compressiventis* (Enderlein) and *Caneorhinus biangulatus* (Champion). It was in this area that I found the only other Ichneumon fly I was to catch, *Trachysphyrus penai* (Porter).

On many of the ferns, usually the Tall fern (*Blechnum magellanicum*), I found the bright green spider *Araneus cinnabarinus,* the largest and most spectacular of spiders to be found in the Falklands. The moth trap proved to be less successful at Hill Cove. We had fairly cold nights but during the daytime I did manage to do some sweeping of the grass heathland. Many of the Micros I netted in this way remain as yet unidentified, but amongst the captures are *Tinea pallescentella* (Stainton) and *Fernandocrambus falklandicellus* (Hampson).

All my trips out to the "Camp" were met with enthusiasm from the local population who were always kindness itself, in all manner of ways. Even

my colleague Trevor Barnes, the Resident Dental Officer showed great interest and understanding in all the distractions to our work. Towards the end of my stay in 1990 many people were bringing specimens to the surgery in Stanley to be identified, and often had to "wait their turn" in the queue. It was on one of my last days there that a member of the Agricultural Department brought in a large moth, much to the excitement of staff and patients. The police had orginally been given the moth earlier that morning by a resident who had found it in his back garden, and they were very concerned that this insect might bite and injure a member of the local population! It turned out to be a perfect specimen of *Agrius cingulata* (Fabricius), the new world form of our Convolvulus Hawkmoth, *Agrius convolvuli* (Linnaeus), the second record of this species from the Falkland Islands.

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Thanatosis in butterflies

I read Torben Larsen's article on thanatosis in butterflies with great interest (*Ent. Rec.* **103**: 263-266). I cannot agree however that this escape mechanism is solely confined to distasteful species. The Marsh Fritillary butterfly, *Eurodryas aurinia* Rott. frequently feigns death in this way, and though some of its North American relatives in the *Occidryas* group are certainly distasteful to predators in the imaginal stage I am not aware that this is the case with adult *aurinia*. *Mellicta athalia* Rott. and *Mellicta parthenoides* Kef., neither of them distasteful species, also frequently exhibit thanatosis. I observed at first hand a similar phenomenon in the "White Mountain butterfly" *Oeneis melissa semidea* Say on Mount Washington in New Hampshire. Its habit of resting among tumbled rock slides and dropping down between the cracks on the approach of a predator was described by S.H. Scudder in 1889. This butterfly takes up the same attitude as in thanatotic species — the legs being folded close against the body and the wings clamped together, the forewings raised with the lower costal margin at approximately right angles to the body. *Oeneis melissa* escapes by dropping down out of reach through cracks in the rocks. I suspect this same posture achieves a similar purpose in *aurinia* et al — the butterfly drops like a stone and loses itself among the grass stems and other vegetation.—C.J. LUCKENS, Swallowfield, Manor Road, Durley, Hants SO3 2AF.

ASPECTS OF THE OVERWINTERING BIOLOGY OF LADYBIRDS IN BRITAIN

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Part 1: Introduction

DESPITE considerable amounts of work on the overwintering behaviour of Coccinellidae in continental Europe (see Hodek, 1967, 1973, 1986) and North America (Hagen, 1962), there is a general dearth of information in the literature on the overwintering sites and overwintering ecology of coccinellids in Britain (Benham and Muggleton, 1979).

In 1984, the Cambridge Ladybird Survey was instigated to collect data on the ecology, behaviour and geographic distributions of ladybirds in Britain. The data collected between 1984 and 1989 in respect of geographic distributions, and habitat and host plant preferences, are being published elsewhere (Majerus, Forge and Walker, 1990; Majerus, 1991). I herein present some of the information drawn from the Cambridge Ladybird Survey data in respect of the overwintering biology of ladybirds in Britain.

The Cambridge Ladybird Survey

The Cambridge Ladybird Survey relies on a formidable team of ladybird enthusiasts spread across Britain for collection of preliminary data. The recorders range from young children to nonagenarians. Some are experienced entomologists or professional biologists, but many have no formal biological training or other qualifications as recorders except an interest in ladybirds. Recorders send their notes and observations to the survey headquarters in Cambridge. Over five million records, from over seven thousand sources, had been received by the end of 1989. Records are checked in a number of ways, including cross-checking of grid references with descriptive locations, checking of any uncertain identifications, and following up any unusual observations, usually by a personal visit from one of the Cambridge scientists. (For further details of the procedures used to ensure data accuracy and integrity, see Majerus *et al,* 1990.)

The preliminary data are used as an indicator of areas of specific interest which then become the subject of detailed investigation by members of the Cambridge team. When specific types of data or notes on particular species are required from recorders, these are requested via the survey newsletters which are produced twice a year for this purpose and to keep recorders informed of the progress of the survey.

The survey does not cover all the British Coccinellidae. A number of the 42 coccinellids on the British list are small (less than 3mm in length), are black or brown, and are not strongly patterned. These species would not normally be recognised as ladybirds. Some, such as the species belonging to

the genera *Nephus* and *Scymnus* are difficult to distinguish without the use of a microscope and some taxonomic experience. Because it was considered undesirable to exclude from the survey people who lacked specialist knowledge and equipment, it was decided that the survey would concentrate on the larger and more strongly patterned species. Recorders were provided with notes on the identifications of 24 species. These notes, which have been updated and improved as the survey has progressed, have proved to be useful aids, and there have been very few cases of misidentification. It has been the policy of the Cambridge team to request recorders to send live specimens to Cambridge when identity is in doubt. It should be stressed that in any instance where there has been doubt about the identity of a ladybird, or the situation in which it was overwintering, the records have not been used.

Ladybirds in winter

All ladybirds pass the winter as adults. In Britain, all the species live for approximately a year and so pass just one winter as adults. However, occasionally females of the 2 spot (*Adalia 2-punctata*), 14 spot (*Propylea 14-punctata*), Cream-spot ladybird (*Calvia 14-guttata*), and Eyed ladybird (*Anatis ocellata*) may survive for two winters (Majerus, pers. obs.). The winter is an unfavourable period for ladybirds. Food is scarce or absent, and low temperatures lead to a reduced metabolic rate and reduced activity. Consequently, most ladybirds remain more or less inactive throughout the winter. This diapause or quiescence is primarily a response to the ephemeral occurrence of the prey of predatory species (Hodek, 1986). The exceptions are the four non-predatory species. The herbivorous 24 spot (*Subcoccinella 24-punctata*) and the three mycophilous species, the 16 spot (*Micraspis 16-punctata*), the 22 spot (*Psyllobora 22-punctata*) and the Orange ladybird (*Halyzia 16-guttata*) become active in mild periods throughout the winter, presumably because their food, low growing plants such as campions, clovers, trefoils, plantains and chickweeds, in the former case, and powdery mildews of the family Erysiphaceae, in the latter, are available for much of the winter. Predatory species do not have suitable food available except in abnormally mild winters and so they seek out sheltered situations during the autumn. In their refuges, they remain until food is available again. Sites chosen vary between species. Some, such as the 7 spot (*Coccinella 7-punctata*), 14 spot and Cream-spot are relatively non-specific about their choice of site, so that any position which affords some protection from wind and rain may be used. Typical sites for these species are in curled dead leaves, leaf litter, hollow plant stems, bark crevices, grass tussocks, or amongst thick foliage on evergreen shrubs, coniferous trees or tight leaf rosettes of herbaceous plants. Other species are more specific. The Water ladybird (*Anisosticta 19-punctata*) usually overwinters between the dead leaf blades of reed-mace (*Typha* spp.) or

common reeds (*Phragmites australis*). The 18 spot (*Myrrha 18-guttata*) chooses sites in the crowns of mature Scots pine. In both these species, the sites chosen are sheltered situations in their normal habitats. However, some species move away from their normal summer haunts to overwinter. The 2 spot ladybird usually passes the winter in buildings, particularly around window frames, in double glazing units, or tucked into corners of unheated rooms or outhouses. It is probable that the two largest species of British ladybird, the Eyed and the Striped ladybird (*Myzia oblongoguttata*) also disperse from their summer habitats to pass the winter. Both are conifer specialists, favouring Scots pine. Exhaustive searches of Scots pine during the winter have produced less than a dozen records between November and February, even in locations where both species are common or abundant on the pines in the autumn and spring. It is hard to believe that these large species could have been missed during these searches if they do remain on the pines during the winter. It may be noted that two other conifer specialists, the Pine ladybird (*Exochomus 4-pustulatus*) and the Cream-streaked ladybird (*Harmonia 4-punctata*) are commonly found on Scots pine during the winter, usually in numbers that correspond well to their abundance in the months running up to and following their quiescent periods.

Not all winters are the same. The survey has spanned two particularly mild winters to date (1988/89 and 1989/90). The records for those two winters, when compared with those from 1984/85 to 1987/88, suggest that some species may show climate related variations in overwintering behaviour. For example, the Kidney-spot ladybird (*Chilocorus renipustulatus*) was rarely found in exposed positions on the trunks of its host trees during the winters between 1984/85 and 1987/88, nor was it recorded feeding from October to February in these years. However, in 1988/89 and 1989/90, the species was recorded many times in exposed positions on the trunks of sallow, ash, poplar and birch during the winter. In these years, records of adults feeding on coccids have been received for all winter months, and in 1990, the ladybirds were becoming active and mating by early March. Similarly, prior to 1989/90, the Orange ladybird had been recorded mainly from leaf litter beneath sycamores, and had never been observed in exposed situations except when active on particularly mild days. However, between October 1989 and February 1990 over 80 observations of this species, apparently inactive on the trunks or under lateral branches of deciduous trees, were made. These individuals were left undisturbed and their positions were checked repeatedly until they disappeared. The ladybirds, which were all first seen in January 1990, remained at the sites where they were first observed for between six and 124 days. Similar observations were recorded in Dyfed by Fowles (1990). He studied the overwintering sites of this species in a small oak/hazel dingle woodland at Coed Nant Llolwyn, Dyfed. Thirty-eight ladybirds were monitored on 51 visits to the site from December 1989 to March 1991. The

majority of the ladybirds were found on the north-eastern sides of trees, away from the prevailing south-westerly winds. Most were on relatively thin vertical stems (less than 3.5cm diameter), directly beneath an overhanging knot, twig or branch. Fowles suggests that, in such situation, the ladybirds are protected from the worst of the chilling and desiccating effects of the wind, and avoided frequent wetting in rain. Indeed, Fowles noted that ladybirds did occasionally move to avoid water trickling down the trees. Finally, Fowles noted that the ladybirds favoured young trees with smooth bark, such as hazel, hawthorn, beech and sycamore, avoiding trees with roughened bark which would prevent the ladybirds clamping down tightly if attacked by arboreal predators such as ground-beetles.

The winter sites of 7 spot ladybirds were also somewhat abnormal in 1989/90. Many reports of clumps of 7 spots residing in exposed positions particularly in deciduous woodland, have been received. These observations may be explained by the mildness of the winter, or, because 7 spots were particularly abundant during the winter of 1989/90, it is possible that these clumps were the result of a limited number of suitable more sheltered sites all being occupied. During the winter of 1989/90, several recorders reported finding large numbers of 7 spots just below the soil surface. Such a situation has only been reported once previously for the 7 spot in Britain, in 1985 in West Lothian (Pattle, pers. comm.). Whether 7 spots commonly overwinter in such situations or whether this behaviour is a consequence of the unusual weather, and in particular the abnormally high soil temperatures during the winter of 1989/90 is not known.

Many ladybirds congregate into small, or occasionally large groups during the winter. In Britain the species which regularly produces the largest groups is the 16 spot. Aggregates of several thousand individuals are not uncommon and one gorse bush, near Lakenheath in Suffolk was host to a population estimated in excess of 30,000 in January 1990. Aggregates in excess of a thousand have also been recorded in the 2 spot and 22 spot. Indeed the largest reported aggregation of British ladybirds that I can find is one of more than 50,000 2 spot ladybirds between an old wooden trellis and a garden wall in Sevenoaks, Kent, in February 1950 (Williams, 1960). Three other species have been found in groups in excess of a hundred, namely the 24 spot, the 7 spot and the Pine ladybird. Table 1 gives details of the approximate proportions of records of overwintering ladybirds which involved groups, and the maximum and average number of the ladybirds recorded in groups.

The mechanisms by which ladybirds are attracted to one another for the winter is not known for certain. Hodek (1973) states that behavioural responses which lead to the production of aggregates may be indirect or direct. Responses to factors such as light, gravity, temperature and humidity may lead many individuals to accumulate at the same place. In such cases the production of aggregations is determined by factors extrinsic to other ladybirds. Alternatively, there may be a pheromonal attraction

Table 1. Notes on the grouping of overwintering ladybirds. Only Cambridge Ladybird Survey records from October 1984 to March 1990 are included.

	Percentage of records involving group	Maximum number in a group	Approx. mean number in group**	Number of records*
24 spot	31	>200	18	c
13 spot	—	—	—	—
Adonis'	24	7	2-3	a
Water	9	17	2-3	f
Larch	8	9	2-3	d
16 spot	95	>30,000	480	d
2 spot	61	>3,000	19	f
10 spot	11	12	3-4	e
7 spot	31	250	8	f
5 spot	14	3	2-3	a
11 spot	16	17	3-4	d
Scarce 7 spot	27	19	4	c
Hieroglyphic	3	2	2	b
Cream-streaked	21	14	4-5	d
Orange	12	8	2-3	c
18 spot	13	7	2-3	d
22 spot	21	>1,000	31	d
Cream-spot	9	4	2-3	d
14 spot	2	7	2-3	b
Striped	0	—	—	5
Eyed	17	2	2	6
Kidney-spot	16	37	5-6	e
Heather	3	4	2-3	a
Pine	16	>350	12	f

* For the purposes of number and percentage of records, an aggregation of ladybirds counts as a single record, so an aggregation of over thirteen thousand 16 spots is one record (a — 10-49; b — 50-99; c — 100-499; d — 500-999; e — 1,000-9,999; f — more than 10,000 records).

** The mean number of ladybirds in groups is calculated by dividing the total number of ladybirds in groups by the number of groups. Single ladybirds are not included.

between ladybirds which causes them to aggregate. If so, it seems probable that the scent is of long duration as the same sites are often used by ladybirds year after year. As ladybirds generally do not survive through two winters, there must be some method by which the new generation of ladybirds is attracted to these regularly used sites. A pheromone laid down at a site by the previous winter's tenants could acccomplish this. Alternatively, Hills (1969) has suggested that 2 spots are attracted to overwintering sites by the smell from the excreta of the previous year's population, or by the few adults that die at such sites each winter.

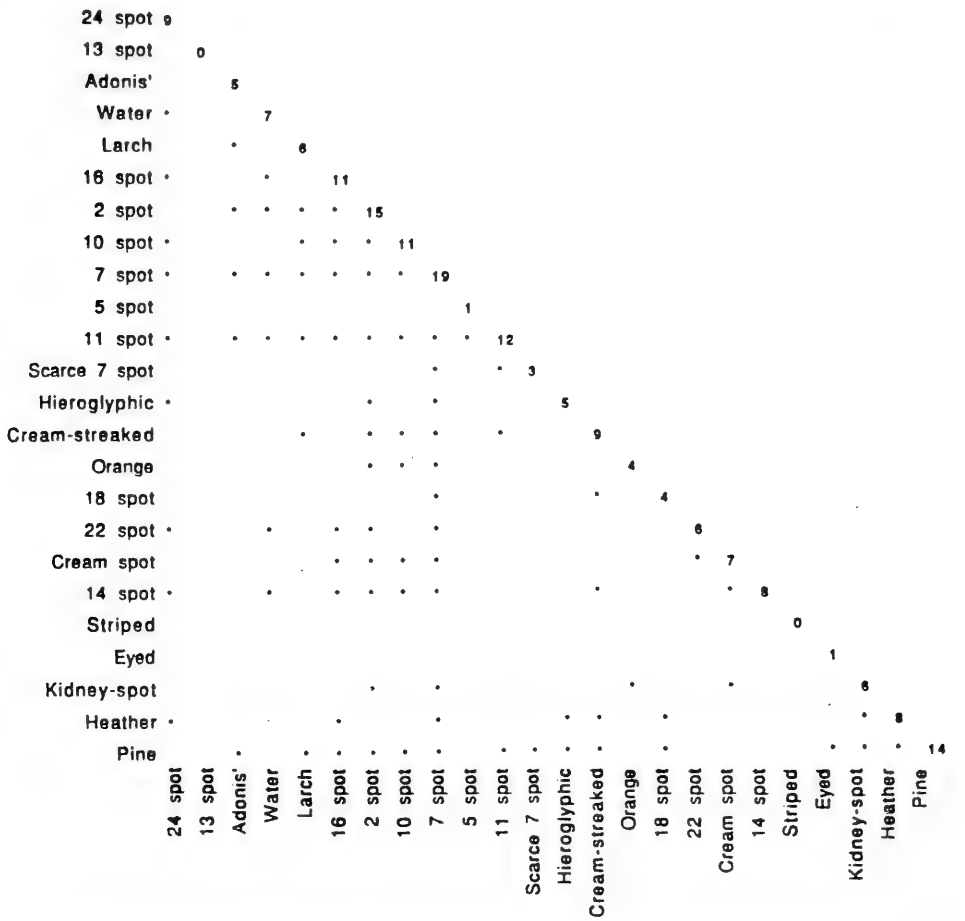
Little work has been carried out on the relative importance of physical and chemical stimuli to aggregate formation in different species. Pullianen (1963, 1964) studied the responses of 8 spot ladybirds which overwinter in

bark crevices of pine trees in Finland. He found that they showed a strong negative response to humidity, which was only reversed after prolonged desiccation. They were repelled by short-wave light, and by long-wave light following desiccation. However, the relevance of these results to British populations of 18-spots must be questioned for Pullianen reported that 93% of 18 spots overwinter in bark crevices in the lowest 10cm of the trunks of pines. This figure can be contrasted with that of Majerus (1988) who found the species to have a strong preference for overwintering in the crowns of Scots pines at two locations in England. Virtually no work has been carried out on the existence or function of pheromonal attractants. However, recent studies have provided circumstantial evidence of a chemical attractant. Repeated washing with water during the summer, of sites regularly used by 2 spot ladybirds in the winter reduces the probability of the site being used subsequently (Majerus, unpublished data).

If a pheromonal attractant is involved in aggregate formation, is seems unlikely that the pheromone is species-specific, for aggregations often involve ladybirds of two or more species. Table 2 gives a list of species which have been found together during the winter. However, this table does not indicate the occurrence or composition of aggregations comprising three or more species. Such groups do occur. Particularly common are aggregations in buildings in which 2 spots predominate but are accompanied by a small number of individuals, usually just one or two, of the 10 spot, 14 spot, 11 spot (*Coccinella 11-punctata*) and/or 7 spot. Indeed, one group in a house on the west edge of the New Forest contained all these species, the precise composition of the group being 23 2 spots, two 10 spots, two 14 spots, one 11 spot and one 7 spot. Three or four species groups are not uncommon on pines, the species involved usually being 7 spots with Pine ladybirds and one or others of the Cream-streaked ladybird, 10 spot, 11 spot, 14 spot, 2 spot, Hieroglyphic (*Coccinella hieroglyphica*) or Larch (*Aphidecta obliterata*) ladybirds. The most diverse such group was one comprising six species. It was situated amongst the needles at a base clump of pine cones on a young Scots pine near Dry Drayton, Cambridgeshire, on 21st October in 1989, and included seven pine ladybirds, six 7 spots, three 10 spots, two Cream-streaked ladybirds, two 2 spots and one 11 spot.

The abundance of 7 spots in the winter of 1989/90 led to the formation of abnormally large groups of this species, often in exposed situations, particularly in deciduous woodland. These groups are easily seen and may be scanned for other species without disturbing the insects. At Madingley Wood, Cambridgeshire, 150 such clumps, containing some 3,497 7 spots were checked between 17th January and 3rd February 1990. The aggregates of 7 spots varied in number from three to 137 individuals. Individuals of 11 other species were found in these clumps, the numbers of each being given in Table 3. In all clumps, 7 spots were the commonest species.

Table 2. Species of ladybird found together in overwintering aggregations. (Only Cambridge Ladybird Survey records from October 1984 to March 1990 are included.)



• means aggregations including both species have been recorded. The numbers arranged diagonally show the number of other species with which each species has been found in the winter.

Furthermore, 7 spots comprised more than half the ladybirds present in all groups except one consisting of 11 7 spots, seven Kidney-spots and six Pine ladybirds.

Little work has been carried out on the cues involved in stimulating ladybirds finally to leave winter sites in Britain. Workers elsewhere, have shown that overwintering 7 spots from central Europe (latitude 50°N) and south-eastern France (latitude 41°N) show a pronounced photoperiodic response if transferred to high temperatures (23.5°C) in the laboratory. Reproductive activity was initiated under long day-length conditions (18 hours light, 6 hours dark), but inhibited by short day-length (12 hours light, 12 hours dark) (Hodek *et al,* 1977; Hodek and Ruzicka, 1979). However, samples from northern Greece (latitude 41°N) showed a neutral response to

2 spot	4
14 spot	11
10 spot	35
Kidney-spot	81
Pine	34
Eyed	1
Larch	3
Orange	3
22 spot	2
Cream-spot	17
11 spot	6

Table 3a. Numbers of ladybirds of 11 species present in 150 groups dominated by 7 spot ladybirds in Madingley Wood, Cambridgeshire, January/February 1990.

Just 7 spot	84
2 species	26
3 species	24
4 species	14
5 species	2

Table 3b. Numbers of species present in each of 150 ladybird groups in Madingley Wood, Cambridgeshire, January/February 1990.

photoperiod, both long and short day-length initiating oviposition in most females after a short period, and similar results have been reported from two samples from southern Spain (latitude 37°N) (Hodek *et al*, 1989). Other studies on 7 spots have endorsed this variability in response to environmental cues (see Hodek, 1973 and 1986 for reviews). Indeed, in Japan, the subspecies *Coccinella 7-punctata brucki* shows the opposite response to that seen in central European populations, with short day-length promoting oviposition (Hodek *et al*, 1984).

In Britain, final emergence from overwintering sites varies considerably from year to year, predatory species becoming active earlier following mild winters and later after harsh ones. For example, in Cambridge, the main emergence from winter sites for 7 spots in 1988, a relatively average winter in terms of temperature, was during the second week in April. In 1989, after a very mild winter, the main emergence was a month earlier, during the second week in March. Similarly, the earliest observed matings were on 21st April in 1988 and on 17th March in 1989. These observations suggest that cues other than day-length are important. It may be that during early forays from overwintering sites, ladybirds are able to assess levels of prey availability. Alternatively, they may have some ability which enables them to discern, from their previous experience during the winter, whether food is likely to be available.

(to be concluded)

ON THE CURRENT STATUS OF THE JUNIPER CARPET MOTH, *THERA JUNIPERATA* L. (LEP.: GEOMETRIDAE)

P. WARING

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FURTHER TO recent notes on *T. juniperata* in the *Record* (Rutherford, 1974, Birkett, 1975, Sutton, 1978, Smith, 1980, Parsons, 1983, Taylor, 1985, West, 1988, Smith, 1991), readers may be interested to know that this species is certainly capable of maintaining viable colonies for fifteen or more years on cultivars of *Juniperus communis* in gardens in areas where wild juniper is absent. Ever since my parents moved in 1975 into their house in Kidlington, just north of Oxford, we have recorded adult *T. juniperata* on a single juniper bush that was planted into the garden by the previous owner in the 1960s.

The bush is an erect form of *Juniperus communis* known as "compressa". Since the family moved to the house the bush has grown from about 1.5m to about 2m tall and has then slumped so that it is now a little less than 2m tall but about 4m broad. The mainstem is a stump showing that it was cut back once by the previous owner. In October each year several hundred *T. juniperata* adults emerge and just after dark they can be seen walking over the foliage, mating and laying eggs. On a single night in October 1986 430 adults, including 25 mating pairs, were counted (Table 1). By day smaller numbers of adults can be found hiding amongst the foliage. Others leave the bush and I have recorded them in ones and twos (never more than three), on a few nights over the years at a Robinson light trap 20m away and occasionally at a lighted kitchen window approximately 12m away from the bush on the far side of the house. The larvae are also easy to find from late July to early September. They can be beaten but they are so numerous that a few can usually be spotted by searching by eye for a minute or two. The red and white markings on their sides are characteristic.

Only once has the bush been extensively defoliated by the caterpillars. In 1987 they stripped the upper growth until it was possible to see through the bush and only the brown stems were left. After this defoliation the bush remained very tatty looking during the spring of 1988 and in October 1988 we found that the moth population had crashed. Since then the bush has recovered and the numbers of moths are now building up again. I have often thought this population and the factors that keep it in check would make an excellent subject for study and have collected some data on seasonal and annual fluctuations in numbers, predators and so forth. Smith (1980) describes how larvae on a prostrate garden juniper in Warwickshire reduced the plant to such poor condition that it subsequently died.

As to the origin of the colony, there is no wild juniper nearby. The surrounding area consists of gardens and an old farm, now largely built

Date		Number of adult moths counted on bush each night between 2000-2200 hours	Number of pairs in copulation
September	30	0	—
October	1	0	—
	2	0	—
	3	0	—
	5	0	—
	6	0	—
	7	0	—
	8	1	
	9	46	—
	10	114	—
	12	196	—
	13	276	2
	14	416	2
	15	430	25
	16	368	13
	18	249	1
	19	227	18
	22	204	27
	23	160	6
	24	121	14
	26	45	6
	28	13	1
	29	6	—
	31	0	—
November	2	0	

Table 1. Nightly counts of *T. juniperata* on a lone garden juniper during 1986.

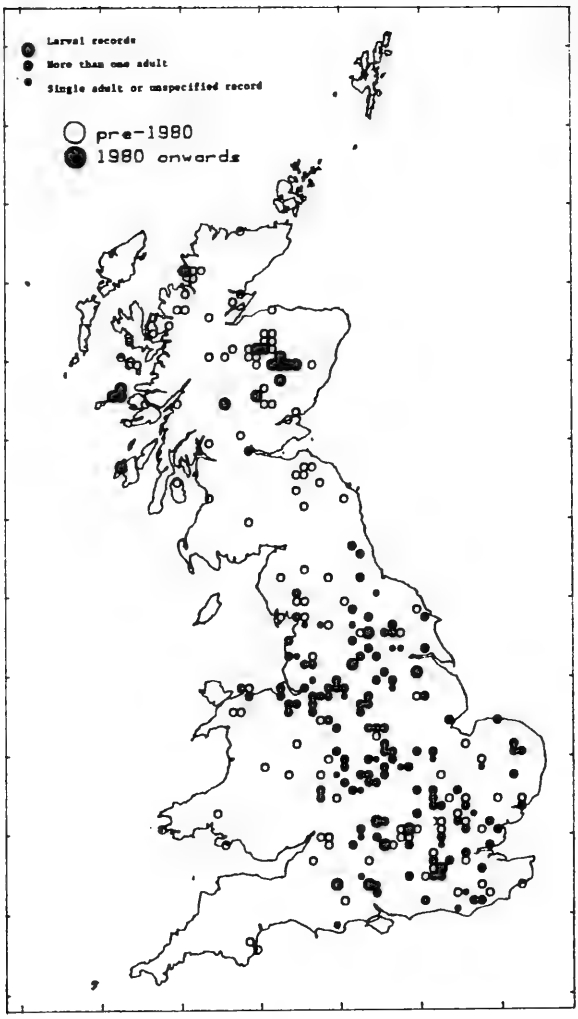
over, and there is no downland or other habitats in which wild juniper is likely to occur. The previous owner of the house, the late Mr A.J. Burt, remembered purchasing the bush from a garden centre and it is quite likely that the moths came with the bush. David Young (pers. comm.) informs me that he has seen larvae of *T. juniperata* at Kennedys Garden Centre, Reading in Berkshire, on supplies of young junipers awaiting sale.

I featured the Kidlington *juniperata* colony more than once on the weekly pages of the Ceefax Teletext service on BBC Television from 1985 up to 1989 when the natural history section was discontinued. In 1986 and 1987 I had a number of replies indicating the existence of garden colonies in other built-up areas. For example T.J.G. Horner at Pinkneys Green, Maidenhead, Berkshire, reported two *juniperata* to light on 27th October

1987 and found three on his garden *Juniperus chinensis Pfitzeriana* on 29th October 1987, suggesting breeding on two very large bushes he planted in 1968. Kenneth E. Hood of Polesworth near Tamworth, Staffordshire reported a colony in two junipers in his garden, noticed in 1985, still extant in 1987, and numbering 25 - 50 adults at minimum. Of the many notes on *T. juniperata* in the entomological journals, several record the discovery of larvae on garden junipers. For example Sutton (1978) records larvae on juniper purchased from a garden centre on the outskirts of Leeds. The plants were traced back to a nursery near Harrogate but the original source was not established. Smith (1980) reported extensive larval damage on dwarf junipers in gardens in Warwickwshire and Reid (1986) mentions larvae exhibited by Gaston Prior from a garden in North Harrow in 1981.

I note from the recent county lists that *T. juniperata* is being recorded elsewhere away from native juniper. Also Rutherford (1974) has commented on the move of the species into his part of Lancashire and Cheshire. In the Clwyd list (Formstone 1990), the records of the arrival of the species to the area were found to coincide with the planting of a garden juniper. Jill Warwick and Jim Jobe of the Harrogate and District Naturalists' Society (pers. comm.) have mentioned to me an upsurge in the numbers of records of the moth to light traps compared with the results of regular trapping in the 1950s and 1960s, and again colonies on garden bushes near the traps are suspected. Sutton and Beaumont (1989) give examples of confirmed garden colonies elsewhere in Yorkshire.

Since moving to Peterborough in 1987 we find that garden junipers are supporting the moth here also and I prepared a short note on the species for British Wildlife magazine (Waring 1990) although had no further replies. I am examining the status of this species among others, for the Joint Nature Conservation Committee, as part of a national review of the rarer macro-moths. Currently *T. juniperata* is listed as nationally notable on the basis that it had been recorded from less than 100 of the 10km grid squares in Great Britain up to 1982 (Hadley 1984). A current trawl of all county moth recorders for information on notable species has already resulted in reports of *T. juniperata* from over two hundred 10km squares since 1979. The majority of these recent records are of individuals or colonies seen in gardens and other built up areas in the south-east, Midlands and north of England. Records received so far from Scotland confirm that the moth is widespread and Bob Palmer of Aberdeen (pers. comm.) considers the species common wherever juniper occurs in north-east Scotland. The accompanying distribution map shows all the records from 1980 onwards received at the time of writing. The growing number of known garden colonies presents an interesting problem in mapping the species. Wild juniper continues to be nationally restricted in distribution and in some places colony sizes are dwindling as old bushes fail to produce young seedlings to replace them.



The specialist invertebrate fauna of juniper is well-known, largely due to the work of Ward (1977), who found that the only juniper colonies supporting the full fauna consisted of over 2,000 bushes although *T. juniperata* was found in colonies as small as ten bushes. Ward (1977) provides a map of the distribution of *T. juniperata* which shows the moth occurring in southern England and northern Scotland with very few records in between. Since then the Juniper Carpet has been dispersed into parts of Britain where wild juniper is unknown and has formed apparently viable colonies on single bushes. Possibly records from gardens will have to be distinguished from those occurring in semi-natural habitats. From those recent papers in which the adults are described, it appears that the new colonies in the Midlands are of the southern form of the moth, *T. juniperata juniperata,* which is larger and paler than those in Scotland. One wonders how many of the other invertebrates associated with juniper are also benefitting from the planting of gardens with ornamental junipers. The bush at Kidlington also supports the Juniper Pug, *Eupithecia pusillata.*

This species has also transferred to various species of exotic conifers such as *Chaemaecyparis* and *Thuya* (Warren, 1979, Haggett, 1980) and is no longer dependent on juniper. So far I have not heard of any larvae of *T. juniperata* feeding on plants other than *Juniperus* spp. in Britain and I note that the recent review of the foodplants of conifer-feeding macro-lepidoptera (Hatcher and Winter, 1990) lists no others. At Kidlington although *T. juniperata* has now colonised two small junipers planted next to the main bush in September 1986, I have seen no sign of breeding on adjacent X *Cupressocyparis leylandi,* of which there are a number of well-grown trees apparently supporting Blair's Shoulder-knot, *Lithophane leautieri,* which has been regular to the light trap since 1984.

If anyone knows of other colonies of *T. juniperata,* either in gardens or in semi-natural habitats and has not already submitted details to the local county recorder or biological records centre, I would be most grateful for details of grid references, dates and an approximate indication of numbers of adults or larvae seen, to assist me in the mapping and documentation of this species.

Acknowledgements

I would like to thank all those who responded to the requests on BBC Ceefax and sent in records of *T. juniperata,* particularly those named above and all the county moth recorders and biological record centres who are supplying records for the national review of the rarer macro-moths. The distribution map includes data kindly supplied by the Biological Records Centre, Monks Wood, the Rothamsted Insect Survey, Harpenden, and the Invertebrate Site Register, JNCC. I would also like to thank my mother for continuing the recording each year at the colony in Kidlington and Dr Stuart Ball of the JNCC Species Conservation Branch for his work on the computer system used to plot the distribution map.

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Labia minor L. (Derm.: Labiidae) in Essex

The Lesser Earwig, *Labia minor,* has been recorded by me on two occasions in warm humid conditions in the late summer of earlier years at our home, but only singly. Last summer, on the very warm evening of 3rd September, my wife Annette was delivering letters to the Colchester Sorting Office at about 7.30pm. The main double doors were open and the office light was on. She suddenly noticed two smallish insects fly in over her shoulder and land on the counter between her and the assistant. On landing, they quickly folded away their wings and proceeded to run about very rapidly. A third similar one was also flying around in the area but did not land. She suspected that they might be Lesser Earwigs, and with the help of the counter clerk, managed to capture them in an envelope and bring them home. They were kept alive with a supply of lettuce and then passed on to two local naturalist photographers who managed to photograph them, despite their hyperactivity, prior to their release. This is a rarely recorded earwig, which by the uninitiated could easily be mistaken for a small staphylinid beetle. Unlike the Common Earwig, which may or may not be able to fly — there is still some debate about that — it flies extremely readily in the right conditions.

E.C. Haes (1991, *Orthoptera Recording Scheme Newsletter,* **18**: 7) records only three other localities where this species was seen last year: Holme (v.c. 28), the New Forest (v.c. 11) and near Carmarthen (v.c. 44). It is almost certainly more common than the records suggest.—BASIL HARLEY, Martins, Great Horkesley, Colchester, Essex CO6 4AH.

REMINISCENCES OF AN AMATEUR LEPIDOPTERIST 1920 - 90

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There are many interesting aspects of entomology in Brazil, such as the trade in butterfly wings, the technical problems of collecting there, which I omit here as I dealt with them in a "first impressions" article (1959). Coming from the temperate parts of the Old World one is certainly bewildered by a new insect world, 99% different from the Palaearctic. My Brazilian collection, now in the British Museum (NH), is still hardly 50% determined, due to my continued engrossment in the Old World fauna on my departure from the New. I regret this, as the deep colours of Brazilian moths and butterflies are more beautiful than the paler tints of the eremics of the Old.

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13. Last steps in the Middle East, 1959 - 63

I travelled from the vast republic of Brazil, shopped briefly in London, and flew on to the island-state of Bahrain. Its population then was only 300,000, it had no natural history museum, and nothing had been published on its lepidoptera; however, unbeknown to me, a British aircraftsman, D.M. Rush, started collecting there during my first summer there. Foreseeing that time might hang heavy on his hands, he had offered his services to the British Museum (Natural History), whose good advice resulted in the Entomological Department's receiving, a couple of years later, his boxes of carefully labelled material, which I had tentatively determined for him. Indeed we mothed jointly during the first half of 1960. As far as I know he did not continue with entomology on his return to the U.K., and I have not seen his name in the literature, except for a *Eublemma* discovered in Bahrain which I dedicated to him (Wiltshire, 1961: 613, *"Porphyrinia rushi".*)

In my 1964 article I mentioned various geographical pecularities of Bahrain, particularly its artesian water supply, and noted that the uptake of

Osprey's nest on Hawar Island, Bahrain.

fresh water from the common aquifier in Saudi Arabia was already causing the sea water to infiltrate. This process must have proceeded apace during the past twenty years, for my television tells me that Bahrain now relies on desalinisation plants. In 1960 Kuwait was already desalinising sea-water, and it was said that oil was cheaper than drinking water. As for the fauna and flora, I ask myself if the lush gardens of Bahrain depicted in my article, have been spoilt by this trend.

A better-known entomologist who visited Bahrain during my stay was Professor George C. Varley, whom I had known at Cambridge, having first met him in Worsley Wood's house. He was now "Hope professor of zoology" at Oxford, and in 1961-62 was President of the Royal Entomological Society. With great originality however, he asked me if he could do some diving at Bahrain's coral reefs and this I was able to arrange for him. He was certainly not a one-track entomologist, being also a keen gliding-pilot in the U.K.

Jebel Dukhan, Bahrain's highest point, is only 450 feet above sea-level; its top is unrewarding for the naturalist, and the island's more interesting habitats are the lush oases and the contrasting desert. During my stay there, however, or rather during a leave-journey, I climbed for the third and last time to the highest point in the Lebabon, as mentioned in my fourth chapter, meeting up with Nesta and Lionel Higgins in the Pension Geagea close to the cedars of Bsherreh. It was the last "peak" of eighteen peaks in the Middle East which I had in thirty years sampled. Fascinating though hill-topping is in these subtropical latitudes, Middle Heights have proved richer and more diverse. At least twice on reaching a summit I have drawn a blank, due to storms or unseasonable temperature, and found my rewards a thousand feet lower down.

Of course one can equally well draw a blank on a sea beach, as I did at

Larva of *L. lapidea* in Lebanon on cypress.

Hawar, one of the sixteen islands south of Bahrain's main island, uninhabited except for a police post; it is waterless, and drinking water is brought in a periodical police launch. It was an entomological blank but the visit was worthwhile photographically, and for the sight of bird colonies. Besides flamingoes and cormorants, a pair of ospreys bred on its beaches, building an upstanding nest out of sponges, branches and other sea-wrack. It was a clean, fresh, picturesque desert island.

That last visit to the Lebanon in 1962, still peaceful, also enabled me to rephotograph, with colour film and a better camera, such larvae as that of *Lithophane lapidea* Hb. It is similarly coloured to our own Blair's Shoulder-knot caterpillar (*L. leautieri* Boisd.), its western vicariant. Both species' larvae are equally cryptic in the dense, scaley cypress or juniper foliage on which they feed, but the eastern species differs in a way which may interest readers more familiar with the western.

Bahrain already had good airmail connections with the rest of the world, facilitating contact with colleagues whose moth-captures I now increasingly studied. This change resulted from my wish to reciprocate the help and advice they had already given me. Since including genitalia figures in my 1946-9 publications (listed in earlier chapters) I had willy-nilly become an authority on the larger moths of the Middle East. Though my eighteen months in Brazil had interrupted such consultations, these resumed apace on my reaching Bahrain. After Klapperich's Afghan moths which Father Froitzheim distributed for him, Amsel's from the same country were sent to me from Karlsruhe, and then Diehl's Arabian moths from Munich, and finally those of Dr Kasy and Mrs Vartian from Vienna; these were from Iran and Afghanistan including north-east Pakistan. Of course, my entomology was still an avocation, official and domestic preoccupations coming first in my life. During home leaves Tring and South Kensington

museums were constantly visited for consultations and comparisons, empty storeboxes for expansion of my collection were ordered, mounting towards the hundred mark. In summer 1962 I visited Bonn and looked up the Wehrli types of *Gnophos* in the Alexander König Museum, making hurried sketches of many preparations. This institution was graced by its resident director, Dr Höhne and his wife; they had retired after a life-time collecting Chinese lepidoptera, and I was joined there by Steven Fletcher from our London Museum. When he had nothing else to do Höhne was still setting his papered Chinese lepidoptera. Indeed I understand he eventually died on the job, of a heart attack.

In March 1963 I proceeded to Geneva as Consul-General.

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14. Switzerland, 1963 - 67

Our Geneva Consulate-General was in 1963 still on the Quai Wilson, but I found that my residence, for the start of my stay, was "Les Petits Chatillons", a charming small villa, in park-like surroundings, characterised by primroses and oaks and situated at Genthod, a few miles north-east of the city.

Thiry years' wanderings had not effaced my youthful memories of British lepidoptera. Using a Robinson trap I found a nostalgic pleasure in recapturing old acquaintances, as the season opened here in early April. Later, in the mountains, the plethora of *Erebia* species evoked the curiosity which had motivated all my earlier activities further afield. This group typified the classical European fauna, largely missing from Britain or the Middle East. Many examples of the British moths flying here seemed larger and richer-coloured than the English ones.

As soon as I joined the Geneva entomological society, I received its list of local lepidoptera (Martin & Rehfous, 2nd edition), and had access to its old-fashioned premises, 7 Rue de Villereuse. The building was soon to be replaced, after my departure, by the more impressive and modernistic Museum of Natural History, higher up where the road joined the Route de Malagnou. The veterans Rehfous and Lacreuze, survivors of the days when the society had been lepidopterological but not yet entomological, were about to celebrate their eightieth birthdays. The Martin brothers were the most active lepidopterists and became my good friends. At the other end of my district was the delectable canton of Valais (upper Rhone valley) with mountains and vineyards. Here too there was an amateur lepidopterist, one Raphy Rappaz, manager of the Café de Paris in Sion. We talked lepidoptera and he showed me his collection, below the restaurant. I

noticed a number of nice specimens, labelled with a date and the words "in the cellar", signifying the place where he had bred them out, not the natural habitat.

Except for him, my contacts in the canton talked mostly about wine and artificial insemination (of cattle) with many jokes.

At 1400 - 2200 metres altitude on the mountains of Valais among scores of other species I attracted to light the "Marsh Moth" (*Athetis pallustris* Hb.), a mysterious species whose status is precarious in Britain. Switzerland is near the southern fringe of its wide Euro-Pacific range; its foodplant there is unrecorded and even in the north of the country it seems not to be known below 1000m.

In September of 1963 a short leave permitted me to take my family to the Italian Riviera near Genoa, where I made a point of calling on Dr Emilio Berio who had for years been sending me his reprints, mostly about Abyssinian and Somalian moths. Though a qualified lawyer, his town office housed ingenious pieces of entomological apparatus, which I envied, and he had for years been honorary curator of the city's natural history museum. He also kindly took me on a mothing excursion to Middle Heights in the Monte Penice range where typical West Palaearctic autumnal species came to the sheet.

This was only my second personal contact with Italian lepidopterists. My first had been with Roger Verity at Caldine near Florence in October 1953 (reported in this magazine vol. **71**: 247-248).

Spurred on by reading in a French magazine of the contact zone between two subspecies of *Melitaea athalia* (Rott.) (the Heath Fritillary) I started in 1964 looking at the Swiss frontier between the typical Speckled Skipper (*Pyrgus malvae* L.) and the more southerly variety or species, *P. malvoides* (Elw. & Edw.). Starting in the Rhone gorge between St Maurice and Martigny, I sought the help of others. E. de Bros, then editor of the Bâle Society's *Mitteilungen,* and Charles de Worms, on a visit from England; both responded and joined me there, but I failed to interest Vladimir Nabokov, then residing in a Montreux hotel, in the local butterflies. He was, of course, absorbed in literary work, but it was a pity, as he was best placed to investigate the upper borders of Lac Léman, where the Rhone flowed northwestwards for about ten miles. He might have provided the additional data which my co-author and editor, E. de Bros, sought (see Wiltshire and de Bros, 1966). In producing that article we confirmed the existence of a strange "no *Pyrgus* land" extending from Epinassey near Lavey-les-Bains to Dorénaz and Evionnaz near Martigny, and discussed its cause.

"You have found *P. malvoides* commonest at heights in the Valais, and we only caught a few towards the valley bottom at Dorénaz, and none at all further north in the gorge."

"But *P. malvae* seems less affected by lower altitudes and exists at the north end on the lower slopes. Why has it not penetrated further upstream?"

"There seem to be no contact between the two, so there will be no hybrids here, as reported in the Grisons (eastern Switzerland). I, too, wonder why."

"Geologists state that repeatedly during the last 1,500 years (Schmid, 1934: 211) the St Barthelemy torrent created its present "delta-cone", now covered by the "black wood", after catastrophic storms, damming the whole gorge and turning it into a lake extending five miles upstream. Can it be a coincidence that it corresponds perfectly to our "no *Pyrgus* land?"

"Do we not require to visit many more localities in this little area before proposing theories to explain our findings?"

After twenty-five years the additional data has still not come to hand!

It was all rather speculative, and I felt that types of new taxa were more tangible. Indeed, in 1964 I was tabulating those types I had in my collection, as I feared I should find few more since my return to Europe.

I had the relevant documents with me in Geneva, though the actual types were mainly in boxes at Tring, except for a number in the hands of Dr Amsel, who had to some extent distributed doubtful specimens to other micro-specialists. My table showed that when all these were returned, my collection should contain between four and five hundred types of new taxa.

Among the smaller fry, Meyrick was responsible for 47 new taxa, Amsel for 148. Among the larger moths and butterflies, Wehrli had described 12, Boursin 30, and I myself about 200. I omit here authors describing only a few from material caught by me.

Apart from such specimens, my collection had been enriched by some exchanges, mainly types from Daniel (China, leg. Hoehne) and Brandt (Iran). Though I was less interested in the Chinese types, which were in groups I did not study, than in the Iranian, these were both scientific assets of equal value to future students.

My typed table ran to twenty pages. I sent the top copy to the British Museum (with whom my boxes were deposited) for information.

How many of these new taxa would, on further study, prove to be synonyms? Doubtless a certain percentage. But equally the collection must contain unsuspected new species swaiting diagnosis and description.

To what author has this not happened? Our science ever progresses as new men refine their methods and probe deeper.

Every home-leave I had deposited a new batch of storeboxes at Tring; hours were spent expanding the collection so that all were in the right order. Little time remained before I was off again. I preferred to correct any errors myself and in any case at Tring no museum official was likely to check identities. In 1968 when the boxes were all brought to London, corrections would be easier.

(to be continued)

Hazards of butterfly collecting — Papua New Guinea, January 1983

One of the hazards of butterfly collecting in far off places is the use of public transport. The disadvantages are many: an inordinate amount of time is wasted; the various contraptions are usually overcrowded and unsafe; you cannot stop in likely places since other vehicles will usually be full; and for some unfathomable reason punctures and mechanical breakdowns invariably happen in millet fields or in palm oil plantations rather than in the splendid forested ridge which we passed some kilometres back. A rented car is much the better option.

However, when using public transport, a further hazard is the intense scrutiny to which you are subjected by the local population. In January 1983 various logistical constraints found my wife and I at the public bus stop in Bulolo, a small town in the highlands of Papua New Guinea. We had a six hour ride to Lae on the coast where we were to collect a rented car.

PNG is an expensive place and our fellow passengers were unused to sharing their bus with foreigners, so we were the subject of many animated conversations. These were, of course, in Pidgin, the *lingua franca* of PNG and the neighbouring islands. It is sometimes thought of as being a bowdlerised English, but it is a fully fledged language in its own right, with elements of English, German, and various local tongues. The etymology and syntactical logic of Pidgin are deeply satisfying. A woman is a *mery,* derived from the biblical Mary. So my wife is my *mery-bilong-me.* For some reason an airplane is a *balus,* so there is no prize for guessing that an air hostess is a *mery-bilong-balus.* So the standard safety announcement goes something like this: "Sapos balus go buggerup, meri-bilong-balus . . . (In case of emergency, the cabin crew . . .)"

This digression is to emphasise the point that while it is always annoying to be discussed at length in languages you do not know, it is doubly annoying in Pidgin, because you can almost understand it.

After two hours we reached the first "piss-stop", there being no difference in meaning between Pidgin and English. I joined the crowd, realising too late that the spot was used by all buses, that in consequence crowds of butterflies had been attracted. There was not enough time to get the net out of the luggage and assembled, but I did this in preparation for the next such stop. This, however, was in a village. There was a tell-tale building, strongly fortified with just a little hole in the wall — in short, a bottle shop, an institution which in PNG needs better protection than a bank. I descended in search of cold beer — "brownies" as they are called locally because of the bottle colour. My wife told me that as I left, an orgy of speculation had swept the bus, till a man finally declared: "Ahh — buy-im-bia". This simple — and refreshing — act raised our status no end, and we entered into conversation with the few English speaking passengers.

About 20 kilometres before Lae we came to a police check-point, as

pointless to my eye as most of the thousands I have been through all over the world. Suddenly a large and to me, unknown, butterfly flew past. I grabbed the net and headed for the exit, rushing towards it, and finding myself ankle deep in water. I waded across to an intercept point, missed the butterfly, and fell flat on my face into the swamp. I re-entered the bus rather ingloriously to clucking sounds of comfort. According to my wife the atmosphere had been electric; most people in PNG know about hunting and trapping. A collective sigh had gone through the bus when I missed the butterfly, then a strong voice had intoned: "Sorry toomuch — tryim again!" That was a nice thought, but I have never found out what it was that I missed.— TORBEN B. LARSEN, 358 Coldharbour Lane, London SW9 8PL.

***Empis woodi* Collin (Dipt.: Empididae) in Kent**

Between 1927, when Collin described the species, and 1961 when his *British Flies* Volume VI Empididae was published *Empis woodi* was known only from Herefordshire. I first encountered specimens in Kent on 8.v.1983 whilst sweeping hawthorn at Queendown Warren and since then have taken it at seven localities across the county. Five of the sites, namely Queendown Warren, Denton Bank, Lydden LNR, Coombe Down and Gorham Wood lie on the North Downs chalk, whilst the remainder, Hothfield Common, Brockhill Country Park and Grange Alders are on sand and gravel. The fly does not seem to swarm as is characteristic with some species of the genus and relatively low numbers were obtained. It is pertinent that in each case hawthorn was the source of specimens and the latest date of collection was 1st June.— L.CLEMONS, 14 St John's Avenue, Sittingbourne, Kent.

***Eupithecia millefoliata* Rössl. in Norfolk**

In August 1989 I found larvae of the Yarrow Pug in *Achillea* seedheads in the military Stanford Training Area of Norfolk. The colony was small but larvae were found in succeeding years there although not from other promising sites in surrounding country until autumn 1991, when huge areas of *Achillea* in the Thetford area were found to hold the larvae in some numbers. Prof. Colin Smith found the larvae only 30 miles to the south, in Cambridgeshire, in 1979, so the species has been in this part of East Anglia for some while.

In 1989 and 1990 larvae were quite fully grown in late August into early September. In 1991 under severe Breck drought conditions, larvae could be found at the same time only in their first and second instars, and we had to wait until the last week of October before last instar larvae appeared. Some of these early instar larvae were kept in a plastic box on dry food and the last to pupate did so in late December, but one lived through the very low early December temperatures, indoors, of around 40°F and from 40°F to 50°F in January until it died on 11th February 1992. This species appears to

be another of those late autumn feeding pugs that may continue into winter in temperatures modestly above freezing as long as suitable food is available, and they can pupate at temperatures not much above freezing.— G.M. HAGGETT, Meadows End, Northacre, Caston, Norfolk.

Xylota florum Fab. (Dipt.: Syrphidae) new to Kent

On 3rd July 1990 I captured a hoverfly which had settled on a stone beside a stream at Tunbridge Wells, Kent. The specimen was identified from Stubbs & Falk, *British Hoverflies* as *Xylota florum,* a species of southern distribution but not previously recorded from Kent. I am grateful to Eric Philp of the Maidstone Museum for confirming the identification.— V. MEASDAY, 68 Brookmead, Hildenborough, Tonbridge, Kent.

Exotic culinary tastes of the Angle Shades (*Phlogophora meticulosa* L.) (Lep.: Noctuidae)

The Angle Shades is not an uncommon moth in my garden, and larvae are encountered occasionally on a variety of cultivated plants, as might be expected with this polyphagous species. However, two occurrences may be of some interest.

My first attempt at growing chillies (*Capsicum frutescens*) in a cold glasshouse was very successful in the long hot summer of 1989. Supplies of very hot, red fruits were pressed on all friends and neighbours! The last few chillies were picked in November and brought into the kitchen to ripen off. One of the last was found to contain a larva resembling the Angle Shades. It continued to feed on the chilli until the fruit went mushy, when I transferred it to a diet of cabbage. After a couple of days on this pabulum, the larva pupated at the beginning of March 1990. On 2nd April 1990, a full-grown Angle Shades emerged.

This species is known to feed on a wide variety of plants, including toxic species such as bracken (*Pteridium aquilinum* (L.)). Chillies are known to contain a number of toxic compounds including those which cause the "hot" sensation to man.

An altogether different diet of Angle Shades larvae was noted in October 1991 when several specimens were collected from autumn fruiting raspberries (*Rubus ideaus*). Not content with feeding on the foliage, specimens were seen feeding on the ripe raspberry fruits.— PAUL T. HARDING, 60 Boxworth Road, Elsworth, Cambridge CB3 8JQ.

The occurrence of *Polia bombycina* Hufn. (Lep.: Noctuidae) as an immigrant

On the night of 2nd June, 1989, two specimens of *Polia bombycina* were taken at light-traps four miles apart at Greatstone and Dungeness, Kent.

With no previous records of this species from this part of Kent, the occurrence of two specimens along a stretch of coastline on the same night is strongly suggestive of continental immigration. This probability is emphasised by the general pale grey ground colour of the forewings of

these two individuals, this character being consistent with continental examples of this species (B. Skinner, pers. comm.). These two examples were, in fact, so atypical of British *bombycina,* they were initially identified as *Polia hepatica* and were only confirmed as *bombycina* by the author in December 1990 while examining a short series of Kent-taken *bombycina* in the collection of A.G.J. Butcher, one specimen being intermediate in appearance between the typical British form and the pale grey examples from south-east Kent.

There must be a strong possibility that this grey continental form of *bombycina* will occur again as a migrant along the British south/east coast and could easily be overlooked, particularly where populations of *hepatica* are established. The main criteria used to separate the two examples of *bombicina* mentioned in this note (both of which were rather worn) from *hepatica* were the faint reddish-brown stigmata, and immediately distal to the reniform stigma; the straight-edged costa giving the forewings a more pointed appearance; and the lack of the black patagial collar shown by *hepatica.*

P. bombycina is a declining species in the British Isles, and it is to be hoped that these two migrant individuals illustrate the potential for its continental recolonisation of areas from which it has recently been lost.— S.P. CLANCY, Delhi Cottage, Dungeness, Romney Marsh, Kent TN29 9NE.

Gatherings of male *Euploea core* Cramer in south-west India

While browsing in Ackery & Vane-Wright's impressive monograph on the Milkweed Butterflies (British Museum, London, 1984) I read on page 70 that the authors invited observations on the reported gatherings of males of the danaid genus *Euploea* Fabr. Accordingly, I offer the following note. I came on what could be termed "leks" of male *Euploea core* Cramer on several occasions in small clearings in the jungles of south-west India during 1943-44. Around half-a-dozen males, with hairpencils extruded, would be slowly circling in a loose formation a metre or so above the ground vegetation. I probably first saw this in the bamboo jungles of the Nilgiri Wynaad. What is certain is that I met with it more than once in the lower-lying, and somewhat dryer, woodland of the Walayar Reserve Forest, which extends southwards from the foot of the Nilgiri Hills to the Palghat-Coimbatore road.— G. PRINGLE, Aldon Farmhouse, Offham, West Malling, Kent ME19 5PJ.

Pairing in flight — an unusual occurrence

On 3rd August 1990 J.M. Chalmers-Hunt and I were investigating a rough hillside near the Neusiedlersee in Burgenland, Austria. There were large numbers of *Cupido minimus* (Fuess) present and I was watching a trio flying about a foot above a large tuft of grass. Suddenly three appeared to

become two and I realised pairing had actually taken place in flight. The couple settled almost immediately onto a projecting blade of grass, where they remained quietly until we left. Conjunction whilst actually in flight must surely be technically difficult and it would be interesting to know if the occurrence has been recorded before in this or other species of butterfly.— C.J. LUCKENS, Swallowfield, Manor Road, Durley, Hants SO3 2AF.

***Macdunnoughi confusa* Stephens (Lep.: Noctuidae) in Hampshire**

On the night of 28th/29th August 1991, I caught an adult *M. confusa* in a m.v. light trap. It was tentatively identified as this species using a standard guide (Skinner, B., 1984, *Moths of the British Isles.* Viking, Harmondsworth). Upon realising its scarcity, I took the live moth immediately to Dr Langmaid who confirmed its identity and in October 1991 displayed the specimen at the Annual Exhibition of the British Entomological and Natural History Society. Skinner lists 16 records to 1983 of this central and southern European species in Britain. Two others were found in 1991 and I know of a record in 1990 (caught on the Isles of Scilly). If these are the only records, the number of British-caught individuals is 20 and the only Hampshire specimen is the one described here.— I. LAKIN, 33 Carmarthen Avenue, Cosham, Portsmouth, Hampshire PO6 2AG.

***Macdunnoughia confusa* Steph. (Lep.: Noctuidae) in Warwickshire.**

On the evening of 4th September 1991 a specimen of *M. confusa* was caught by Mr Iain Reid in his garden light trap at Bearley, Warwickshire. This is only the third county record for this rare immigrant.

I am grateful to Bernard Skinner and the staff at the Natural History Museum for their help in confirming the identity of the specimen.— DAVID BROWN, Jacksons Drive, Charlecote, Nr Warwick CV35 9EW.

The summer brood of *Dichrorampha acuminatana* (Lienig & Zeller) (Lep.: Tortricidae)

During 1989 and 1990 I established a wood on a 12 acre field on my farm. In its early years the wood has more the aspect of waste ground than of a wood. As a lepidopterist I can enjoy monitoring the changes of fauna as the flora changes. To help me do this I have been running two Heath traps one night a week and counting the number of each species in each trap. On 3rd August 1990 I was pleased to take a female of *Cnephasia genitalana* Pierce & Metcalfe; I took another female on 10th August.

In the early summer of 1991 I decided to try to find larvae of *C. genitalana.* From the literature I concluded that the larvae would probably be flower feeders and from the flight time of the adults I had seen, it seemed probable that the larvae would feed somewhat later than most of their congeners. In the second week of June I had a look for larvae on suitable foodplants. The most promising plant was *Leucanthemum vulgare*

Lam., which occurs commonly over much of the area and was in full flower. Moreover there were plentiful signs of small larvae feeding in the flower heads, so I collected a number of heads. The picked heads proved very difficult to keep in good condition in my breeding containers. Probably a vase would have been a more suitable receptacle than a plastic box. Consequently I collected further heads on two subsequent occasions, up to mid-July. By this stage it seemed very unlikely that I was collecting *C. genitalana,* since the pupae, which remained in the fruiting *Leucanthemum* heads, were too small and the abundance of the larvae and pupae was such that I had begun to suspect that they might be *Dichrorampha acuminatana* (Lienig & Zeller), which had been extremely plentiful in the field in May and early June. On 7th August the first *D. acuminatana* emerged, to be followed by about seven more over the next two weeks. Surprisingly, some were reared from each of the containers, in spite of the disgusting state of the earlier collected *Leucanthemum* heads. One hymenopterous parasite was also reared, but no other insects.

All *Dichrorampha* species whose foodplants are known, feed on Compositae, and most feed in the roots or rhizomes, or in a few instances, in the stems of their host plants. I am not aware of any species having been recorded as feeding on flowers or seeds. *D. acuminatana* is apparently unique in this, as it is also in having a second brood. Root-feeding appears to be a slow business, and hence root-feeders are univoltine, at least in the British climate. *D. acuminatana* has found a means of attaining the benefits of a bivoltine life-history without forsaking its roots.

The question arises as to whether summer larvae of *D. acuminatana* ever feed on the roots of their host plant.

On a visit to Portugal in September 1991, I found an interesting parallel to the *D. acuminatana* life-history. On some non-flowering plants which were either *Malva* or *Laverata* I found larvae plentifully within the root top/stem base region of the plants. I managed to rear some of these and they proved to be *Crocidosema plebejana* Zeller, a species known to be a seed feeder on *Laverata* and *Malva.* Probably the species is continuously brooded in the Portuguese climate, and feeds in the stems and roots when seeds are unavailable. Does it do the same in Britain? — M.F.V. CORLEY, Pucketty Farm Cottage, Faringdon, Oxfordshire SN7 8JP.

Rothamsted farmland ecology project: interesting Lepidoptera records for July 1991

Eighteen *Idaea vulpinaria* Herrich-Schäffer were caught in several of the traps during July, including one which has operated since 1964. Only eleven individuals were caught during the whole of 1990. The larger number recorded and the first capture at a long-established site suggests either recent colonisation of the area or the expansion of a small or localised indigenous population. Single *Bupalus piniaria* Linnaeus and *Dioryctia*

abietella Denis & Schiffermüller were caught on 14th July in a trap adjacent to a small stand of Scots pine. The latter has not been recorded previously on the Estate and the former has not been caught since 1951. However, the traps did not operate in this part of the Estate between 1951 and 1990, suggesting that these species have merely been overlooked.

Individuals of *Ostrinia nubilalis* Hübner were caught on 22nd and 23rd. These records may represent an extension of the species' known range as Goater, B. (*British Pyralid Moths*. Harley, 1986) cites only those counties bordering the Thames estuary and a few other coastal localities. Goater (*loc. cit.*) states that in mainland Europe this species is a serious pest of maize. Therefore its distribution in Britain should be monitored carefully.

Several species were caught which are usually associated with wet localities. These include *Apamea ophiogramma* Esper (three individuals), *Parastichtis ypsillon* D. & S. (one), *Phlyctaenia perlucidalis* Hb. (two) and *Calamotropha paludella* Hb. (four). These captures probably represent immigration from another locality as no apparently suitable habitat exists on the Estate. The closest possible origin of these species appears to be the Lea Valley, approximately 2.5km to the north-east. Although examination of the Rothamsted meteorological records does not provide conclusive evidence of the direction of immigration, there were north-easterly winds on 28th and 29th. During this period three of the four species mentioned were caught.

Between 26th and 28th four female *Lasiocampa quercus* Linn. were recorded. Three of these were a very dark form conforming to f. *olivacea* Tutt. The frequency of this form on the Estate will be investigated further in 1992. Emmet, A.M. and Heath, J. (*Moths and Butterflies of Great Britain and Ireland* Vol. 7 (2). Harley, 1991) state that it is not usually found south of Lancashire, Cheshire and Yorkshire.

Thanks are extended to J. Croft for permitting access to the Rothamsted meteorological database. This work is partly funded as a Joint Research Council Agriculture and Environment Programme (JAEP).— ADRIAN M. RILEY and MARTIN TOWNSEND, Farmland Ecology Group, Dept. Entomology and Nematology, AFRC Institute of Arable Crops Research, Rothamsted Experimental Station, Harpenden, Herts AL5 2JQ.

Red-headed Chestnut (*Conistra erythrocephala* D. & S.) in West Sussex

Whilst operating m.v. lights along with David Brown, at Pagham Harbour on 29th October 1991, a strong south-westerly wind direction became a lighter south-easterly, with a minimum of 51°F. Little appeared around the lights on inspection at 11.45pm. However, conditions later improved and inspection at dawn produced a male *C. erythrocephala* ab. *glabra* in fine condition. This would appear to be the first recorded example of this moth in Britain since 1945.— ANDREW GARDNER, Jackson's Farmhouse, Charlecote, Nr Warwick.

The Scarce Forester (Lep.: Zygaenidae) rediscovered in south-east Kent

Whilst sweeping for coleoptera at Whinless Down, Dover on the afternoon of 1st June 1990 I encountered several specimens of an unfamiliar moth. One was retained for identification and this proved to be *Adscita globulariae* Hübner. The weather was cool and overcast and the moths were not very active, even when disturbed by the sweep net. Mr J.M. Chalmers-Hunt informed me that *globulariae* had not been recorded from the Dover district since the end of the 1940s. The larvae are believed to develop on *Centaurea* although my specimens were mostly taken by sweeping *Poterium*.—L. CLEMONS, 14 St John's Avenue, Sittingbourne, Kent.

The Marbled Green *Cryphia muralis muralis* L. (Lep.: Noctuidae) in Wiltshire

In this note I will not attempt to compile a list of the published records of *C. muralis muralis* in Wiltshire. Any researcher attempting to locate them in the entomological literature would find them few and far between.

De Worms, C.G.M. (1962, *Macrolepidoptera of Wiltshire,* Wiltshire Archaeological & Natural History Society, Devises) describes it as very rare and only cites records in the last century, and South quotes Barrett in stating that it occurs in Wiltshire (South, R. 1961, *The Moths of the British Isles,* Warne, London). I do not know if Barrett's references were the same as those records quoted by De Worms but they focussed attention on the west and north-west of the county. However, the number of **published** records since 1962 appear to show an increase but are still infrequent.

Since the late 1970s when I started to operate an actinic light at my present address I have taken *C. muralis muralis* annually and on infrequent occasions *C. muralis impar* Warren. My brother at Steeple Ashton, about three miles to the east also takes *C. muralis muralis* in his trap although less frequently than I. About five years ago I discussed the matter with the late Mr B.W. Weddell who had lived in various domiciles all within about half-a-mile of my own house. He informed me that from about the early 1960s he also had taken *C. muralis muralis* and the form *impar* at all his addresses. Not all of his records (of which there were several) were published.

Most years I record less than ten specimens but during July 1989 I had unusually high numbers culminating on the night of 16th July with a remarkable 24 in my light trap, including a single *impar*.

The time in which I recorded the species extended over only about twelve days. I can assume the fine weather of that summer had concentrated the emergence.

During 1991 I had only two specimens in my trap. Continuing hot summers with very dry seasons, at least in this locality, could do more harm than good to *C. muralis muralis*.

In 1990 I had only five specimens and my brother at Steeple Ashton had

a single specimen, all in early August. I suspect that without the advantage of a permanent light trap this could, during average years, be a difficult species to encounter in Wiltshire.

The geology of this part of Trowbridge is cornbrash, and my brother's farm at Steeple Ashton is situated on Oxford clay, a matter of yards from the juxtaposition of Oxford clay and corallian limestone. In this case I think that they could be either resident at low density around his farm buildings or wanderers from some close location on the adjacent limestone.

It is also worth noting that apparently the discovery of its presence coincided with the advent of the m.v. light, so I assume *C. muralis muralis* has been here for a good deal longer than records indicate. It is strange that apart from a mere handful of records, the true status of *C. muralis muralis* in Wiltshire should remain virtually unknown to the outside entomological world, and yet to a small number of local lepidopterists it has been known as an inhabitant of regular appearance in west Wiltshire for almost thirty years.

There is a possibility that *C. muralis muralis* is resident in other parts of Wiltshire with suitable geology such as the Chippenham and Wroughton areas from whence other records have emanated from time to time. The species is probably at low density in all areas. It is worth noting that the species was recorded in the past in the Bath area which is linked geologically with west Wiltshire via Box and Bradford-on-Avon. These areas and other localities on Wiltshire limestone are rarely visited by lepidopterists, which may account for under-recording. I suspect that *C. muralis muralis* is most frequent in urban situations. The Marbled Beauty (*Cryphia domestica* Hufnagel) also occurs and is the more common insect.— M.H. SMITH, 42 Bellefield Crescent, Trowbridge, Wilts.

Cryphia raptricula (Marbled Grey) in Kent during 1991

On 31st July 1991 I took a fine, large example of this species at my house at Dungeness, Kent. Incredibly this was the first of four specimens to be taken in the area during the year. Two examples were taken by R.E. Turley from his garden trap at Greatstone on 7th and 26th August, and another was taken by K. Redshaw in his garden at Lydd on 22nd August. These four specimens represent only the seventh to tenth British records of this species, the fifth and sixth records also having occurred at Dungeness on 20.6.83 and 30.7.90. The first four British examples occurred as follows: Arundel, Sussex, 12.8.1953; Southsea, Hampshire, 18.8.1955; and Sandwich area, Kent (two), 9.8.1969. Considering that six of the ten British specimens of *C. raptricula* have occurred in the Dungeness area, all recently, the suggestion of local breeding must be strong. To add credence to this possibility, the four 1991 records were apparently unassociated and none coincided with an arrival of continental immigrants. Conclusions are, however, difficult to draw regarding the origin of the recent British specimens. Weather conditions during the period when all the 1991

specimens were taken were not inconsistent with a north-westward cross-Channel immigration, and the 1990 specimen did arrive with other continental Lepidoptera. All the British records have occurred in S.E. England from Kent to Hampshire, indicative of a short-distance cross-Channel migrant, and in Europe, the species has recently extended its range northward and westward into the near-continent (Heath, J. and Emmet, A.M. 1983, *The moths and butterflies of Great Britain and Ireland.* Vol. 3, Harley Books, Colchester). It is possible that the combination of Dungeness' proximity to continental Europe, and the high concentration of m.v. traps in the area (at least five fixed-site traps run throughout the 1991 season), have produced the preponderance of recent records of this species from the Dungeness area. However, even if *C. raptricula* is not yet breeding within these shores, the recent apparent upsurge of records must indicate the likelihood of it doing so in the not-too-distant future.— SEAN CLANCY, Delhi Cottage, Dungeness Road, Dungeness, Romney Marsh, Kent TN29 9NE.

Beginner's luck with hawkmoths

At 10pm on Monday 16th September 1991 I was telephoned by Dr and Mrs Bellamy from Boscombe who assured me they had caught an *Agrius convolvuli.* It had flown into their kitchen and landed in a saucepan, so they put the lid on it and called me. The lid fortunately was glass, so it was immediately apparent that they had indeed caught a very old and battered female *A. convolvuli.*

On Sunday 22nd September we were out during the day, and on our return found a note from the Bellamys who had called in our absence, having found, according to their note "this bloody big caterpillar" on Cranborne Chase, and had left it in a butterfly net we keep in the conservatory, holding it down with bricks. Notwithstanding the bricks, the larva, an *Acherontia atropos,* had escaped and was walking round the periphery of the conservatory looking for somewhere to pupate: we were happy to oblige with suitable accommodation.

So . . . *A. convolvuli* and *A. atropos* in one week. An auspicious start!— JAMES FRADGLEY, The White House, Merley Park Road, Ashington, Wimborne, Dorset BH21 3DB.

Unusual occurrence of *Lithophane ornitopus* (Lep.: Noctuidae) in mid-Sussex during autumn 1991

Up until 1991 *Lithophane ornitopus* has been sporadic in its appearance in my area of Sussex. I first found it in 1985 (two seen) and 1986 (two seen) and then in 1990 (three seen), all moths appearing in the autumn.

I was therefore surprised to find 18 between 20th September and 5th November 1991. The moths were found in three localities — at street lights near my home, at a shop window in my local village and at Burgess Hill

railway station, the next up the line. Six moths were found at each locality and each moth was marked with Tipp-Ex and released. None of the marked moths was caught again. It will be interesting to see if any of them appear next spring.— DENNIS DEY, 26 Manor Avenue, Hassocks, West Sussex BN6 8NG.

Recent publications

The moths and butterflies of Spurn by **B.R. Spence.** 122pp; 4pp black and white illustrations. Spurn Bird Observatory, 1991. Price £5.50 (available from SBO, Kilnsea, Patrington, Hull HU12 0UG).

The author of this well-produced publication is the Warden of the Spurn Nature Reserve. He has operated a mercury vapour light for the past 22 years on the Spurn peninsula, one of the more important sites for lepidoptera in Yorkshire with a total of 639 species recorded, of which 44 are the only records for that county.

As well as personal records, the author has collated records from other sources to produce a comprehensive coverage of the lepidopterous fauna over the last century. The main section of the book is a systematic list of the species, but also includes information on the history of collecting and details, with photographs, of the main habitats that comprise Spurn.

There is a full bibliography, map and supplement covering most recent records of new species.

Mosquitoes by **Keith R. Snow.** 66pp, 4 colour plates, numerous text figures. Naturalists' Handbook No. 14. Richmond Publishing, 1991. Price £7.95 (paperback), £13.00 (boards).

This volume in a very useful series of handbooks provides a general introduction to mosquitoes and their life histories, a wealth of information of study techniques, and copiously illustrated keys to the 32 recorded species. Several versions of the keys are given: eggs, larvae, pupae and adults to genera and additionally fourth-instar larvae to species and adults to species. There are also more detailed notes on individual species, a bibliography and index.

The keys are simple to use, although some of the anatomical terms are likely to slow down the inexperienced student. Most of the keys are illustrated with line drawings which are very helpful, although some would have benefitted from being a little larger.

The butterflies and moths of Radipole School by **Neil Arnold.** 32pp, map. Price £1.50 from the author, Radipole County Primary School, Manor Road, Weymouth, Dorset.

This interesting little local list is a brief account of the study of lepidoptera at the school between 1975 and 1991, covering the butterflies and larger

moths. A total of nearly 400 species from a primary school nature reserve near a large town is very impressive. The introduction covers some of the difficulties faced by a school in running such a survey from lack of funds to replace a failed bulb, to a trap on a teaching block roof catching fire.

The main part of the booklet is a list of species, containing data on frequency, mean annual catch and peak year for each species. Dates for singletons are given. An appendix lists the migrants taken, which include *Hyles lineata livornica* and *Utetheisa pulchella*! If more schools were to have similar projects, the future for nature awareness and entomology would be greatly enhanced.

Insects, plants and microclimate by **D.M. Unwin** and **S.A. Corbet.** 68pp, 4 colour plates, text figures. Naturalists' Handbook No. 15. Richmond Publishing, 1991. Price £7.95 (paperback), £13.00 (boards).

This volume in the series of handbooks is a marked departure from previous ones in that the identification keys are vanishingly few — and those that are there could arguably have been omitted. This is a book, both informative and practical, on a topic that we all know is important, but few of us know anything about.

Chapters cover weather and microclimate, conditions near the ground, plants and insects and microclimate, measurement, humidity calculations, presenting microclimate data and details of hardware requirement — heavily biased towards DIY versions. Apart from simply being an interesting book to read, the practical information given will be of considerable interest to schools, colleges and universities in designing field and practical work on this topic. There is also plenty of scope for the interested amateur to experiment, and, importantly, to understand some of the physical conditions that influence and determine insect behaviour.

Field guide to the butterflies and moths of Britain and Europe by **H. Reichholf-Riehm.** 288pp, numerous colour photographs. Paperback. Crowood Press, 1991. Price £8.99.

This edition is a revised English language edition of the German version published in 1983. Despite its title, it has none of the key attributes of a good field guide — covering only 468 species in total. Despite this, it is a visually attractive book with most of the species it deals with illustrated in colour. A thumbnail sketch covering description, habitat, distribution, abundance, flight time, life cycle and foodplants is given alongside the photograph.

The illustrations are generally good, both aesthetically and technically. There is a slight crisis of style where excellent photographs of some species in natural pose sit next to set specimens of others. Some of the more interesting larvae are also illustrated. Most of the species covered are found in Britain.

Provisional atlas of the larger Brachycera (Diptera) of Britain and Ireland by **C.M. Drake.** 132pp, 63 maps. Institute of Terrestrial Ecology, 1991. Price £5.00.

The larger Brachycera include some of the most spectacular flies found in Europe, many of which are uncommon in the British Isles. This atlas covers all the species in the families Stratiomyidae, Xylomiidae, Xylophagidae, Rhagionidae, Tabanidae, Asilidae, Therevidae, Scenopinidae, Acroceridae and Bombyliidae.

There is a brief account of the occurrence and habitat of each species, together with maps of the distribution of some 60 species. There is also a table of the vice-county records.

Population dynamics of forest insects. Eds **A.D. Watt, S.R. Leather, M.D. Hunter & N.A.C. Kidd.** 408pp. Numerous figs and tables. Boards. Intercept, Andover. 1990. £40.00. ISBN 0-946707-28-6.

This book presents the proceedings of a conference held in Edinburgh in September 1989. Participants from Europe, North America and Australasia have supplied thirty-six contributions which are divided between four sections: ''general population studies'', ''insect-plant interactions'', ''insect-natural enemy interactions'' and ''population models and pest management''. A common goal is a better understanding of the reasons why population densities of ''pest'' species vary greatly in space and time.

Several examples are described in which pest outbreaks are strongly influenced by foodplant quality, itself conditioned by host stress. These include intermittent water stress in Sitka spruce attacked by the green spruce aphid (E.J. Major), drought stress on Australasian eucalypts attacked by various leaf-feeders (G.P. Hosking *et al.*; I. Abbott) and pollution stress on aphid-infested pine and spruce (S. McNeill & J.B. Whittaker). Normal changes in plant quality during the growing season can also be important because of variability in their degree of synchrony with insect life cycles; this applies both to aphids (A.F.G. Dixon) and to leaf-eaters (M.D. Hunter & C. West; A.D. Watt).

Some contributions deal with the effects of insect feeding on foodplant quality; either activation of host defects (including the ''rapid induced response''), or enhancement of quality. Opposite effects can occur in a single host/insect system (N.A.C. Kidd). Much of the information on foodplant quality comes from artificial feeding experiments, but S.D. Wratten *et al* question the reliability of some of the techniques involved, especially regarding the ability of laboratory and greenhouse tests to simulate natural conditions.

Foodplant quality can interact with other factors which affect insect populations. Such factors include insect diseases (e.g. the virus GMNPV in

Gypsy moth: J.C. Schultz *et al*) and predation and parasitism, as shown by P.W. Price's studies of a shoot-galling sawfly of willow, *Euura lasiolepis,* whose protection from natural enemies depends on high plant quality favouring the formation of large and well-formed galls. Price questions conventional ideas about the relative roles of natural enemies and plant quality in controlling pest outbreaks.

The relative importance of specialist and generalist predators and parasitoids is discussed in relation to biological control. This may fail if density-dependent specialists are used alone (e.g. against Gypsy moth; N.J. Mills), but failure can occur anyway if the pest build-up is regionally overwhelming (J.S. Elkington).

Environmental factors, as well as affecting foodplant quality, can influence insect survival directly, as in the case of winter temperature and the Green spruce aphid (K.R. Day & S. Crute), or indirectly through ecological effects. For example, predators of the Pine Beauty moth in Scotland find fewer habitat niches on deep peat sites surrounded by moorland than on more diverse sites (P.J. Walsh). Environmental stress can also make the host trees themselves more suitable as refugia against predation (e.g. "bark-flap" refugia for Gypsy moth on stressed and defective trees; M.E. Montgomery citing work by D.R. Houston in the north-eastern USA).

A few contributions mention additional factors which control populations, such as inter- and intra-specific competition between insect herbivores. There is also a suggested effect whereby sparsely distributed tree species carry low insect populations because they lose many migrants and gain few immigrants (A.F.G. Dixon). The converse applies to abundant tree species. This may, however, be an over-simplification (M.F. Claridge & H.F. Evans).

The section on population models gives some useful insights into the reasons for their success or failure. Simple theoretical models can work better than those which try inadequately to represent many biological variables (A.A. Berryman *et al*), but can fail when large-scale extrapolations are made from local populations (R.A. Fleming). The practical value of models for the fine-tuning of control measures is shown in the case of the Green spruce aphid in Sitka spruce nurseries (S. Crute & K.R. Day).

The inevitable overlap between the volume's four sections could create a little confusion for the reader but this is partly offset by a reasonably extensive index. Major index entries such as "Lepidoptera" have been subdivided, avoiding impenetrably long lists of page numbers. However, the indexing of subjects is far from comprehensive, so that some fairly important entries have not been included; e.g. "bio-assays" in contribution No. 13. The contributions cover a wide range of topics, but it is unfortunate that they deal only with leaf-eating and sap-sucking. Most are fairly readable but the few exceptions reveal some lapses in editorial rigour. In general, this book will be very useful to research workers and to anyone with an interest in insect ecology.

DAVID LONSDALE

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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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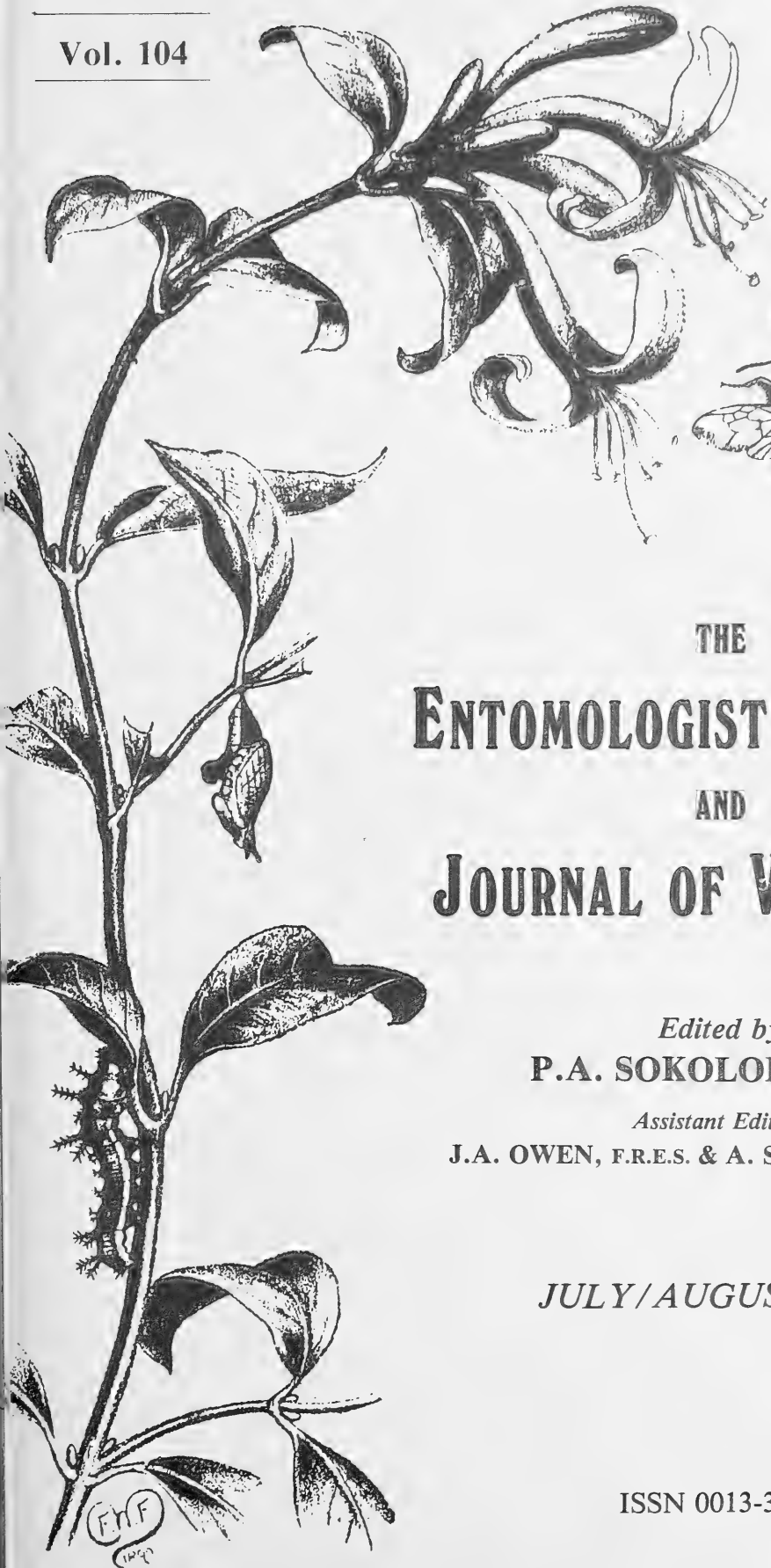

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NOTES ON THE EARLY STAGES OF *COLEOPHORA LUTIPENNELLA* (ZELL.) AND *C. FLAVIPENNELLA* (DUP.) (LEP.: COLEOPHORIDAE)

B. GOODEY

298 Ipswich Road, Colchester, Essex CO4 4ET.

MOST RECORDS of the two oak-feeding coleophorids *C. lutipennella* and *C. flavipennella* will have been made either by netting imagines or by collecting the overwintered cases and rearing these through to the adult stage prior to dissection. Recently, however, it has been realised that during the autumn one species constructs its first case by incorporating a small section of leaf, while the other species makes its initial case entirely of silk. This slight difference in the biology of the pair was first noticed at about the same time by A.M. Emmet and R.W.J. Uffen (Emmet, pers comm.). Unfortunately in captivity both species prove difficult subjects to overwinter; even sleeving cases on the foodplant appears to fail for no obvious reason.

During October 1990 Maitland Emmet and I visited Friday Wood, a locality just to the south of Colchester where both species are abundant, and collected a number of examples of both types which were kept strictly separate. Great care is needed to ensure this separation and many cases had to be rejected where there was any possibiity of confusion. Isolated specimens were selected after a careful search of adjoining leaves revealed whether or not a small portion of leaf was missing from the sites of feeding. Where an all silk-case is found the leaf will be whole, simple peppered by a series of typical Coleophora mines. In the other species feeding is similar, but somewhere on the leaf will be a tiny portion missing. This hole is oval in shape and measures approximately 1mm x 0.5mm. On the underside of the leaf on the edge of this hole is a small, shallow "U"-shaped incision used by the larva to gain entry into the mine (Emmet, pers. comm.). The cut out portion of the leaf is incorporated into the case, probably after first being halved and opened book-fashion: one "page" to each side of the case.

A variety of methods were attempted in order to try successfully to overwinter both groups of larvae, but sadly none succeeded. However, the empty cases were recovered and, to see if any differences between the two groups could be found, subjected to the following treatment:

Each was soaked for ten minutes in a warm solution of 10% KOH in order to soften the silk and help the cleaning process. With a fine angled needle the cases were then slit along the ventral "keel" where the binding is weak, and then opened up. Debris and the remains of the larvae, some shrivelled, others flaccid, were cleared and both inner and outer surfaces brushed clean. The cases were then immersed in absolute alcohol and spread flat, held in this position until remaining flat of their own accord.

At this point subtle differences in size and shape were apparent, those incorporating a section of leaf being generally slightly larger and more

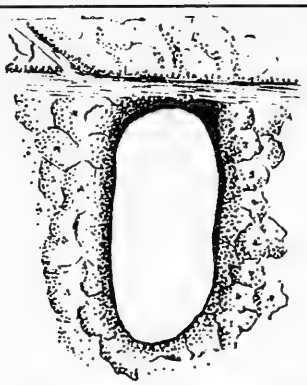

Fig. 1. Oval mined section of leaf with U-shaped incision towards top right, next to vein. Characteristic of *Coleophora flavipennella*. (Scale bar = 0.5mm.)

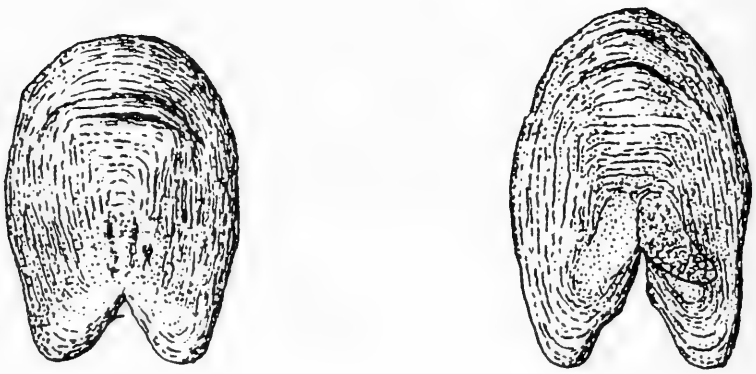

Fig. 2. All-silk case on left (*Coleophora lutipennella*), leaf section case on the right with layer of tissue slightly raised over oval patch (*Coleophora flavipennella*). (Scale bar = 1mm.)

angular in outline. Another feature of this type is a pair of distinct oval patches towards the anal end of the case, surrounded by lines of silk as though the leaf fragment had been used as a template during construction. By carefully rubbing these patches with a fine angled pin on the external wall of the case it proved possible to dislodge a fragile layer of tissue which, in view of its reticulated pattern resembling a network of veins, appears to be the remnant of the leaf section. In the all-silk cases these oval patches are usually missing or greatly reduced in size, and no reticulated layer of tissue is evident.

During April 1991 I returned to Friday Wood and by searching the buds of scrub oaks was able to collect a fair number of post-hibernated and active cases. These were kept in individual plastic tubs and reared until the larvae constructed their final cases, then they were each given a serial number. The now empty first cases were likewise labelled and then examined in the way described above. At this stage the subtle differences already mentioned were somewhat masked by the addition of more silk and by tiny particles of leaf and debris that the larvae add to their cases during

spring feeding and subsequent growth. The original leaf section remains, however, and so cases (and thus final cases) could be separated into two groups based on this feature. No reliable characters could be found to separate the final cases on their own.

The first adults began to emerge on 12th June 1991, were from the larvae that originally constructed all-silk cases, and after dissection were found to be *C. lutipennella*. The "leaf-section" class began to yield moths a few days later and these proved to be *C. flavipennella*. A hymnenopterous parasite was reared from a final case of the latter group, though it remains to be seen whether such predators can distinguish between the cases any more easily than we can!

Fifty-two cases were collected during April. Thirty-four were of the all-silk type and eventually produced twenty-nine adults. Eighteen were of the leaf-section type and these produced twelve adults and one parasite. The remainder died at various stages.

It should be possible to record both species by their autumn mines, even if the cases have wandered away from the initial feeding sites. The presence of an oval hole in the leaf accompanied by the distinctive "U"-shaped incision in the margin can be assigned to *C. flavipennella*. When no such hole occurs, and after careful scrutiny of nearby areas of feeding, the mines are likely to have been made by *C. lutipennella*.

I would like to thank A.M. Emmet for his advice and for the loan of additional mines.

Hazards of butterfly collecting — the Cedars, Lebanon, 1972

Henri Stempffer was one of the giants of butterfly research this century, though I am sure he is unknown to most of my readers. However, almost singlehandedly he reduced to some semblance of order the chaos that was then the Lycaenidae of Africa (presently some 1500 species in a bewildering array of genera). I have no exact count, but Stempffer has described several hundred species and several dozen genera. Most subsequent new descriptions of African Lycaenidae would have been impossible without his painstaking work, often in collaboration with N.H. Bennett of the British Museum (Natural History). All this was done without formal qualifications from a small flat in 4 Rue Antoine, just off the Bastille in Paris, on a small pension from the Banque de France, an even smaller stipend in recognition of his work for the French *Résistance* during the war, and the occasional research grant. His gentle, but firm, wife Kiki provided the necessary anchor. Ironically, he never actually visited Africa.

Stempffer was an immensely helpful man, maintaining a copious correspondence, and he was always willing to put up a passing "African" entomologist in his flat which, in truth, was hardly big enough for his collection. He taught me the skills of genitalia dissection and much else. He

also named *my* first butterfly, *Ornipholidotos larseni,* of which I was prouder than I should perhaps have been — it is easier in Africa to catch an unknown species of butterfly than to recognise it as new!

In 1972 we invited the Stempffers to spend a fortnight with us in Lebanon. He was by then getting on in years, his eyesight failing, and his Parkinson's disease getting worse (vividly illustrated when he offered me some cyanide for a new jar, dug in a spoon, and proceeded to scatter about more cyanide powder in my study than in my jar; my orange work station gradually became spattered with yellow dots where grains of cyanide had interacted with the paint).

Most of our time was spent in a small hotel at "the Cedars of Lebanon", the most famous of the few cedar groves remaining in that country. It is a most beautiful spot and butterflies abound, not least Stempffer's beloved Lycaenidae, including the Polyommatine species, *ellisoni,* which occurs only at the Cedars and the generic affinity of which is still uncertain. Every morning we placed Stempffer in a patch of blue vetches which attracted Blues as well as all other butterflies, from time to time discreetly depositing particularly interesting species in his killing bottle, so that they could be discovered with delight that afternoon.

After dinner we would collect moths for his Heterocerophiliac friends, aided by a Syrian student of English who was working in some unspecified capacity at the hotel during the summer vacation. The student was delighted to find someone who spoke French, and I have, indeed, never met a student of English with so little capacity to speak the language. There were in his Pantheon only four English authors: Shakespeer, Miltonne, Ben Djonsonne, and Ami(s) Kingsley. He had at least reached somewhere with the latter, offering as his opinion that Luckii Djim was not *réellement heureux,* but I suspect this was a conclusion he had not reached entirely on his own. His career ambitions were clear; he wanted to be a tourist guide or an ambassador, having little clue as to what either entailed, a typical example of the frustrations that occur when educational systems expand faster than society can really cope with it. He was a dab hand with the moths though.

My wife and I went to the Cedars again the following years recollecting how much the Stempffers had enjoyed their visit: the scenery, the butterflies, the food, the ambience. The Cedars are at 3,000 metres and on a good day you can see Cyprus, and for the first time, over breakfast in perfect conditions, we dimly made out the Troodos Mountains. An hour afterwards we heard on the BBC World Service that the Turkish army had invaded northern Cyprus. We had just visited Cyprus, even chatted with Archbishop Makarios, and I remember our anguish. Why did such things always have to happen to the nicest of places? Little did we know that a year from now we would be leaving Lebanon to the thump of mortars and the crackle of machine guns which have not yet subsided.—TORBEN B. LARSEN, 358 Coldharbour Lane, London SW9 8PL.

ASPECTS OF THE OVERWINTERING BIOLOGY OF LADYBIRDS IN BRITAIN

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(concluded from page 142)

PART II — NOTES ON INDIVIDUAL SPECIES

The notes contained herein have been produced from data and observations obtained during the Cambridge Ladybird Survey. Some additional information, obtained from the literature, is given with relevant references at the end of the notes for each species. It should be noted that in many cases we have found that our observations on the overwintering sites and the behaviour of ladybirds in Britain are not consistent with those made for the same species by other authors in other countries.

24 spot ladybird (*Subcoccinella 24-punctata* Linn.)

In a range of situations in low herbage, grass tussocks, leaf litter, among heather debris, amongst or under moss on the ground and occasionally (three records) just below the soil surface. Sometimes recorded in small aggregations, particularly in mats of sea plantain (Fowles, pers. comm.). It becomes active in warm periods throughout the winter and may then feed on its normal plant food.

13 spot ladybird (*Hippodamia 13-punctata* Linn.)

This species has not been recorded in Britain during the Survey, nor have I been able to find any previous records or observations of it in the winter months in Britain. Hodek (1973) gave only one reference to the species in winter, quoting Thomas (1932) who refers to it overwintering on cedar trunks.

Adonis' ladybird (*Adonia variegata* Goeze)

The observations of this species are based on records from just two colonies. In north Staffordshire, the species has been found in dry leaf litter under hawthorn and oak, on heather, gorse, furze, bilberry and broom. In south Wales the species has been found in the dead foliage around the crowns of strawberry plants, in dead umbellifer stems and in leaf litter under fruit trees. Similar sites have been used for several consecutive years.

Water ladybird (*Anisosticta 19-punctata* Linn.)

By far the majority of records are of single or small groups of individuals between the leaves and stems of *Typha* and *Phragmites* reeds. Occasional records from low herbage grassland or in grass tussocks close to reed beds. The majority of those in *Typha* select dry sites in plants of the current year

usually 15 and 60 cm above water or mud level. They show a preference for reeds growing in water or mud, rather than those that have invaded the banks. If a rise in water level threatens them, they will move up the leaves or stems until they reach the top. If the top of the stem becomes submerged they will then move to another stem. Should an individual be dislodged from its retreat between the reed blades and stems, so that it falls into the water, it splays its legs and floats. After a short time with no contact with a solid object, the ladybird will begin to move its legs to increase its rate of movement across the surface. In effect the ladybird swims, although without obvious orientation.

When water ladybirds leave their overwintering sites they move quickly from the old reeds to young reeds which have recently emerged through the mud or water, there to seek young aphid colonies.

Larch ladybird (*Aphidecta obliterata* Linn.)

From the Survey records, the most usual overwintering site for this species appears to be in crevices in the bark of needled conifers, including Scots pine, larch, Sitka spruce, Douglas fir, Corsican pine, cedar and lodgepole pine. However, a substantial number of records have also been received for other situations on conifers, particularly on trunks between moss and bark, in the foliage of needled evergreen conifers, tucked into large cones, and pressed against the twig bud nodules of larch. A small number have also been recorded under the bark of deciduous trees such as oak and sweet and horse chestnut. Choice of site on tree trunks appears to be random with respect to aspect.

Parry (1980) reports that in Crabstone Forest, Aberdeenshire, overwintering adults were primarily located beneath bark scales of Sitka spruce, with occasional individuals being found in crevices in the bark of larch and pine species, while a small population remained on the foliage of Douglas fir. It is probable that the proportion that remain amongst foliage in the south of Great Britain is greater than further north. The difference is probably related to differences in climate. Brown and Clark (1959) have suggested that successful overwintering is dependent primarily on temperature. The exposure of overwinter sites may also be critical. Graf and Kriegl (1968) showed that in south-east Norway, where temperatures as low as $-42°C$ were recorded in January and February, low mortality levels were observed for sheltered sites at trunk bases; mortality levels were higher in more exposed positions further up the tree. Parry (1986) has proposed that the winter climatic conditions in Britain are not sufficiently rigorous to eliminate adults which remain in unsheltered positions on conifer foliage during the winter. Parry (1980) concludes that several factors, specifically low temperature, lack of water and possible fungal attack, were significant mortality factors in his study of overwintering Larch ladybirds in Scotland.

16 spot ladybird (*Micraspis 16-punctata* Linn.)

A highly aggregative species with groups of several thousand being recorded quite frequently. Sites chosen are diverse and include plant litter,

grass tussocks, reed-mace stems, gorse and furze bushes, oak, birch and elm trunks, fence posts, brickwork of boundary and building walls and dry stone walls. In many cases large aggregates are reported on one specific site when other apparently similar sites close by are devoid of the species, or nearly so. Williams (1960) records a large number of 16 spots on a gate post at Rothamstead in November 1935. Several thousand were congregated near the top on the south side of a single post, with scarcely any on the post at the other side of the gate. Similar observations have been reported during the survey with large aggregates being reported on a single gorse bush (Majerus, pers. obs.), oak trunks up to nine metres above the ground (Albrecht, pers. comm.), on the outside of a barn wall (Riddell, pers. comm.), fence posts (Walker, pers. comm.), concrete wall of a building (Hobbs, pers. comm.), on stems of *Rumex obtusifolius* (Gillam, pers. comm.), and in a small section of a dry stone wall (Smith, pers. comm.), with closely adjacent similar sites being more or less unattended. The 16 spot may become active during the winter and at such times it has been observed both drinking and feeding (Majerus, pers. obs.).

2 spot ladybird (*Adalia 2-punctata* Linn.)

Most commonly encountered in houses where it usually overwinters in groups of from ten to several hundreds or even occasionally thousands in the corners of cool rooms, around window frames, in double glazing (including supposedly sealed units) and in unused chimneys. Outside it overwinters exposed on tree trunks, in bark crevices and under bark, usually of deciduous trees, and in cracks in fence posts and telegraph poles.

10 spot ladybird (*Adalia 10-punctata* Linn.)

Overwinters in leaf litter and plant debris close to the ground, usually under hedgerows or in deciduous woodland. Can often be found in beech nuts or in the cases of horse and sweet chestnuts. Occasionally found under loose bark of deciduous trees or amongst foliage of conifers. Usually found singly or in groups of two or three. Records of 10 spots in litter under rhododendrons (Eastop, pers. comm.) suggest that the species may move some way from its feeding site to find a suitable overwintering refuge.

7 spot ladybird (*Coccinella 7-punctata* Linn.)

Utilises a very wide range of overwintering sites. In general any situation sheltered from high wind may be used except buildings, which, relative to the abundance of the species, rarely offer winter accommodation. In more wind-exposed habitats, the sites most often used include leaf litter, hollow plant stems, dead foliage of standing plants such as thistle and bracken, cracks in fallen wood, grass tussocks, tight packed vegetation of herbaceous plants, particularly ornamental grasses such as pampas grass, and the foliage of many evergreen trees and shrubs, particularly gorse, needled pines, firs and spruces, heather and ornamental conifers such as

Cupressocyparis x leylandii. A small number of recorders have reported 7 spots overwintering below the soil surface. Occasionally reports are made of 7 spots overwintering in large numbers on hill tops. Such records are common from the continent, particularly southern and central Europe (see Hodek, 1973; Hodek *et al,* 1989), but are rare in Britain where we have received just three such sightings, from the Lake District (Robins, pers. comm.), the North Yorkshire Moors (Salter, pers. comm.), and from near Dundee (Payne, pers. comm.). Small groups of ladybirds were reported in 1986 overwintering in snail shells on the edge of mixed oak and sycamore woodland with an understorey of privet and box (Smith, pers. comm.). In sheltered habitats, where the wind penetrates little, such as deciduous woodland, more open situations such as branch clefts on exposed bark of tree trunks and branches are used, particularly in mild winters.

From late January, 7 spots may often be seen sunning themselves on a suitable vantage point on bright days. The activities of such ladybirds have been monitored by several of the Cambridge Ladybird Survey recorders. In general most of the 7 spots that sunbathe in January, February and March return to sheltered positions as soon as the sun has left them. Most return to the spot they crawled from in the morning. In most years they do not begin to roam more widely and disperse to seek food, mates and oviposition sites until April. However, in 1989, main dispersal in southern England and East Anglia was in March. In 1990, many 7 spots were observed flying in late February, with matings being seen as early as 25th February. The mechanism that initiates early emergence from and dispersal from overwintering sites is probably either directly or indirectly related to food availability. It may be that if ladybirds, on early forays from overwintering sites, find food, they do not return to their sheltered refuges. Alternatively, it is possible that, as the likelihood of aphids being available in the early spring will be dependent on the severity of the previous winter weather, ladybirds have some ability to discern this likelihood from their previous experience through the winter. The change in date of emergence from the dormant state in these mild winters in Britain, suggest that either temperature or food availability are important in the breaking of dormancy. These findings can be contrasted with those of Hodek *et al,* 1977; Hodek and Ruzicka, 1979; and Hodek *el al* 1984, for this species in central Europe and Asia. They showed that day length coupled with the duration of previous dormancy are important factors in relation to the timing of the resumption of activity, mating and oviposition, although there is considerable plasticity in response, and different subspecies may have opposing photoperiodic responses.

5 spot ladybird (*Coccinella 5-punctata* Linn.)

We have very few records of this rare, habitat specific species. All our records come from, on, or close to unstable river shingle banks in west

Wales. Here the ladybirds have been found under stones on the shingle banks, in positions which would undoubtedly be intermittently flooded during the winter (Majerus and Fowles, 1989). Some individuals have also been recorded amongst plant litter at the edge of shingle banks.

11 spot ladybird (*Coccinella 11-punctata* Linn.)

Overwinters in a wide range of situations, most usually in plant litter close to the ground, in dead dry foliage of herbaceous plants, particularly thistles, and in foliage of gorse bushes, but also more rarely inside houses, under bark and amongst the foliage of conifers.

Scarce 7 spot ladybird (*Coccinella magnifica* Redtenbacher)

This species has a strong association with ants, particularly the wood ant, *Formica rufa* (Donisthorpe, 1939; Majerus, 1989) and is rarely found far from a nest of this species. It overwinters in sheltered situations near to ants' nests (usually within 50 metres). Sites chosed include leaf litter, curled up dead bracken fronds, gorse and furze bushes, heather foliage, pine foliage and bark crevices.

Hieroglyphic ladybird (*Coccinella hieroglyphica* Linn.)

Overwinters in litter under heather, or amongst heather foliage. It is also occasionally found higher up amongst the foliage of trees and bushes that overhang heather on acid heathland, particularly Scots pine, Corsican pine and gorse.

Cream-streaked ladybird (*Harmonia 4-punctata* Pontopiddan)

Almost invariably on Scots pine or other *Pinus* spp., where is resides under bark, in crevices, or more rarely amongst the foliage of the pines. The species, which is a Scots pine specialist, is known to disperse to deciduous trees to seek food late in the summer. However, I have not received any records of it overwintering except on conifers, suggesting that individuals which feed up for winter on deciduous trees, return to pines before becoming dormant.

Orange ladybird (*Halyzia 16-guttata* Linn.)

Most commonly overwinters in leaf litter below or near sycamores, but may also overwinter amongst foliage of Scots pines where these occur alongside sycamores. In mild winters it will overwinter in exposed positions on the trunks or under lateral branches of deciduous, or very occasionally coniferous trees, favouring the side away from the prevailing wind (Fowles, 1990). Other recorded sites include leaf litter under oak woodland and under ivy foliage on a dry stone wall. In some years, late developing larvae may pupate in September, October or even November (one record). Low temperatures soon after pupation may then arrest imaginal development, so that a small proportion of the population overwinters in the pupal stage, adults emerging from these pupae in early spring (Majerus and Williams, 1989).

18 spot ladybird (*Myrrha 18-guttata* Linn.)

Overwinters on standard and plantation Scots pine, usually high in the crowns of mature trees. The preference for crowns is strong (see table 4). Within the crowns the ladybirds select a sheltered site in bark crevices, in branch or twig joints, between twigs and cones, or amongst closely packed foliage. In Finland, Pulliainen (1963, 1964) showed that this species overwinters in bark crevices close to the base of the trees.

22 spot ladybird (*Psyllobora 22-punctata* Linn.)

Most commonly overwinters in low herbage in grassland, often at earth level, in hollow plant stems, or between grass or reed blades. More rarely reported amongst foliage of gorse or in curled leaves of deciduous trees which fall late, particularly oak, hawthorn and beech. Occasionally recorded in large aggregates in grass tussocks. It will become active during the winter, and has been observed both feeding on mildew and drinking during such periods of activity.

Table 4. Results of investigations into the overwintering sites used by the 18 spot ladybird (*Myrrha 18-guttata*) following high wind blow-downs in 1987 and 1990.

Type of branches beaten	Number of trees	Time spent beating (minutes)	Number of 18 spot found
Crown (top 3 metres) branches of standard trees	3	10	1
Lower branches of standard trees	3	15	8
Crown (top 3 metres) branches of plantation trees	6	20	1
Lower branches of plantation trees	6	20	11

(a) Numbers of 18 spot ladybirds found by beating branches of fallen Scots pine on 19th October 1987, following the gales of 15/16th October 1987, at Grimes Graves, Suffolk (OS ref. TL 820900).

Date	Number of trees	Distance of branches from tree apex (metres)			
		0 - 3.0	3.01 - 6.0	6.01 - 9.0	Lower
25/26 Jan.	16	49	18	3	7
27/28 Jan.	13	56	29	12	2

(b) Number of 18 spot ladybirds beaten from fallen pines in west Hampshire and east Dorset on 25/26th January 1990, and in Thetford Forest, Suffolk on 27/28th January 1990, following the gales of 24th January 1990. All trees were mature Scots pine growing in open situations on *Calluna* dominated heathland. Trees were divided into three sections of three metres, from the primary apex. The fourth section being all branches more than nine metres from the apex. Five minutes was spent beating each section. Time spent searching the debris in the beating tray was not included.

Cream-spot ladybird (*Calvia 14-guttata* Linn.)

Overwinters in a diverse range of sheltered situations generally in deciduous woodland or deciduous hedgerows. Sites include leaf litter, bark crevices, particularly oak and elm, in curled up dead bracken fronds, in beech nuts, and sweet and horse chestnut shells. In mild winters they have been found on the smooth bark of deciduous trunks such as ash, hazel and sycamore and under lateral branches and twigs of these trees. A univoltine species with a so-called "obligatory" diapause, i.e. a dormant period which cannot be prevented by modifying environmental conditions (Sem'yanov, 1980).

14 spot ladybird (*Propylea 14-punctata* Linn.)

In a diverse range of sites usually close to the ground and normally singly, or rarely, in groups of two or three. Typical sites include leaf litter, hollow plant stems, the foliage of low growing perennial plants, grass tussocks, curled leaves of dead plants. Very occasionally it has been recorded amongst the foliage of low Scots pine branches and gorse, and in buildings.

Striped ladybird (*Myzia oblongoguttata* Linn.)

It is not known where this species normally overwinters. I have found no records in the literature of this species being observed between November and February in Britain. The records I have received for these months are given in Table 5a. As with the Eyed ladybird (see below), this species seems to disappear from pines in late September, or early October, and reappears in March. It may therefore have the same basic behaviour as the Eyed ladybird. However, unlike the Eyed, it has not been observed in any numbers in low herbage in the spring. So the suggestion that it may overwinter below ground is even more speculative than that for the Eyed.

Eyed ladybird (*Anatis ocellata* Linn.)

We have few records of this species between October and November. Table 5b gives a list of records between 1st November and 28th February. Evidence suggests that the ladybirds do not remain on their most usual host tree, Scots pine, during the winter. Although the normal overwintering site of this species has not been discovered, it is my opinion that it overwinters subterraneanly, or at earth level, under moss or dense ground vegetation. This opinion is based on observations of Eyed ladybirds in March and April, when the species may be found quite commonly on low growing plants where they often sun themselves before dispersing to pine trees. At one site in King's Forest, Suffolk, this behaviour has been observed each spring from 1985 to 1989. I have been able to find no reference in the literature of the normal overwintering site of this species.

Kidney-spot ladybird (*Chilocorus renipustulatus* Rossi)

In most years, the Kidney-spot moves, in the autumn, to sheltered positions on, or around, the base of host trees, particularly sallow, willow, ash, poplar, birch and alder. A few individuals appear always to remain in

Table 5. All winter records of the Striped ladybird (*Myzia oblongoguttata*) and the Eyed ladybird (*Anatis ocellata*) from the Cambridge Ladybird Survey between 1984/85 and 1989/90. Records of active individuals on Scots pine in January and February 1989/90 are not included.

(a) Striped ladybird

Date	Location	Details of site
Dec. 86	Marangie Forest (NH746836)	On young fallen Scots pine.
Dec. 88	Cadnam, Hants.	In moss on ground in mixed age Scots pine.
Dec. 89	Brandsby Coulton, Yorks.	On wooden hut.
Dec. 89	Picket Hill, Ringwood, Hants.	On earth under fallen Scots pine branch.
Jan. 90	Lakenheath Warren, Suffolk.	In moss beneath mature Scots pine.

(b) Eyed ladybird

Jan. 89	King's Forest, Suffolk.	Under leaf litter in mixed sycamore Scots pine wood.
Jan. 89	Chobham Common, Surrey.	Two, under bark of fallen birch tree.
Feb. 89	Old Warden Warren, Beds.	Amongst pine needles under Scots pine.
Feb. 89	Bank Wood (SE658742).	Under log in mixed oak/conifer wood.
Feb. 89	Burley, Hants.	In pine litter in mature Scots pine wood.
March 89	Brandsby Coulton, Yorks.	In deep leaf litter beneath rotting pine log.

sheltered situations higher on the tree trunks and branches. The proportion that remain higher up the tree trunks appears to be inversely correlated with the severity of the winter, so substantially more were recorded in such situations during the mild winters of 1988/89 and 1989/90 than in the early winters of the survey (Majerus, pers. obs.). Indeed, in mild winters some Kidney-spots remain at least partially active and, during mild periods, feed on coccids on the trunks and branches of their host trees. Other recorded sites include, in stone walls, under moss on limestone blocks and in soil away from trees.

Heather ladybird (*Chilocorus 2-pustulatus* Linn.)

Usually overwinters in litter under, or on, the foliage of heather (both *Calluna vulgaris* and *Erica* spp.). It may also shelter amongst the foliage of trees and bushes overhanging heather, particularly Scots pine and gorse. In such situations it has a preference for the north side of trees and bushes, out of direct sunlight. This preference can be contrasted with that of the pine ladybird which exhibits a strong preference for the south side of pines

Table 6. Aspect of overwintering sites of the Pine ladybird (*Exochomus 4-pustulatus*) and the Heather ladybird (*Chilocorus 2-pustulatus*). The number of each species collected by beating for half an hour on the north side of Scots pine trees is compared with the number collected in the same way from the south side. Observations were made on one sunny afternoon in February, each year from 1985 to 1989 at Lakenheath Warren, Suffolk.

	North side		South side	
	Pine ladybird	Heather ladybird	Pine ladybird	Heather ladybird
1985	12	11	388	4
1986	28	17	247	3
1987	5	7	89	1
1988	16	18	289	7
1989	39	13	586	3
Total	100	66	1599	18

as is shown by the results of a series of simple collecting tests described in Table 6. Rarely, the Heather ladybird has been found during the winter amongst the foliage of *Cupressocyparis x leylandii* (e.g. Rumbol, pers. comm.).

Pine ladybird (*Exochomus 4-pustulatus* Linn.)

In Britain, this species occurs most commonly in association with needled conifers, such as Scots pine, Norway spruce and Douglas fir. Most individuals which use these host trees overwinter on the trees, the majority among the needles, with a smaller proportion on unneedled branches and trunks, either in exposed positions, or in bark crevices. Some individuals also overwinter in the foliage of adjacent shrubs, such as gorse and furze. A few overwinter in litter below pines. Parry (1986) notes that in north-east Scotland, this species is only found in the litter around the bases of needled conifers. This is in marked contrast to our records from England and Wales. Presumably, the behaviour of the species in Scotland is a consequence of the greater severity of the climate further north. By choosing overwintering sites in the litter layer, the Scottish pine ladybirds will obtain a greater level of insulation than if they were to remain in more exposed positions on the trunks or amongst foliage of the trees which would provide little buffering from ambient temperatures. Further south, higher winter temperature would reduce the necessity for finding insulated sites. In southern England, those that overwinter on conifers or gorse show a marked preference for the south side of the trees and shrubs (see Table 6) and on sunny days from January onwards may be seen, in very large numbers, basking in the sunshine.

Sizeable populations of the Pine ladybird also use deciduous trees, particularly ash, but also sallow and alder, as host trees. In most years these

populations overwinter around the base of the trees, in leaf litter, in beech nuts, or occasionally in bark crevices that afford a high degree of shelter. However, in particularly mild winters (e.g. 1988/89 and 1989/90) many remain in what appear to be rather exposed positions on the trunks of these trees.

Acknowledgements

I wish to acknowledge with thanks all the recorders of the Cambridge Ladybird Survey who have sent in records over the last five years. The information contained herein is a testament to their efforts. Thanks are also due to Linda Walker, Helen Forge and Heather Ireland who have processed and maintained the Cambridge Ladybird Survey data sets, and to Joanne Griffiths who typed and corrected the manuscript.

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The distribution of *Paroxyna lhommei* Hering (Dip.: Tephritidae) in East Kent

Paroxyna lhommei was added to the British list on the basis of specimens taken in 1974 by A. Stubbs from Sugarloaf Hill, Folkestone. Further specimens were subsequently recorded by several dipterists during the National Recording Scheme visit to Kent in July 1981. Concern was expressed over the fact that the site was earmarked for development in any future Channel Tunnel project and indeed by the end of 1989 the original site had been destroyed by the perimeter fence of the Eurotunnel construction.

I had personally taken specimens at Sugarloaf on 11.vii.1987 but had overlooked specimens which had been collected from Lydden Hill, some eight kilometres to the north-east on 20.vii.1985. To date I have found populations at Coombe and Whinless Downs, Dover and at Sandwich Bay. Mr Stubbs has taken it again at Dungeness. All my specimens have been swept from *Senecia erucifolius* during the first three weeks in July and it would seem likely that this is the larval host plant. The species is now known from five ten kilometre squares along the east coast of the county and, where present, populations are high. There is no shortage of *S. erucifolius* in suitable habitats and it is entirely likely that *Paroxyna lhommei* will continue to establish itself further.— L. CLEMONS, 14 St John's Avenue, Sittingbourne, Kent.

Late emergence times in the Isle of Wight during 1991

Warm south-westerly and southerly winds blew over Britain for the period 22nd November to 3rd December, resulting in thirty-two species of macro-moths being taken on the island with some interesting migrants and some out of season late emergents.

The following late dates which were all recorded at Freshwater are of interest:
23 Nov. *Mythimna l-album* Linn.; 27th Nov. *Chloroclysta truncata* Hufn.; 28th Nov. *Gymnoscelis rufifasciata* Haw.; 1 Dec. *Thera britannica* Turn.; 1 Dec. *Noctua pronuba* Linn.; 2nd Dec. *Caradrina clavipalpis* Scop.; 3rd Dec. *Lithophane leautieri* Boisd.

The most notable migrant taken during this period was the second record for the island of *Thera cupressata* Geyer taken at Chale Green by Mr S. Colenutt on 28th November. *Mythimna vitellina* Hb. was recorded from Freshwater on 27th November and *Mythimna unipuncta* Haw. was taken at Godshill and Freshwater on 28th November, and I took this species again as late as 27th December. *Agrotis ipsilon* Hufn. and *Peridroma saucia* Hb. were also noted during this period.— S.A. KNILL-JONES, Roundstone, 2 School Green Road, Freshwater, Isle of Wight.

Green-veined White (*Pieris napi*) ovipositing on Lesser Swinecress (*Coronopus didymus*)

I was interested to read the note by Mr M.H. Smith about *P. napi* ovipositing on *Aphanes arvensis* (*Ent. Rec.* **103**: 270).

On 26th July 1991, whilst working at Bramber Castle, West Sussex, I observed exactly the same behaviour but in that case the leaves selected were of Lesser Swinecress (*Coronopus didymus*). Although belonging to quite different families the two plants are superficially somewhat similar in appearance and habit.— J.A. THOMPSON, English Nature, Attingham Park, Shrewsbury SY4 4TW.

A sighting of the Orange-tip (*Anthocharis cardamines* L.) in the Isle of Wight during September 1991

I should like to report the sighting of three male Orange-tips (*Anthocharis cardamines* L.) by Mr and Mrs P. Woods in their garden at Newtown on 22nd September 1991. After seeing them flying together for a few minutes they flew over their garden hedge after which they were not seen again.

1991 will be remembered for the warm and sunny months of August and September and this spell of warm weather might have caused the unusual second brood of this butterfly which occasionally occurs in exceptional years.—S.A. KNILL-JONES, Roundstone, 2 School Green Road, Freshwater, Isle of Wight.

Incidence of Codling Moth (*Cydia pomonella*) (Lep.: Tortricidae) in a Sussex Garden, 1991

We have a Cox's Orange Pippin and a Bramley apple tree in our garden, about twenty feet apart, both about 20 years old. In recent years, each tree has sometimes yielded over 400 apples, due possibly to the application of adequate potassium fertiliser. This, together with a large untended, heavy-fruiting apple tree fifty yards away in the next garden, has provided a splendid opportunity for the unfettered expansion of the Codling moth population.

Having for several years sprayed the trees, reluctantly, around the recommended times, and still had a very high percentage of apples infested (sometimes almost the whole crop), in 1991 we invested in a pheremone trap (Agralan Ltd, The Old Brickyard, Ashton, Keynes, Swindon SN6 6QR). I recorded a daily count of male Codling moths found in the trap. Emergence of the moth was not at all according to expectations, and it appeared that without the trap as a guide, one would have had to spray virtually every week for several months in order to catch a major hatching and prevent damage being done.

The upshot was that a small number of immature windfalls showed Codling moth damage, but the 400 Cox's and the 450 Bramleys which we picked off the trees, had virtually no Codling damage at all (although there were some blemishes from scab and other causes).

The following is a diary of events, with the number of male moths removed each day from the trap:

May 14. Trap placed in Cox's Orange Pippin, with pheremone capsule activated. May 24, one codling. May 31, three.

June 18. Replacement pheremone capsule activated.

June 21, two codlings. June 29, thirteen. June 30, one. July 3, five. July 4, one.

July 6. three codlings, Sprayed a mixture of dimethoate and benlate; we have a second major pest problem in the form of Woolly Aphid (*Eriosoma lanigerum*).

July 8, two codlings. July 10, two. July, one.

July 14. Sprayed with dimethoate, benlate and heptenophos.

July 16, seventeen codlings. July 17, one. July 18, four. July 20th, one. July 21, three. July 22, one, July 23, four. July 24, one.

July 25th. Sprayed with heptenophos.

July 26, two codlings. July 28, three. July 29, one. Aug. 1, one. Aug. 2, one.

Aug. 3, one codling. Sprayed with heptenophos.

Aug. 6, one codling.

Sept. 8. Trap removed from tree.

Altogether 76 male codling moths were caught in the trap over the 1991 season.— R.C. DENING, 20 Vincent Road, Selsey, West Sussex PO20 9DQ.

BREEDING *APHANTOPUS HYPERANTUS* L. AB. *CUNEATA* GILLMER

RUPERT D.G. BARRINGTON

Old College Arms, Stour Row, Shaftesbury, Dorset SP7 0QF.

THERE ARE two distinct aberrations of *A. hyperantus* L. in which the spotting is elongated. The more striking is *lanceolata* Shipp in which most spots are affected in well developed forms, and the pupils are always drawn out into a streak. A good example from Kent is illustrated (Fig. 4). This is a recessive form which varies considerably, and selective inbreeding can produce particularly striking specimens. A.E. Collier produced some remarkable forms with very large and elongated spots (his series is in the RCK collection, British Museum (Natural History)). The second form, *cuneata,* differs most reliably in never having the streaked pupils. It too is very variable. R.S. Tubbs reports breeding six specimens in the F1 from a captured female, but no F2 generation has previously been reared.

On 9th July 1989, a fresh male *cuneata* was taken in a North Dorset woodland, having well-developed spotting with one or two spots drawn to a little point. This paired with one of six wild-captured type females introduced to its cage, and about 80 ova were obtained.

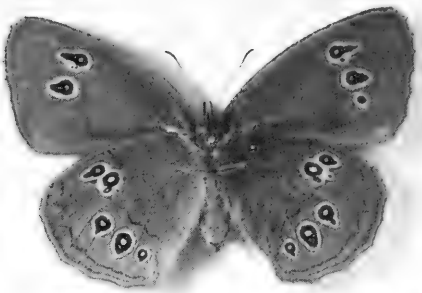
The F1 of 49 adults contained, in the females, a graded series from type to good *cuneata* (Figs. 1 and 2) and, in the males, type specimens and very minor aberrations. About ten to fifteen adults were deformed to varying degrees, mostly females, but no inbalance in the male : female ratio occurred. A number of pairings were taken amongst aberrations and several hundred ova were laid. Larval mortality was high with large numbers dying in the spring of 1991. The resulting F2 contained 42 adults. This was made up of eight females (two deformed) all of which were lesser aberrations than the best F1 females (Fig. 3 was the strongest) and 34 males (five deformed) showing a series of type to very minor varieties.

The graded nature of the series in the F1 suggests a multifactorial basis for the inheritance of this aberration coupled with a considerable weakening effect, particularly in the female, leading to the very biased male : female ratio in the F2.

Acknowledgements

I am grateful to Ross Young for allowing me to photograph the specimen from his collection, and for maintaining the livestock of this experiment on several occasions when I have been away.

Aphantopous hyperantus L. Female undersides. Figs. 1 - 3 *cuneata* Gillmer. Figs. 1 and 2 F1 bred June 1990 (RDGB); Fig 3 F2 bred June 1991 (RGDB): Fig. 4 ab *lanceolata* Shipp. Kent 1970.



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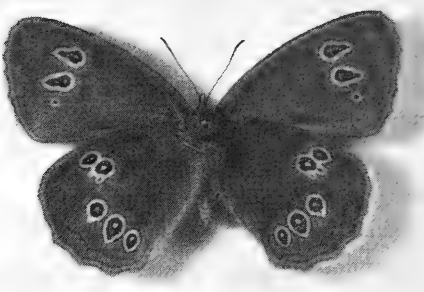

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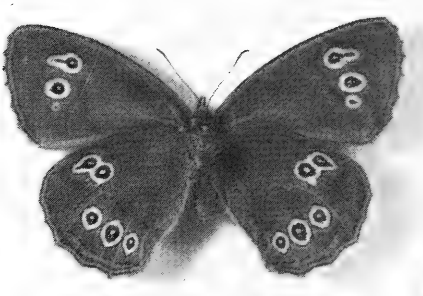

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***Hyloicus pinastri* L., the Pine Hawkmoth (Lep.: Sphingidae) new to Nottingham.**

On the night of 29th-30th July 1991 I was pleased to record a male *Hyloicus pinastri* L. resting on a wall adjacent to the Robinson m.v. trap which I run on a half-roof of Wollaton Hall (OC grid ref. SK 533 393), an Elizabethan mansion situated in a deer park 4km from Nottingham city centre. The specimen was fresh — and may be evidence of local breeding. There are two stands of mature Scots pine within 100 metres of the trap, as well as a number of others in mixed woodland within a 1km radius.

The Pine Hawkmoth has been established at Kirkby Moor near Woodhall Spa in neighbouring Lincolnshire for a number of years, with sporadic records from elsewhere in the county (R. Johnson, Lincolnshire moth recorder, pers. comm.), but this is the first record of its occurrence in Nottinghamshire. The specimen has been retained as a voucher at Nottingham Natural History Museum.— SHEILA WRIGHT, Keeper of Biology, Nottingham Natural History Museum, Wollaton Hall, Nottingham NG8 2AE.

Inter-specific pairing of two European Satyrids

On 28th August 1991 I was watching butterflies on the WWF Reserve at Hundsheimerberg near the Austro-Hungarian border. In spite of indifferent weather there were good numbers of three Satyrid species flying — *Chazara briseis L.*, *Arethusana arethusa* D. & S. and *Minois dryas Scop.* Towards the end of the afternoon at around 4.30 local time during a good spell of sunshine I disturbed a pair of mating butterflies. To my surprise the male of the pair was *Chazara briseis* while his partner was a female *Minois dryas,* the white-banded *briseis* contrasting strikingly as he carried the dark, more unicolorous *dryas.* I tried hard to photograph this event but the pair were extremely wary and eventually slipped away down a ravine where I was unable to follow.— C.J. LUCKENS, Swallowfield, Manor Road, Durley, Hants SO3 2AF.

***Agriphila geniculea* (Hayworth) (Lep.: Pyralidae) in Argyll**

John Clayton, in a recent paper on lepidoptera from north-east Fife (*Ent. Rec.* **103**: 297-299) gave records of *Agriphila geniculea* (Haworth) from eastern Scotland and also mentioned records from the Inner Hebrides. This prompts me to record that on 6.viii.1983 I disturbed a few moths of this species near the foot of a cliff immediately north of Easdale on Seil Island, Argyll. Seil Island is not considered to be one of the Inner Hebrides; it is connected to the mainland by a bridge over Clachan Sound, which is a narrow strip of water no more than 20 metres wide for a considerable part of its length. I was not aware at the time that this is a rare species in Scotland.— M.F.V. CORLEY, Pucketty Farm Cottage, Faringdon, Oxfordshire SN7 8JP.

MICROLEPIDOPTERA REVIEW OF THE YEAR 1990

DAVID AGASSIZ[1], ROBERT HECKFORD[2] & JOHN LANGMAID[3]

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FOR THE second year running there was a hot summer following a mild winter. Again the seasons were made unpredictable, some species appeared early and then fitted in an extra generation, others did not. This did not make life easy for microlepidopterists, and contrary to expectation there were not many discoveries of new species encouraged by a warmer climate however temporary it may or may not turn out to be.

It was not until the end of October that *Phyllonorycter platani* (Staud.), a new resident species was detected, by Maitland Emmet at the Annual Exhibition of the British Entomological & Natural History Society! However, for those who count the Channel Islands as part of Britain, *Evergestis limbata* (Linn.) was a new addition to our list; presumably this species had migrated from the Continent. The record of *Cydia amplana* (Hübn.) taken by Robert Heckford in his garden is the first confirmed British specimen. The species was placed on the British list in 1831, but the specimen(s) cannot be traced and nothing further had been heard of it for nearly 160 years. Although it has regularly been imported into Britain in its earlier stages in "jumping beans" *Cydia saltitans* (Westwood) has never been included in our list. The capture of a specimen in the open by John Langmaid requires this addition even though it will never be more than a casual importation.

In previous years we have noted *Batia internella* Jäckh as new to Britain and it is good to report the full publication of this discovery by Michael Harper. Even more so do we welcome the description of *Monochroa moyses* Uffen, new to Science, resident and well-established in this country.

Rare and little-known species continue to be unearthed. *Blastobasis phycidella* (Zell.) comes as a surprise in the Channel Islands since it is normally such a southern species. This places it in a similar category to *Pleurota aristella* (Linn.) which lives in those islands whilst being almost unknown on the mainland. The rediscovery of *Infurcitinea albicomella* (H.-S.) in the south-west is remarkable, as is that of *Pselnophorus heterodactyla* (Müll.) in Scotland. Further records of *Pammene agnotana* Rebel and *P. suspectana* (L. & Z.) are encouraging indications of permanent residence by those species.

Discovery of life histories of species which have hitherto been a mystery are always exciting, and in this category *Coleophora therinella* Tengst. deserves a mention.

The newly discovered *Phyllonorycter leucographella* (Zell.) is spreading rapidly in the south-east of England and has also appeared in Derbyshire, presumably assisted by the garden centre industry. The spread of this species is being monitored more closely than any other colonising insect has been in the past.

We are not aware of any major reference works which have been published during the past year, but several lists should be mentioned which are too long to be included in the systematic list which follows: Additions to the Isles of Scilly list can be found in *Ent. Rec.* **103**: 17. The 6th appendix to the Lepidoptera of Aberdeenshire and Kincardineshire appeared in *Ent. Rec.* **103**: 196. A long list of lepidoptera from Ireland especially v.c.s H15, H9 and H12 is found in *Ent. Gaz.* **42**: 15-29. Those searching for records are again recommended to scan the report of the Annual Exhibition in *Br. J. ent. nat. Hist.* **4**: 19.

In the systematic list this year an attempt has been made to identify new county records by placing their vice-county numbers in *bold* type. This does not guarantee that they are the first record for that v.c., but they are so according to the maps held by A.M. Emmet referred to in the Review for 1989 and described in greater detail by Emmet in *Ent. Rec.* **103**: 201-202.

Many thanks to those whose records are included, as always these are identified by their initials: D.J.L. Agassiz, B.R. Baker, H.E. Beaumont, K.P. Bland, K.G.M. Bond, M.F.V. Corley, B. Dickerson, A.M. Emmet, A.P. Foster, B. Goodey, E.F. Hancock, R.J. Heckford, M.W. Harper, J.R. Langmaid, D.V. Manning, H.N. Michaelis, D. O'Keefe, S.M. Palmer, M. Parsons, A.N.B. Simpson, F.H.N. Smith, R.A. Softly, D.H. Sterling, M.J. Sterling, P.H. Sterling and M.R. Young. A photocopied list containing all records submitted is available from David Agassiz, a 9″ × 6″ s.a.e. would be welcomed with any request for a copy. Records for 1991 and any unpublished ones for earlier years will be welcomed by any of the compilers from lepidopterists whether or not they have contributed before.

MICROPTERIGIDAE

1 *Micropterix tunbergella* (Fabr.) — Coppice Wood (**30**) 5.v.90 — DVM

NEPTICULIDAE

28 *Ectoedemia angulifasciella* (Staint.) — Carmel Woods SSSI (**44**) tenanted mines on *Rosa* 20.ix.90 — AME & JRL

30 *E. arcuatella* (Herr.-Schäff.) — Wyndcliff (**35**) tenanted mines on *Fragaria* 19.ix.90 — AME, JRL & PHS. **New to Wales**

35 *E. minimella* (Zett.) — Stapleford Wood (**53**) vacated mines on *Betula* 13.x.90 — AME

40 *Bohemannia pulverosella* (Staint.) — Fronddyrys, etc. (**43**) vacated mines on *Malus* 15.ix.90 — AME

42 *Fomoria septembrella* (Staint.) — Heddon Valley (**4**), Fronddyrys (**43**) & Carmel Woods SSSI (**44**) tenanted mines on *Hypericum* 23.ix., 15.ix. & 20.ix.90 respectively — AME

46 *Trifurcula immundella* (Zell.) — Stanner NNR (**43**) tenanted mines on *Cytisus* 16.ix.90 — AME, JRL & PHS

53 *Stigmella splendidissimella* (Herr.-Schäff.) — Heddon Valley (**4**) 23.ix., Wyndcliff (**35**) 19.ix.90 mines on *Rubus* spp. & *Fragaria* — AME

64 *S. continuella* (Staint.) — Waun-y-Mynach (**42**) vacated mines on *Betula* 17.ix.90 — AME, JRL & PHS

65 *S. speciosa* (Frey) — Lynn Valley (**4**) 24.ix., Fronddyrys (**43**) 15.ix., Stapleford Wood (**53**) 13.x.90 mines on *Acer pseudoplatanus* — AME

72 *S. myrtillella* (Staint.) — Cynghordi (**44**) mines on *Vaccinium myrtillus* 20.ix.90 — AME & JRL

73 *S. trimaculella* (Haw.) — Crossgates (**43**) mines on *Populus* 16.ix.90 — AME, JRL & PHS

84 *S. ruficapitella* (Haw.) — Bretton Clough (**57**) 1990 — MJS

86 *S. roborella* (Johansson) — Moity Wood SSSI (**43**) mines on *Quercus* 18.ix.90 — AMS, JRL & PHS

87 *S. svenssoni* (Johansson) — Lynn Valley (**4**) vacated mines on *Quercus* 24.ix.90 — AME

88 *S. samiatella* (Zell.) — Woodbury Park (**30**) vacated mine 10.xi.90 — DVM

89 *S. basiguttella* (Hein.) — Stanner NNR (**43**) vacated mines on *Quercus* 16.ix.90 — AME, JRL & PHS. **New to Wales**

93 *S. centifoliella* (Zell.) — Luccombe (**5**) mines on *Rosa* 25.ix.90 Tuddenham Heath NR (**26**) 20.x.90 — AME

97 *S. malella* (Staint.) — Dinton (**8**) mine on crab apple 29.ix.90 — SMP; Stapleford Wood (**53**) mines on Malus 13.x.90 — AME

99a *S. mespilicola* (Frey) — Wyndcliff (**35**) mines on *Sorbus torminalis* 19.ix.90 — AME, JRL & PHS. **New to Wales**

110 *S. betulicola* (Staint.) — Abbeycwmhir (**43**) mines on *Betula* 16.ix.90 — AME, JRL & PHS

112 *S. luteella* (Staint.) — Pont ar Hydfer NR (**42**) mines on *Betula* 17.ix.90 — AME, JRL & PHS

OPOSTEGIDAE

119 *Opostega salaciella* (Treits.) — Sharnbrook (**30**) 28.vii.90 — DVM

121 *O. crepusculella* Zell. — Padworth Common (22) common 11.viii.90 — BRB; Kilcolman (H5) 10.viii.90 — KGMB

TISCHERIIDAE

125 *Tischeria marginea* (Haw.) — Stanner NNR (**43**) tenanted mines on *Rubus* 16.ix.90 — AME, JRL & PHS

INCURVARIIDAE

132 *Incurvaria praelatella* ([D. & S.]) — Blackditch Wood (H20) two in Malaise trap 3 & 20.vi.90 — KGMB

135 *Lampronia luzella* (Hübn.) — Blackditch Wood (H20) several in Malaise trap 6.v. - 20.vi.90 — KGMB

142 *Nematopogon pilella* ([D. & S.]) — Minerva (**50**) 1990 B. Formstone per HNM

143 *N. metaxella* (Hübn.) — Blackditch Wood (**H20**) nine in Malaise trap 6.v. - 11.vii.90 — KGMB

145 *Nemophora minimella* ([D. & S.]) — Barrigone (**H8**) 1.viii.90 — KGMB

149 *Adela cuprella* ([D. & S.]) — Holme Fen NNR (**31**) 18.iii.90 — J.Bratton

151 *A. croesella* (Scop.) — Otford (16) 1990 — DO'K

HELIOZELIDAE

154 *Heliozela sericeella* (Haw.) — Heddon Valley (**4**) 23.ix. — AME; Llandeilo (**44**) 20.ix.90 mines on *Quercus* — AME & JRL

155 *H. resplendella* (Staint.) — West Luccombe (**5**) mines on *Alnus* 25.ix.90 — AME

157 *H. hammoniella* (Sorh.) — Abbeycwmhir (**43**) vacated mines on *Betula* 16.ix.90 — AME, JRL & PHS

TINEIDAE

196 *Morophaga choragella* ([D. & S.]) — Bentley Wood (8) 21.viii.90 — SMP

200 *Psychoides filicivora* (Meyr.) — Cardiff (41) 4.i.90 — EFH; Earley, Reading (**22**) cases on *Phyllitis,* moths bred 11 - 18.vi.90 — B.T. Parsons per BRB

204 *Infurcitinea albicomella* (Herr.-Schäff.) — Torquay (3)21.vii.90 — RJH, *Ent. Gaz.* **42**: 14

211 *Haplotinea ditella* P. & M. — Hints for distinguishing from *H. insectella* — DHS, *Ent. Gaz.* **42**: 2

224 *Triaxomera parasitella* (Hübn.) — Wick Copse, Headington (**23**) 3.vi.90 — MFVC

227 *Monopis laevigella* ([D. & S.]) — Rhayader (**43**) 15 - 21.ix.90 — AME, JRL & PHS

243 *Tinea dubiella* Staint. — Douglas (**H4**) 12.viii.90 — KGMB

LYONETIIDAE

254 *Leucoptera laburnella* (Staint.) — Bentley Wood (8) 15.vii.90 — SMP; Rhayander (**43**) adults & vacated mines on *Laburnum* 15 -21.ix.90 — AME, JRL & PHS

256 *L. spartifoliella* (Hübn.) — Stanner NNR (**43**) mines on *Cytisus* 16.ix.90 — AME, JRL & PHS

264 *Bedellia somnulentella* (Zell.) — Cockayne Hatley (**30**) viii.90 — DVM

BUCCULATRICIDAE

266 *Bucculatrix nigricomella* Zell. — Cardiff (**41**) 11.v.90 — EFH; Borras (**50**) 1990 — B. Formstone per HNM

272 *B. cidarella* Zell. — Llandeilo (**44**) vacated mines on *Alnus* 20.ix.90 — AME & JRL

274 *B. ulmella* Zell. — Cardiff (**41**) 1.v. & 18.vii.90 — EFH

GRACILLARIIDAE

283 *Caloptilia betulicola* (Her.) — Lynn Valley (**4**) mines on *Betula* 24.ix.90 — AME

284 *C. rufipennella* (Hübn.) — Sharnbrook (**30**) 3.viii.90 — DVM

287 *C. robustella* Jäckh — Cardiff (**41**) 2.v.90 — EFH; Stanner NNR (**43**) larval feeding on *Quercus* 16.ix.90 — AME, JRL & PHS

288 *C. stigmatella* (Fabr.) — Waun-y-Mynach (**42**) larval feeding on *Salix* 17.ix.90 — AME, JRL & PHS

289 *C. falconipennella* (Hübn.) — Gilfach NR (**43**) larval feeding on *Alnus* 16.ix.90 — AME, JRL & PHS. **New to Wales**

290 *C. semifascia* (Haw.) — Trefeca (**42**) vacated larval feeding on *Acer campestre* 17.ix.90 — AME, JRL & PHS

299 *Parectopa ononidis* (Zell.) — Brean Down (**6**) mine ix.90 — ANBS

301 *Parornix betulae* (Staint.) — Carmel Woods SSSI (**44**) larval feeding on *Betula* 20.ix.90 — AME & JRL

302 *P. fagivora* (Frey) — Bramfield (20) larval folds, 1990 — D.C. Annetts det. MJS; Wyndcliff (**35**) 19.ix; Stanner NNR (**43**) larval feeding on *Fagus* 16.ix.90 — AME, JRL & PHS

302a *P. carpinella* (Frey) — Bramfield (20) larval folds 1990 — MJS

305 *P. scoticella* (Staint.) — Wyndcliff (**35**) 19.ix. — AME, JRL & PHS; Stapleford Wood (**53**) mines on *Sorbus aucuparia* & *Malus* 13.ix.90 — AME

308 *P. finitimella* (Zell.) — Trefeca (**42**) Fronddyrys (**43**); Llanidloes (**47**) larval feeding on *Prunus* 17 - 21.ix.90 — AME, JRL & PHS

309 *P. torquillella* (Zell.) — Stanner NNR (**43**) tenanted mines on *Prunus* 16.ix.90 — AME, JRL & PHS

316 *P. roboris* (Zell.) — Enniskerry (H20) tenanted mines 23.ix.90 — KGMB

317 *P. heegeriella* (Zell.) — Dinas (H2) tenanted mines 3.xi.90 KGMB; Heddon Valley (**4**) 23.ix. — AME; Carmel Woods SSSI (**44**) mines on *Quercus* 20.ix.90 — AME & JRL

321 *P. messaniella* (Zell.) — Rhayadar (**43**) mines on *Fagus* 15.ix.90 — AME, JRL & PHS

321a *P. platani* (Staud.) — South Kensington **(21)** mines 27.x.90 — AME. **New to Britain,** *Ent. Rec.* **103**: 1; Kew Gardens **(17)** xi.90 — K. Sattler

324 *P. sorbi* (Frey) — Gylfach NR **(43)** mines on *Sorbus aucuparia* 16.ix.90 — AME, JRL & PHS

329 *P. spinicolella* (Zell.) — Trefeca **(42)**; Fronddyrys etc. **(43)** mines on *Prunus* 17 & 15.ix.90 — AME, JRL & PHS

330 *P. cerasicolella* (Herr.-Schäff.) — Stanner NNR **(43)** mines on *Prunus cerasus* 16.ix.90 — AME, JRL & PHS

332 *P. corylifoliella* (Hübn.) — Waun-y-Mynach **(42)** mines on *Crataegus* 17.ix.90 — AME, JRL & PHS

332a *P. leucographella* (Zell.) — Elvaston Castle **(57)** mine on *Pyracantha*; *Ent. Rec.* **103**: 99; by the end of the year it was found to have spread as far as Newport (19) and the Colchester area (19), Fowlmere **(29)**, St Albans and Bishop's Stortford **(20)**, Surbiton **(17)**, Sittingbourne **(15)** — DJLA

335 *P. salicicolella* (Sircom) — Tuddenham Heath NR **(26)** mines on *Salix* 20.x.90 adults reared 1991 — AME

336 *P. dubitella* (Herr.-Schäff.) — Tuddenham Heath NR **(26)** mines on *Salix* 20.x.90 adults reared 1991 — AME

338 *P. cavella* (Zell.) — Carmel Woods SSSI **(44)** mines on *Betula* 20.ix.90 — AME & JRL

340a *P. staintoniella* (Nic.) — Perranporth (1) mines 24.iv.90 em. 1-6.v.90 — FHNS

347 *P. anderidae* (Fletcher) — Luccombe **(5)** 25.ix.90 — AME; Waun-y-Mynach **(42)** 17.ix.90 mines on *Betula* — AME, JRL & PHS

348 *P. quinqueguttella* (Staint.) — Cape Clear Island **(H3)** mines on *Salix repens* 19.viii.90 —KGMB

354 *P. emberizaepenella* (Bouch.) — Moity Wood SSSI **(43)** mines on *Lonicera* 18.ix.90 — AME, JRL & PHS

356 *P. tristrigella* (Haw.) — Rhayader **(43)** adults 15 - 21.ix.90 — AME, JRL & PHS

358 *P. froelichiella* (Zell.) — Dinton **(8)** mine on *Alnus* 25.ix.90 — SMP

361 *P. trifasciella* (Haw.) — Tuddenham Heath NR **(26)** 20.x.90 — AME; Rhayader **(43)** adults and mines on *Lonicera* 15 - 21.ix.90 — AME, JRL & PHS

362 *P. acerifoliella* (Zell.) — Borras **(50)** 1990 — B. Formstone per HNM; Trefeca **(42)** 17.ix.; Stanner NNR **(43)** mines on *Acer campestre* 16.ix.90 — AME, JRL & PHS

363 *P. platanoidella* (Joannis) — Hampstead (21) mines 1990 — RAS; Heddon Valley **(4)** mines on *Acer platanoides* 23.ix.90 — AME

364 *P. geniculella* (Rag.) — Rhayader **(43)** 15.ix.90; Carmel Woods SSSI **(44)** 20.ix.90 mines on *Acer pseudoplatanus* — AME, JRL & PHS

368 *Phyllocnistis unipunctella* (Steph.) — St Harmon **(43)**; Llandeilo **(44)**; Llwyn-y-gôg **(47)** mines on *Populus* ix.90 — AME, JRL & PHS

CHOREUTIDAE

388 *Choreutis myllerana* (Fabr.) — Valley (**52**) 1990 — HNM

GLYPHIPTERIGIDAE

392 *Glyphipterix schoenicolella* Boyd — Pollardstown Fen (H19) 10.vi.90; Cape Clear Island (H3) 19.viii.90 — KGMB

DOUGLASIIDAE

399 *Tinagma balteolella* Fisch. v. Rösl. — Dungeness (15) bred *Echium* 1990 — DO'K

YPONOMEUTIDAE

424 *Yponomeuta evonymella* (Linn.) — Records of migration into v.c.s 25, 27 & 28 — APF, *Ent. Rec.* **103**: 42f

428 *Y. rorrella* (Hübn.) — Southsea (11) a few at m.v. 17 - 20.vii.90 — JRL; Petts Wood (**16**) two at m.v. 1990 DO'K; Leigh (37) 1990 — A.R. Plant per ANBS

435 *Zelleria hepariella* Staint. — Bangor (49) a yellow form, 1990 — M.J. Morgan per HNM

439 *Swammerdamia compunctella* Herr.-Schäff. — Loch Hourn, Knoydart (**97**) 11.vi.90 — MFVC

440 *Paraswammerdamia albicapitella* (Scharf.) — Barrigone (**H8**) 15.vii.90 — KGMB

455 *Ypsolopha scabrella* (Linn.) — Rhayader (**43**) 15 - 21.ix.90 — AME, JRL & PHS

460 *Y. parenthesella* (Linn.) — Rhayader (**43**) 15 - 21.ix.90 — AME, JRL & PHS

464 *Plutella xylostella* (Linn.) — Rhayader (**43**) 15 - 21.ix.90 — AME, JRL & PHS

465 *P. porrectella* (Linn.) — Larkhill Range (8) larvae on *Hesperis* 3.viii.90 — SMP

468 *Rhigognostis incarnatella* (Steud.) — Blackditch Wood (H20) four in Malaise trap 6.v. - 20.vi.90 m— KGMB, *Ent, Gaz.* **42**: 224.

470 *Orthotelia sparganella* (Thunb.) — Dinton (8) 20.vii.90 —SMP

476 *Acrolepia autumnitella* Curt. — Caergwrle (**51**) 1990 — M. Newstead per HNM

EPERMENIIDAE

478 *Phaulernis fulviguttella* (Zell.) — Trevalga, Tintagel (**2**) 16.vii.89 — FHNS

482 *E. insecurella* (Staint.) — Tilshead (**8**) two smoked from *Thesium,* 3.vi.90 — JRL & SMP

483 *Epermenia chaerophyllella* (Goeze) — Gresford (50) 1990 — B. Formstone per HNM; Wyndcliff (**35**) 19.ix.; Stanner NNR (**43**) 16.ix.90 larval feeding on *Heracleum* — AME, JRL & PHS

(to be concluded)

News from the Netherlands

In 1990, Michael Chalmers-Hunt reported on the exciting discovery that Black Bindweed (*Polygonum convolvuli*) seeds were the larval foodplant of *Coleophora therinella* Tengst. in the Netherlands and this was followed by its subsequent rearing in the UK (Sterling, *Ent. Rec.* **103**: 104-105). A short paper in English has now been published on this species (Wolf, H.W. van der, 1992). The hostplants and larval cases of *Coleophora therinella* and *C. peribenanderi. Ent. Ber. Amst.* **52** (4): 47-49). The paper adds leaves of *Carduus* as a pabulum for *peribenanderi* (at least in the Netherlands). The cases of both species are described and illustrated.

Another recently published paper (Stigter, H. & A. van Frankenhuyzen, 1992. *Argyresthia trifasciata,* een nieuwe beschadger van coniferan in Nederland. *Ent. Ber., Amst.* **52** (4): 33-37) describes *Argyresthia trifasciata* established as a serious pest of coniferous trees over large parts of the Netherlands. *Trifasciata* is on the British list on the basis of a single specimen captured in 1982 (Emmet, A.M., 1982. *Ent. Rec.* **94**: 180-182). Emmet speculated that the specimen may have bred on imported Juniper, its principal foodplant. The current paper describes damage to *Chamaecyparis, Cupressocyparis* and *Thuja* as well as to *Juniperus.*

Earlier this year (*Ent. Rec.* **104**: 24) I reported on the discovery of a third species of *Pancalia* (Lep.: Cosmopterigidae) in the Netherlands. The author of the paper on which I reported has kindly sent me an English translation of the keys separating *leuwenhoekella, latreillella* and *nodosella.* I am happy to pass on copies of this key to any interested entomologist.

Paul Sokoloff

SEL Congress, Helsinki, 19 - 23rd April 1992.

The eighth European Congress of Lepidopterology was held in Helsinki and attended by some 150 members representing about 27 different countries. It was generally felt to have been the best congress to date. Many familiar names were found to have faces!

There were eight people from the UK, with the Natural History Museum being more strongly represented than hitherto. This was much appreciated by those from other countries and their museums. Virtually all the proceedings happened in English — however our pronunciation of scientific names is a cause for mirth amongst all other Europeans. On return home the latest issue of *Nota Lepidopterologica,* the Society's Journal was awaiting members, with every article in English. There was also a membership list giving a breakdown country by country: UK second with 51 after Germany with 182!

With increasing ties with Europe is it time we took more interest in European affairs? Our entomological history and coverage is the envy of other nations, so we have much to share.— DAVID AGASSIZ, Centre for Population Biology, Imperial College at Silwood Park, Ascot, Berks SL5 7PY.

AROUND GREECE IN FOURTEEN DAYS. *CORRIGENDA.*

Dr C.J. LUCKENS

Swallowfield, Manor Road, Durley, Southampton

SINCE MY REPORT on Greek Butterflies was published in this journal (Luckens 1990) Dr T.W. Tolman, who originally provided most of the information on both insects and localities, has pointed out a number of errors. These are listed and discussed below. Wherever it is considered to be of relevance and interest in the present context, Dr Tolman has invited me to include some of his more recent observations.

My statement that "a strange grey form of *Carcharodus lavatherae* Esp. . . . appears to replace the type in this area", was based upon a single male specimen taken by myself and six "grey" males taken by Dr Tolman at various times since 1984 at a spring near Florina. However, for the purpose of determining the extent of colonisation in the area, these data, originating from the same site, are inadequate. Other evidence detracts from the supposition that the "grey" form replaces the type in the area and, indeed, there is some indication that the two colour forms are sympatric and synchronous in the district of Florina (Tolman, unpublished data; Dacie *et al.*, 1972).

Following his discovery of the larval hostplant of *Colias balcanica* Rebel in 1984, Dr Tolman passed on details of his observations to me before J.M. Chalmers-Hunt and I visited the site in 1988. Unfortunately, his description of the plant — "yellow-flowered broom" — has lost accuracy in my translation to the Latin! The plant is indeed a broom, but not a species of *Cytisus,* so he has learnt subsequently having sought professional assistance in establishing its identity. As a paper dealing with the life-cycle of *C. balcanica* is pending elsewhere (Tolman, Phegea), I have been asked not to disclose the name of the plant at this time in order to avoid pre-emption. The ova J.M.C-H. and I found on this plant were mainly on a few low-growing bushes on a steep slope. However, I am informed that the plant is not generally "low-growing" or "prostrate" and a representative sample from the extensive and variable biotope indicates an average plant height of about 50cm. *Flora Europaea* describes the plant as: erect; to 100cm; exceptionally, 200cm.

In attempting to describe the unique features of the biotope of *Colias aurorina* H.-S. near Konitsa, I referred to "an unusually extensive low plateau — an ancient dried-up river bed". This site is actually part of a wide river valley which is a main drain for that region of the Pindos Mountains and the water course itself invariably carries a large volume of water throughout the year. I saw no examples of *C. aurorina* here myself and assumed it was probably over at that low level. Despite the general retardation of the 1987 season in Greece, on the basis of the only faunistic data available to me (one fresh female, 23.5.85 and three slightly worn males, 22.6.87 plus numerous ova (T.W. Tolman, pers. comm.)), my claim

regarding the emergence time of "at least a month earlier" is difficult to justify.

Dr Tolman himself points out that the observation of *C. aurorina* by Brown (1977) in the Smolikas Mountains at 1200m in late June/early July, predates his discovery of the butterfly near Konitsa. As these two sites are approximately on the same longitude my statement that he found the butterfly much further west than previously reported is incorrect. Another site, discovered by Dr Tolman and Mr J. Dils in 1991 is slightly further west and to the south in the Timfi Mountains at 1500m. Whilst these sites represent a significant northerly extension of the range of *C. aurorina,* the greater significance of the low level Konitsa site is its altitude, which at 550m, is roughly a third of the average of the known Greek localities.

There are difficulties with the identity of the larval hostplant at the Konitsa locality. In drawing my attention to the presence of this plant, Dr Tolman cited a spiny *Astragalus,* which to me appeared identical to the plants I had been watching *C. aurorina* using for egg-laying two days previously on Mount Chelmos in the Peloponnese. There is apparently some confusion amongst the botanists concerning the nature of the Chelmos plant. In referring to the identity of this plant, Leestmans and Arheilger (1987) quote two authorities of different opinions. According to Strid (1986), *A. thracicus* ssp. *cylleneus* occurs on Chelmos, whilst two other ssp., *monachorum* and *parnassi,* occur on mountains in northern Greece. Tutin *et al* (1968) on the other hand, regard *parnassi* as a full species with *cylleneus* its Peloponnesian ssp. In his review of the Peloponnesian butterflies, Brown (1977) refers to the Chelmos plant as *Astragalus parnassi cylleneus* Hayek, his justification being based on professional identification at Leicester University. Brown also mentions that the hostplant on Chelmos has never been properly fully identified and notes that this subspecies is also found on Mt Parnassos. The situation with regard to the hostplant at the Konitsa site, which is well removed from all other sites geographically and altitudinally, is far from clear. Dr Tolmans attempts to secure a professionally based determination have thus far been unsuccessful but it appears that it may not relate to any of the above taxa.

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ON *BAGOUS ARDUUS* SHARP AND *B. RUDIS* SHARP (COL.: CURCULIONIDAE)

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THE ABOVE two species — if indeed they are such — must surely rank among the most imperfectly known of our weevils, neither of them having been recognised since their publication in 1917 nor, it seems, referred to in any later literature. The following notes, therefore, even if they do little more than bring the matter afresh to the attention of coleopterists, will perhaps not be out of place.

B. (Bagous) arduus Sharp (1917: 105).— Many years ago I was able to examine the type male in Sharp's collection ("probably from the London district") and can thus enlarge somewhat upon his brief characterisation (the term "description" would be close to an overstatement). It is old and worn, quite black above (abraded); undoubtedly nearest to *B. collignensis* (Hbst.) — the *claudicans* Boh. of Sharp's paper — but in its longer tarsi (a point stressed by the author, tarsal characters being of great importance in the genus) nearer to *B. longitarsis* Thoms. (= *tomlini* Sharp). *B. arduus* is a little larger and broader than either, the elytral intervals flatter, the alternate ones not raised as they are slightly in *longitarsis,* the punctures of the striae much stronger, the pre-apical tubercle stronger and sharper, the pronotal sides more contracted behind, and the legs stouter, than in the other two species. As stated by Sharp, the most distinctive feature of all is the form of the aedeagal apex, which is more broadly, flatly and squarely truncate than in any other British *Bagous* (fig. 1b).

I sent a sketch of this to the late Dr L. Dieckmann in Leipzig in 1963, and he replied that it did not agree with any species known to him. In his next letter he admitted that, having now seen a far more ample material of *collignensis* and *longitarsis,* he found considerable intergrading in both the

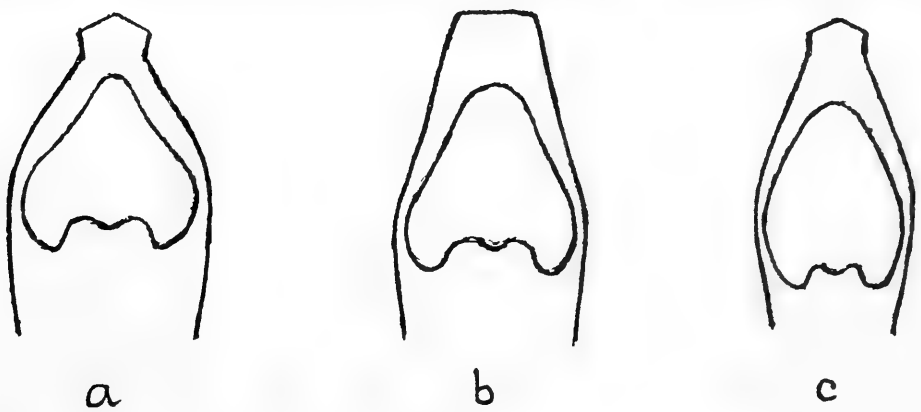

Fig. 1. *Bagous* spp., apex of aedeagus.
a. *collignensis;* b. *arduus;* c. *longitarsis.*

form of the aedeagal apex and other characters, but only in south European material — as he pointed out in his 1964 paper (p.100). Whilst it is doubtless possible, therefore, to regard *B. arduus* as an extreme aberration of one of these species (presumably *collignensis*), such a view would seem hard to maintain. It might be otherwise if the two species were known to vary markedly in northern Europe including Britain, which is not the case; or if the characters of *arduus* tended unequivocally in one direction. It should cause little surprise if such details prove more stable, in some cases, in our restricted insular conditions than when the same species are studied over a vastly greater area with a wide range of climate.

Unfortunately, of the six more recent specimens referred by Sharp (p.106) to *B. arduus,* I was able to locate only two. The five from Woking (1.ix.1878) that he mentions as being in the Champion collection were not to be found there; but in that of Power was a *Bagous* standing as this species, in fresh and perfect condition, labelled "Woking/G.C.C.", which I took to be one of them. However, I could only make it a typical *longitarsis.* I have seen also the French specimen in the Chitty collection at Oxford which Sharp believed was another *arduus.* It is a male and had been dissected and named by Mr D.M. Ackland as *B. longitarsis,* a determination with which I was in complete agreement. It would seem that the type of *B. arduus* remains unique; but I think that for the present it must continue to stand as a good species.

B. (Abagous) rudis Sharp (1917: 31).— The also unique type (sex not known) is in the Crotch collection at Cambridge. I saw it briefly when on a visit, but had no opportunity for a critical inspection; it certainly presented a distinct appearance. It has no known provenance, but, according to Sharp, is the original British exponent of *B. nigritarsis* Thoms. (now *lutulentus* (Gyll.)). There are, as I hope to show, very strong indications that this insect is identical with the continental *B. (A.) robustus* Bris. — a species said by Lohse (1983: 56) to be widespread in mid-Europe, living on *Alisma plantago,* and which might well be British although, if so, probably very rare. It was earlier treated as a large variety, then as a subspecies, of *B. lutulentus* (an *Equisetum* feeder).

Consider the following points: (a) Sharp states that the type of *rudis* "went to M.H. Brisout de Barneville, and bears still his label '*lutulentus* varietas'"; this would be before that author published his "variety" *robustus* of *B. lutulentus,* now given specific rank.

(b) *B. rudis* is described as larger than *lutulentus* — the Latin diagnosis begins "Major, *robustus*"(my italics) — with the elytra broad and shaped more like those of *B. 'collignensis'*, i.e. *puncticollis* Boh.; Lohse writes (p.56) that Brisout's species resembles a large, robust *lutulentus,* and for shape he couples it with *puncticollis.*

(c) Sharp writes "the constriction of the sides of the thorax near the front is very strong"; Lohse, that its sides in *robustus* are narrowed *before* and behind (my italics).

(d) Sharp says that *rudis* has a broader and more strongly lobed third tarsal segment than has *puncticollis*; Lohse, that in *robustus* this segment is broader and more heart-shaped than in *puncticollis* (a point not noticed, curiously, in Dieckmann's 1964 paper under the "var." *robustus*).

Taken in conjunction, these resemblances and congruences between the two (?) species are most striking, and must add up to a very high probability that they are really one and the same. I do not assert the synonymy as a fact, since it is purely inferential. In any case, the type of *B. rudis,* like that of *B. arduus,* ought to be critically examined by a competent authority — something that appears never to have been done.

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Litophasia hyalipennis (Fallen) (Dip.: Tachinidae) in Kent

Litophasia hyalipennis (Fallen) was recorded as British by Collin (1950) on the basis of a single male taken by the Rev E.N. Bloomfield at Guestling near Hastings, Sussex in 1886. Van Emden (1954) included the species in his key to Rhinophorinae although no further specimens had been found in this country. Falk (1991) lists the species as extinct. I now possess a specimen of each sex taken from two sites in North Kent within the past five years and feel that information additional to that given by Collins is due.

The male was swept from low vegetation (predominantly *Polygonum aviculare* and *Plantago major*) along a cart track near Kingsnorth on 9th August 1987. The female was swept from an area of waste ground at Northfleet on 9th August 1991. In the latter case the presence of the fly was not detected until specimens were being sorted on returning home, so no association with any microhabitat is possible. Suffice it to say that the vegetation swept consisted of coarse grasses, nettles, *Melilotus* spp. and *Senecio jacobaea.*

Collin constantly refers to a similarity between *hyalipennis* and *Phasia* (formerly *Alophora*) *pusilla* (Meigen) but in reality the two are quite distinct. In both sexes of *hyalipennis* the squamae are smaller and entirely brown infuscated and the broad front tarsi are conspicuous. The dorsum of the thorax is undusted but covered with microscopic reticulation. The pleura, however, are almost polished. The arista is thickened for about the nasal third compared with half in *pusilla.* The male measures some 3.2mm and the female 3.9mm.

In the female the frons at the vertex is about one-third the width of the

head. The eyes are almost parallel until a point level with the insertion of the antennae, then divergent. Orbital bristles are absent although frontal setae are distinct and there is a particularly strong seta towards the centre of the parafacialia at about half head height. The frons is shining except for conspicuous silver pollinosity which spreads onto the face and jowls from a point approximately in line with the insertion of the antennae. The antennae are covered with microscopic pile, appearing grey from some angles. The vibrissae are distinct. The abdominal tergites become increaingly less shagreened towards the apex so that the terminal segments appear polished. The ovipositor is large and folded under the abdomen in pipunculid style. The frontal tarsi appear somewhat more dilated than in the male. The wing veins are darker with the membrane between R1 and the costa yellowish. The halteres of both sexes have a black knob but pale orange stem.

The occurrence of *Litophasia hyalipennis* at two unspecialised sites along the Thames Estuary obviously raises the question of a possible host. I am not aware of any host records, although it is not improbable that a species of Heteroptera, possibly a lygaeid is utilised. The fact that both species were taken on 9th August could signify a fairly short flight period and the small size and obscure habitus would undoubtedly contribute towards it being overlooked. Like so many other insects its detection in the field is largely fortuitous for I had collected diptera for many years along similar areas of the North Kent marshes before encountering it.

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National Review of the recording and conservation of the rarer British macro-moths

Details of this project were published in the *Entomologist's Record* earlier this year (**103**: 193-196). Because of funding difficulties, operation of the project was suspended earlier this year, but now, with some funding from the JNCC for 1992, services for county recorders and other contributors has resumed.

It is hoped that some aspects of the practical work on the Schedule 5 protected moths and others will be continued with backing from other sources, including the English Nature Species Recovery Programme. We regret any incovenience caused to recorders — provisional distribution maps and News Bulletin 4 will be circulated shortly. All correspondence for the National Review should be directed to Dr P. Waring, 1366 Lincoln Road, Werrington, Peterborough PE4 6LS.

REMINISCENCES OF AN AMATEUR LEPIDOPTERIST 1920-90

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(Continued from page 154)

When I left in spring 1967, my Geneva friends asked my where I would go and collect next and I told them I thought it time to renew acquaintance with my own country. And later that year I explored Scotland, where I missed the abundance of more southerly latitudes. I did not foresee that I would still revisit the Alps several times, the Pyrenees and Crete and Norway, nor that I should receive from a Swiss museum many boxes of Arabian moths to determine.

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15. Normandy 1969-75

Near the old harbour of Le Havre there were two venerable buildings, battered and partly gutted, which had survived the allied bombardments of Notre Dame and the Natural History Museum. When I arrived there in spring 1969, the museum's new roof was watertight; its classical facade, with pediments and two stories on nine front windows facing a rectangular garden, now converted to a car-park, was considerably chipped but somehow more dignified than the straight lines, pebble-dash and concrete of the rebuilt sectors of the city. Still, the main staircase was in a rather dangerous state, and only a few rooms were open, and much remained to be done. The museum must have been priority 3 in the queue for rebuilding.

A few exhibits in one or two open rooms showed me that the shores around Le Havre were famous for fossils and pre-history; they had been salvaged from the wreckage and reassembled over the years by the curator, himself a stooping but charming old relic, André Maury. Doubtless this work had gained for him his decoration as Cavalier of the Legion of Honour. His zoological speciality was molluscs and he still kept his hand in by showing to students the genitalia, neatly dissected, freshly prepared, of sea-snails. In younger years he had even caught butterflies on the wooded or grassy slopes fringing the east side of the estuary. There they were, in glass-topped cases, showing what had flown there of yore. The long-awaited restoration and improvements, as will appear, materialised during my six years there.

Le Havre Natural History Museum.

Maury must also have taught natural sciences for years in the local lycée (secondary school). His former pupils had grown up in the town, and some had prospered, and were among my own contacts: businessmen, officials etc. Recalling his unruly classes and present comparative poverty, they probably knew nothing of his achievements in the museum; some mocked at him as a failure. As he had no car, I took him out mothing to the Oudalle quarry one autumn evening. At this spot one could sample both chalk-hill and woodland insects flying to the sheet. The Angleshades (*Phlogophora meticulosa* L.) was the commonest of the larger moths that night, and Maury boxed a few specimens of other orders. He was delighted with the evening. Later he introduced me to two young enthusiasts who had visited his museum; Patrick Huon and Guy Sircoulomb.

Patrick was the teenage son of a Le Havre Esso distributor. He was more a general naturalist than I, but was willing to join me on one or two trips. Mothing in the Tancarville woods he helped me with the lamp and sheet, and some of the time amused himself mimicking the tawny owls. He hooted so perfectly that one or two were attracted despite my light. When my wife and I called on his parents we found that Patrick also kept tropical fish in illuminated aquaria. Later he entered the national forestry service.

Guy was the younger son of a cabinet-maker of Harfleur. Both sons were skilled cabinet-makers. I think the elder boy succeeded his father in the trade, but Guy became an employee in an import-export firm with lepidoptera as his hobby. We corresponded for some years after my departure, and he noted the variations in the yearly numbers of Bond's Wainscot moth (*Photedes morrisii* Dale) in its tiny colony at Cap le Hode, where I had discovered it as "new to France". I met him again in 1987. He was married and commuting from near Caudebec, to Le Havre.

The senior lepidopterist in this part of Normandy, however, was Dr Lainé, residing in a country house west of the Seine near Rouen. He was a medical practitioner, broad and bland; and I sought his advice and help when members of the British entomological and Natural History Society made two visits in May 1972 and June 1973 to mark that Society's

Dr M. & Mrs Lainé at the Museum.

centenary, both led by Leslie Crick, and he responded hospitably. Two localities near Le Havre and four near Elbeuf were visited and several species of butterfly, unknown to fly in England, showed themselves.

The first outing to Le Havre almost coincided with that of the Queen to Paris. Her Majesty embarked on the Royal yacht at Rouen the same day I met the English party at Le Havre. We spent two nights at the riverside Hotel de la Marine at Tancarville mainly to explore the wooded "valleuse" behind the cliff-top chateau. Our hostess at first jumped to the conclusion that our visit's sole object was to watch the Royal yatch pass by on its return to England.

"Some friends are lighting a small bonfire of welcome", she told us, "but it will be after supper. The pilots inform us that it may be after ten o'clock".

"Doubtless Her Majesty will be fast asleep," I told her, "nor would we wish her disturbed. But we shall watch."

In fact we saw the brightly illuminated Britannia slide by, and the equally quiet bonfire blazing, at about midnight.

On the second occasion, Leslie Crick with Willie Tams drove his own car to the Hotel de la Marine, Caudebec, where my wife and I, at the start of a local leave, stayed the first night; later Crick and Tams stayed with the hospitable Dr Lainé. On 25th June our two cars left Normandy for Pralognan in the Alps of the Haute Savoie, spending one night at Tournus en route. After getting acquainted with the fauna and flora of the French Alps, my wife and I returned to Le Havre. Willie was by now quite aged; he needed help getting about on steep slopes, and did not collect seriously.

During my stay at Le Havre I took leave in various parts of Europe, driving to the Eastern Pyrenees in June - June 1970; to Switzerland again and the Western Alps of France and Italy in June 1971; and eastwards to Norway, by car-ferry to Christiansand but no further north than Valdres, in June - July 1972. However, in May 1973 my wife and I flew to Crete, and squeezed in a drive to Britanny before Leslie Crick arrived. In June

1974 we were content to go no further than Carteret on Manche peninsula. For duty also required annual visits to the Embassy, Paris; and these permitted meetings there with Claude Herbulot, the Geometrid specialist, and Philippe Viette at the Muséum National d'Histoire Naturelle.

Back in Le Havre in 1973-4 I gave to the local Museum a complete sample of what I had collected in that area, including some families for whose determination I had recourse to Maitland Emmet, a fellow member of my London society. The Museum published in 1974 and 1975 the list, and about the same time the authorities completed the restoration and restaffing, whereby a young zoologist, Prof. Gérard Breton, took over the reins from Maury. In 1974 he helped me to illustrate some forty Middle East lepidoptera species, though these were not his speciality. Perhaps the anatomical slides christened (metaphorically) the Museum's new, magnificent microphotographic apparatus, or enabled him to familiarise himself with its working. The best of the resulting prints duly appeared in two of my subsequent publications in 1975 and 1979.

I met Breton, Sircoulomb and Lainé in 1987 in Le Havre when after my final retirement I revisited the town. Lainé had in fact by coincidence organised a night-meeting of sixteen naturalists from around Evreux in the Nature Reserve of Marais Vernier, and invited my wife and me to join both the supper and the descent into the marsh by six cars and almost as many bright lights. Rain rather spoilt the condition of some of the attracted lepidoptera; but we enjoyed chatting with Madame Lainé in the shelter of our Rover. Her presence there had rather surprised us, knowing that she had formerly run a beauty shop in Paris when the Normandy countryside palled; however, retirement from commerce or other duties comes to most of us, and she explained that she was "a follower" of her husband; "Oh, je suis, je suis".

Remembering Boursin's disillusioned generalisation about entomology and marriage being ill-suited (see p. 253, vol. 103, this journal). I was pleased that it was a French couple who here disproved it.

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HOLOTRICHA EXCISA MOSER (COL.: SCARABIDAE) — A NEW PEST OF MAIZE IN HIGH ALTITUDE AREAS OF INDIA

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IN INDIA occurrence of 250 insects and mites belonging to 174 genera under 69 families and ten natural orders has been reported on maize from sowing to harvest and from grain storage to its consumption (Mathur, 1987) and out of these 250 insects 14 species of coleoptera damage the maize crop in different parts of this country. In addition Mathur *et al* (1989) reported the seed maggot (*Decachaetophora aeneipes*), cut worm (*Xestia-c-nigrum*) and silk cutter (*Popillia pulchrips*) as unknown pests of maize and the first two of these insects were noticed in high altitude areas.

During a survey of maize pests in May - June 1990 at high altitude areas, the grubs of *Holotrichia excisa* Moser were noticed from the maize crop at Auli (Joshimath) situated at 3,000m above mean sea level. The grubs collected from the maize crop were kept in glass troughs with maize plants in the laboratory and reared to the adult stage. Grubs damage the crop by devouring subterranean parts of the plant inside the soil from late May to August. One to two grubs per plant were recorded. Preliminary observation of infestation by the grubs varied from 8 to 23 per cent in 10 x 2.6m maize plot. The full grown grub is creamy white and measures 2.6cm in length. The adult beetle is dark brown in colour and feeds on silk and tassel of the maize crop. The detailed biology of the reported insect is under study.

Acknowledgements

We are grateful to Dr (Miss) Swaraj Ghai, Dr R.K. Anand and Dr V.V. Ramamurthy, Entomology Division, Indian Agricultural Research Institute, New Delhi, for the identification of the reported insect.

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Two records of the Six-belted Clearwing *Bembecia scopigera* Scopuli (Lep.: Sesiidae) from Clwyd, North Wales

5.7.1991 at Ballswood Sand Quarry, Gresford, SJ348564 (v.c.50) (B.F.) The specimen was netted about mid-day, flying low to the ground, and would probably not have been seen had the collector not been seeking

aculeate wasps at the time. The vegetation included abundant Kidney Vetch and Bird's-foot Trefoil, both recorded foodplants.

21.7.1991 at Glan-y-don sea front, SJ174797 (v.c.51) (collected by Brenda Wallace). The specimen was observed flying and "head-butting" seed-heads of Birds-foot Trefoil during a warm but overcast early afternoon. The specimen was a female and was probably laying. (Kidney Vetch and Lucerne were also present.) The patch of vegetation it was frequenting is on a very small piece of highly calcareous ground produced by limestone infill behind the sea wall.

As with B.F.'s specimen, this one was also found by chance. It was pursued by the collector's young son, who studies hover flies. Its true nature was only appreciated when it began to hover and the thickened antennae were noticed.

These finds seem to be an extension to the range recorded in Skinner (1985) and Heath & Emmet (1985).

The species does not appear in the various collated lists for North Wales produced by Smith (between 1948 and 1954), and Mrs M.J. Morgan at Bangor University has no North Wales entries in her card index of Welsh Insect Records. A likely locality for it in the area would seem to be the Great Orme, but it has not been encountered during detailed work there by H.N. Michaelis (pers. comm.). Goater (1974) records its rediscovery in Hampshire, and Sutton & Beaumont (1989) describe its recent re-appearance in Yorkshire, where it is now found inland as well as on the coast as formerly.

Although clearwings are frequently overlooked, it does suggest that after a period of decline, this species has recovered and now extended its original range.

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NOTE: A visit to another quarry close to Ballswood on 26.6.1992 yielded seven *scopigera* within 45 minutes!—B.F.

THE IMMIGRATION OF LEPIDOPTERA TO THE BRITISH ISLES IN 1990

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(Continued from p.127)

ANNEX II

Records of scarcer immigrant species in 1990: adults only unless otherwise stated

Suspected immigrants of resident species are marked *. Unless otherwise indicated all references are to single examples. For nocturnal species, dates are as far as possible for the beginning of the night, and unless stated to the contrary, are of examples at light traps or otherwise at light.

PYRALOIDEA

Pediasia fascelinella Hbn. KENT E. Dungeness, 3-8 (Clancy, *Br. J. ent. nat. Hist. Soc.* **4**: 28; idem, *Ent. Rec.* **103**: 52). New to Kent.

Eucromius ocellea Haw. ESSEX S. Bradwell-on-Sea, 18.10 (S. Dewick), YORKS (v.c.61) Spurn, 25.9 (B.R. Spence)

Evergestis extimalis Scop. CORNWALL W. Penzance, 3.8 (M.P. Semmens). DEVON S. Colyton, 31.7 (B.P. Henwood). LINCS N. Northcotes, 28.7, 29.7 (R. Lorand per R. Johnson). HANTS, ISLE OF WIGHT Totland, 18.7 (S.A. Knill-Jones).

E. limbata L. GUERNSEY La Chêne, Forest, 18.7 (Peet, *Br. J. ent. nat. Hist.Soc.* **4**: 32, plate 2, fig. 11; idem, *Ent. Rec.* **102**: 302; Peet per Austin, *Entomology Report for 1990,* p.2). **New to Britain.**

Hellula undalis F. (6). CORNWALL W. Penzance, 17.10 (M.P. Semmens); Lands End 17.10 (S. Colenutt *et al*). DEVON S. Branscombe, 30.9, 2.10 (P.J. Baker). DORSET Studland, 1.10 (P. Davey); Portland, 1.10 (Anon., *Portland Observatory Report, 1990,* p.34).

Margaritia sticticalis L. (2). CORNWALL W. Penzance, 3.8 (M.P. Semmens); Lizard, 30.9 (Dr J. Clarke).

Uresiphita polygonalis D. & S. (10). CORNWALL W. Coverack, 30.9 (5) (Dr J. Clarke); Penzance, 17.10 (M.P. Semmens). DORSET Swanage, 17.10; Studland, 17.10 (D.C.G. Brown). ESSEX S. Bradwell-on-Sea, 14.10 (A.J. Dewick). HANTS ISLE OF WIGHT Chale Green 2.10 (S. Colenutt).

Sitochroa palealis D. & S. DORSET Durleston, 1.8, 11.8 (2) (R.J.H. Murray). OXFORD Wittenham, 2.8 (D.F. Owen). SUSSEX W. Thorney Is, 1.8 (2) (C.B. Collins). SUSSEX E. Peacehaven, 30.7 (C. Pratt). HANTS ISLE OF WIGHT Godshill, 29.7 (P.J. Cramp per S. Knill-Jones).

S. verticalis L. CARMARTHEN Llwynhendy, 1.9 (I.K. Morgan).

Ostrinia nubilalis Hbn. HANTS ISLE OF WIGHT Chale Green, 2.9 (S. Colenutt per S. Knill-Jones). DORSET Portland, 13.10 (Anon. *Portland Observatory Report, 1990,* p.34).

Anania pulveralis Hbn. KENT E. Dungeness, 3.8 (Clancy, *Ent. Rec.* **103**: 51).

Diasemiopsis ramburialis Dup. (3). CORNWALL W. Penzance, 17.10 (M.P Semmens). ESSEX S. Bradwell-on-Sea, 19.10 (A.J. Dewick). HANTS ISLE OF WIGHT Chale Green, 12.8 (S. Colenutt per S. Knill-Jones).

Hymenia recurvalis F. KENT E. Dungeness, 17.10 (Clancy, *Br. J. ent. nat. Hist. Soc.* **4**: 28).

Palpita unionalis Hbn. (179). BERKSHIRE Wash Common, 12.10 (N. Cleere); Fernham, 17.10, 18.10 (S. Nash). CORNWALL W. St Mary's, Scilly Is, 10.10, 17.10, 18.10 (3) (P. Hopkins); Coverack, 29.9, 4.10 (Dr J. Clarke); Penzance, 29.9, 14.10 (2), 16.10 (M.P. Semmens); Cusgarne, 14.10 (2), 17.10 (5), 18.10 (2), 20.10, 21.10 (A. Spalding); Land's End, 17.10 (9), 18.10 (3) (S. Colenutt *et al.*). DEVON N. Atherington, 16.10 (2) (M. Parsons & A. Foster). DEVON S. Branscombe, 1.10 (P.J. Baker). DORSET Durlaston, 16.10 (D. Howton & J. Ward), 17.7, 3.9, 18.10 (6), 19.10, 9.11, 13.11, (R.J.H. Murray); Herston, Swanage, 16,10, 17.10 (2) (D. Hawton & J. Ward); Swanage, 16.7, 17.10 (6); Studland, 30.9, 10.10 , 13.10, 14.10 (6), 17.10 (8) (D.C.G. Brown); Weymouth, 30.9 (N. Arnold); Swanage, 5.10 (G.A. Collins & J. Porter); Portland, 11.10 (R. Darlow); Studland, 11.10 (P.H. Sterling per D.H. Stirling); Swanage, 9.10 (B. Skinner); Portland, 17.10 (M. Halsey); 1.10, 13.10 (2), 18.10, 19.10 (2) (Anon, *Portland Observatory Report, 1990,* p.34); near Swanage, 17.10 (P.Q. Winter); Durlston, 12.11 (P. Davey). ESSEX N. Saffron Walden, 22.8 (A.M. Emmet). ESSEX S. Bradwell-on-Sea, 15.10, 16.10, 18.10 (3), 19.10, 20.10 (7) (A.J. Dewick); 16.10, 18.10, 20.10 (3) (S. Dewick). HANTS S. Highcliffe, 12.10 (E.H. Wild); Titchfield Haven, 14.10; Chilling, Warsash, 17.10 (2) (P.M. Potts). HANTS ISLE OF WIGHT Chale Green, 9.11 (2) (S. Colenutt per S. Knill-Jones); Freshwater, 13.10, 18.10 (4) (S. Knill-Jones). HERTS Much Hadham, 17.10 (D. Wilson). KENT W. Orpington, 13.10 (I. Ferguson). KENT E. Dungeness, 17.10; Greatstone, 16.10, 18.10 (2) (S.P. Clancy); Greatstone, 19.10 (2) (B. Banson per S.P. Clancy); Dungeness, 17.10 (A.P. Russell); Folkestone, 18.10, 20.10, 22.10 (T. Rouse per S.P. Clancy); Newington, 19.10 (R.E. & C.G. Lane); Canterbury, 20.10 (T.W. Harman). LINCS N. Dalby Hall, 30.9 (Mrs G. Dawson per R. Johnson); Little Cawthorpe, 19.10 (2) (J. Jaines per R. Johnson). NORFOLK E. Scole, 18.8 (M.R. Hall per D. Hipperson); Overstrand, 17.10 (R.M. Cox per D.C.G. Brown). SURREY South Croydon, 17.10, 19.10 (G.A. Collins). SUSSEX E. Lewes, 15.7 (Emmet, *Br. J. ent. nat.Hist. Soc.* **4**: 28); Holywell, 12.10 (M. Parsons, C. Pratt, G. Botwright); Ninfield, 19.10; Peacehaven, 22.8, 25.8, 26.8 (2),

28.8, 31.8; Eastbourne, 19.10 (4) (C. Pratt). SUSSEX W. Hassocks, 13.11 (D. Dey); Walberton, 11.10, 16.10 (2), 17.10 (4), 9.11 (J. Radford); Littlehampton, 16.10 (2) (M. Parsons & A. Foster); 12.10 (B. Skinner); Pagham, 13.10 (2) (B. Skinner). WARWICK Rugby, 10.9, 14.9 (Dr D. Porter per D.C.G. Brown); Charlecote, 17.10 (A. Gardner). GUERNSEY Le Chêne, 13.7, 3.10 (2) (T.N.D. Peet, in R. Austin, *Moths and butterflies of Guernsey,* p.11); "occurs annually" (Peet, *Br. J. ent. nat. Hist. Soc.* **4**: 32).

Etiella zinckenella Treits. HANTS S. Warsash, 1.10 (P.M. Potts per Dr J.R. Langmaid) (*Br. J. ent. nat. Hist. Soc.* **4**: 31.) Second British record.

****Dioryctria abietella*** D. & S. (3) CORNWALL W. Coverack, 29.9 (Clarke, *Ent. Rec.* **103**: 69). KENT E. Greatstone, 17.6 (S.P. Clancy). YORKS (v.c.61) Spurn, 26.7 (B.R. Spence).

****Ancylosis oblitella*** Zell. (5) ESSEX N. Saffron Walden, 22.8 (Emmet, *Br. J. ent. nat. Hist. Soc.* **4**: 28). HANTS S. Sparsholt, 1.8 (A.H. Dobson). NORFOLK N. Burgh, 29.8 (K.G. Saul per D. Hipperson). WILTS S. Dinton, 15.9 (J. Pitman & S. Palmer). GUERNSEY Le Chêne, 2.9, "the only Guernsey record" (Peet, *Br. J. ent., nat. Hist. Soc.* **4**: 32).

PAPILIONOIDEA

Papilio machaon L. OXFORDSHIRE Hartsloch NR (v.c.23), 5.5. The following note received from N. & M. Deserens: "We had good views of a Swallowtail butterfly at Hartsloch. It was late afternoon and the sun was warm as it shone on the west facing slope. The butterfly settled several times on the boundary shrubs at the top (east side) of the Reserve over a period of about five minutes. It was too high to get any sort of photograph but the identification was quite certain" (B. Baker *in litt.*).

Colias hyale L. or ***C. alfacariensis*** Berger (3). KENT E. Hamstreet, 3.8, seen but not taken, but believed almost certainly to be one or other of these two species (S.P. Clancy). SUSSEX E. Cooksbridge, 3.8; Lewes Racecourse, 5.8 (Wakeham-Dawson, *Bull. amat. ent. Soc.* **50**: 11).

Lampides boeticus L. (c. 105 plus c. 4 larvae). KENT W. Petts Wood, 27.8, male "feeding from the flowers of Common Fleabane" (Goodwin & Knowles, *Bull. Butt. Cons. Soc.* **46**: 29). MIDDLESEX Gillespie Park LNR, Islington, 21.8, 22.8, 23.8, 24.8, 27.8 (7), 28.8 (6), 29.8 (8), 30.8 - 2.9 (none seen as park closed), 3.9 (2), 4.9 (5), 5.9 (7), 6.9 (7), 7.9 (5), 8.9 (park closed), 9.9 (5), 10.9 (6), 11.9 (5), 12.9 (8), 13.9 (6), 14.9 (3), 15.9 (park closed), 16.9, 17.9 (heavy rain, non seen), 18.9 (4), 19.9 (3); none seen since (A. Powell pers. comm.). "Two slug-like larvae were also found" (Wurzell, *Bull. amat. ent. Soc.* **49**: 254-256); Gillespie Park, ". . . two final instar larvae on *Colutea arborescens,* collected 20.9.90 . . . pupated 22.9.90 . . . two crippled males emerged 2.10.90 between 10.00 and 16.30 hours BST" (C.W. Plant *in litt.*). A larva collected by staff at Gillespie Park on

19.9 pupated 29.9, imago emerged 10.10 (C.W. Plant *in litt.*). Kensal Rise Cemetery, Harrow Road, W10, 22.8 (two females flying about flowers of Everlasting Pea (*Lathyrus latifolius*); 23.8 (3 males, 2 females); 24.8 (2 males, 2 females) feeding on Snowberry (*Symphorcarpos rivularis*); no more seen as area "strimmed" by groundsmen working for the General Cemetery Co. (T.H. Freed *in litt.*). SURREY Ranmore Common 25.8, female on a flower of a garden escape "sweet pea" and photographed (Smith, *Bull. amat. ent. Soc.* **49**: 254). Kew Gardens, 2.9, one seen and photographed (R. Hastings per P. Cribb).

Danaus plexippus L. CORNWALL W. Cot Valley, 17.10 (S. Colenutt & D. Swennson). SUSSEX E. Scanes Hill, Haywards Heath, 13.9, seen by Mrs F.E. Luckens (Dr C.J. Luckens).

Nymphalis antiopa L. SUSSEX E. Scanes Hill, Haywards Heath, 7.8, seen by Mrs F.E. Luckens (Dr C.J. Luckens *in litt.*).

GEOMETROIDEA

Cyclophora puppillaria Hbn. (8) CORNWALL W. Land's End, 17.10, 18.10 (S. Colenutt *et al.*); Perranporth, 20.10 (Dr F.H.N. Smith). KENT E. Warehorn, 13.10, male (N. Davies per Woiwod *et al., Light Trap Newsletter*).; NORFOLK W. Weeting Heath, 21.8 (P.G. Cardy per D. Hipperson *teste* P. Waring *in litt.*). SUSSEX W. Littlehampton, 4.10 (B. Skinner); Walberton, 17.10, 18.10 (J. Radford per C. Pratt *in litt.*).

****C. linearia*** Hbn. KENT E. Dungeness, between 27.7 & 4.8 (Clancy, *Ent. Rec.* **103**: 52).

****Idaea vulpinaria*** H.-S. KENT E. Greatstone, 28.7 (B. Banson per S.P. Clancy); Dungeness, 2.8 (Clancy, *Ent. Rec.* **103**: 52).

Rhodometra sacraria L. (147) BERKS Fernham, 14.10, 17.10, 20.10 (S. Nash); Uffington, 17.10 (E.W. Classey per S. Nash). CORNWALL W. Penzance, 20.7, 30.9, 14.10, 16.10, 17.10 (2), 18.10 (2); Marazion Marsh, 17.10 (M.P. Semmens); Cape Cornwall, 29.9; Sennen Cove, 15.10 (J.M. Walters per R.F. Bretherton); Cusgarne, 10.10, 16.10 (3), 17.10 (12), 18.10 (8), 19.10 (4), 20.10 (A. Spalding); Gillan Creek near Falmouth, 29.9, 30.9 (2), 1.10(2) (C. Hart); Coverack, 30.9 (10), 4.10 (3) (Dr J. Clarke); St Mary's, Scilly Is, 7.10, 16.10 (20), 18.10 (P.H. Hopkins); Ladock Woods near Truro, 8.10 (P.N. Siddons & C.A. Brind per Dr. F.H.N. Smith); Land's End, 7.10, 16.10 (4), 17.10 (6), 18.10 (9) (S. Colenutt *et al.*). CORNWALL E. Bude, n.d. (Wedd, *Br. J . ent. nat. Hist. Soc.* **4**: 26). DEVON S. Branscombe, 30.9 - 1.10 (4) (P.J. Baker). DORSET Studland, 2.8 (P. Davey); 29.9, 1.10, 23.10 (D.C.G. Brown); Wimborne, 30.9 (J. Fradgley); Holes Bay Saltmarsh, 10.10 (G.G. Eastwick-Field); Swanage, 29.9 (D.C.G. Brown), 6.10 (M. Halsey); Portland, 12.10 (3), 18.10 (2) (Anon, *Portland Observatory Report, 1990,* p.34). ESSEX N. Saffron Walden, 12.10 (A.M. Emmet). ESSEX S. Bradwell-on-Sea, 12.10, 18.10 (S. Dewick). HANTS S. Havant, 13.10 (C.B. Collins); Chilling, Warsash,

17.10 (P.M. Potts); Winchester, 17.10 (D.H. & P. Sterling). HERTS Much Hadham, 19.10 (D. Wilson). KENT E. Greatstone, 29.9 (B. Banson per S.P. Clancy); Dungeness, 29.9 (D. Young); 18.10 (D. Walker per S.P. Clancy); 19.10 (S.P. Clancy); Hamstreet, 30.9 (B. Skinner). MIDDLESEX Kenwood, 30.8 (R.A Softly). OXFORD Long Wittenham, 17.10 (Dr D.F. Owen). SUFFOLK E. Thorpeness, 30.10 (A. Foster). SURREY Leigh, 13.10, 19.10 (R. Fairclough). SUSSEX E. Ninfield, 29.9 (2), 19.10, 20.10 (M. Parsons); Peacehaven, 1.10, 18.10 (C. Pratt). SUSSEX W. Walberton, 29.9(3), 1.10, 5.10, 16.10 (J. Radford); Rogate, 14.10 (J.A.C. Greenwood); Pagham Harbour, 13.10 (2) (D.C.G. Brown). WARWICK Charlecote, 16.10 (A. Gardner). GUERNSEY Le Chêne, 14.9 (Dr T.N.D. Peet). The Dell, 13.10 (Austin, *Moths & butterflies of Guernsey, 1990,* p.15).

Phibalapteryx virgata Hufn. NORFOLK E. Filby, 29.8, female. Species "not resident in this part of Norfolk. Recorded during a southerly airstream and coincided with the appearance of *A. convolvuli* at Filby" (A. Foster *in litt.*).

Orthonama obstipata F. (68). CORNWALL W. Gillan Creek, 29.9 (2) (C. Hart); Coverack, 30.9, 1.10 (6) (Dr J. Clarke); Ladock Woods near Truro, 8.10 (P.N. Siddons & C.A. Brind per Dr F.H.N. Smith); Penzance, 29.9, 14.10, 19.10 (M.P. Semmens); Cusgarne, 20.10, 30.10, 31.10, 10.11 (2), 16.11, 19.11; Tresillian near Truro, 21.10 (A. Spalding); Land's End, 16.10 (3), 17.10 (5), 18.10 (6) (S. Colenutt *et al.*); St Mary's, Scilly Is, 16.10 (P. Hopkins). DEVON S. Plympton, 4.8 (R.J. Heckford). DORSET Durlston, 10.6, 18.10 (R.J.H. Murray); Herston, Swanage, 13.10 (female at ivy), 18.10 (8) (D. Howton & J. Ward); Swanage, 17.10; Studland, 23.10 (D.C.G. Brown); Portland, 1.10 (3), 18.10 (2) (Anon, *Portland Observatory Report, 1990,* p.34); Weymouth, 20.10 (N. Arnold). ESSEX S. Bradwell-on-Sea, 15.10, 17.10 (A.J. Dewick), 2.6, 23.10 (S. Dewick). HANTS S. Sandy Point, Hayling Is, 20.10 (P.M. Potts & Dr J.R. Langmaid); Highcliffe, 15.11 (E.H. Wild). KENT E. Dungeness, 30.7 (D. Walker per S.P. Clancy); 4.8 (B. Skinner); 18.10 (S.P. Clancy); Folkestone Warren, 1.8 (Clarke, *Ent. Rec.* **102**: 302). ISLE OF MAN Ballafodda Ronague, 17.10 (G. Crane). NORFOLK E. Overstrand, 18.10 (R.M. Cox per D.C.G. Brown); Filby, 17.10 (K. Saul per A. Foster). SUSSEX E. Peacehaven, 18.10 (C. Pratt). SUSSEX W. Walberton, 21.3, 6.7, 10.10, 13.10 (J. Radford). HANTS ISLE OF WIGHT Chale Green, 13.8 (S. Colenutt per S. Knill-Jones). WORCESTER Leigh, 29.9 (Dr A.N.B. Simpson).

Scotopteryx peribolata Hbn. DORSET Shell Beach, Studland, 12.9. (Young, *Ent. Rec.* **103**: 275).

Thera cupressata Geyer (4) CORNWALL E. St Austell, 14.10 (W. Kittle per B. Skinner). DORSET Durlston, 20.10 (Dr J. Clarke). HANTS ISLE OF WIGHT Niton, 12.10 (D.B. Wooldridge per S. Knill-Jones). HANTS S. Southsea, 13.10 (Dr J.R. Langmaid).

Crocallis dardoinaria Donzel GUERNSEY Icart, 4.9; Petit Bot, 11.9 (G. & F. Higgs in Austin, *Moths and butterflies of Guernsey, 1990,* p.18; Higgs, *Br. J. ent. nat. Hist. Soc.* **4**: 24, plate 2, fig. 3). **New to Guernsey and Great Britain.**

Peribatodes manuelaria H.-S. KENT E. Lydd, 27.8 (P. Carter per S.P. Clancy). **New to Britain.**

**Hylaea fasciaria* L. f. *prasinaria* D. & S. KENT E. Greatstone, 2.9 (S.P. Clancy).

SPHINGOIDEA

Agrius convolvuli L. (c.140 and 6 larvae). BERKS Fernham, 28.9, 19.10 (S. Nash). CORNWALL W. Lizard, 6.7 (C. Wills per D.C.G. Brown); Trispen, Truro, 9.9 (R.D. Penhallurick); Newquay, 12.9 (Dr B.P. Henwood; Coverack, 30.9 (2), 1.10, 2.10 (Dr J. Clarke); Penzance, 1.10, 13.10; Kenidjack, 23.9, 2 larvae and 3 more larvae a few days later (M.P. Semmens); Scilly Is, late September and early October (several moths) (V. Tuckes); St Mary's, Scilly Is, 15.10 (M. Evans). CORNWALL E. St Erme, about 10.9 (R.D. Penhallurick per Dr F.H.N. Smith); Polperro, about 10.10 (R. Puckey per Dr F.H.N. Smith). DEVON S. Hope Cove, 8.9 (P. Sanders per V. Tuckes); Branscombe 30.9 (3) P.J. Baker); Ermington, 16.10 (2 at *Nicotiana*) (B. Hucker per G. Else). DEVON N. Welcombe, Bideford, 10.9 at *Nicotiana* (P. Rosser). DORSET Durlston, 1.8 (3), 2.8, 21.8 (2), 22.8 (3), 25.8, 29.8, 31.8 (5), 2.9 (3), 3.9 (5), 9.9 (2), 10.9, 6.10, 19.10, 29.10 (R.J.H. Murray); Weymouth, 3.9 (N. Arnold); Portland, 13.9 (D. Young); 19.8, 8.9, 11.9, 30.9 (Anon, *Portland Observatory Report, 1990,* p.34); Swanage, 29.9; Studland, 30.9, 7.10, 14.10, 17.10, 22.10 (D.C.G. Brown); Charlton Marshall, 30.9 (Dredge per A. Gardner); Durlston, 1.10 (B.L. Statham); Worth Maltravers, 7.10 (G.E. Higgs); Winspit, 17.10 (D. Howton & J. Ward); Durlston Head, 13.10 (B.R. Baker); Studland, 14.10 (P.H. Sterling per D.H. Sterling). ESSEX S. Bradwell-on-Sea, 4.9, 15.9, 2 imbibing at *Nicotiana,* 18.9 (A.J. Dewick); 29.8 (S. Dewick). ESSEX N. Colchester, 5.10 (P.J. Divers per J.P. Bowdrey). GLOS W. Alverston, 3.10 (Constable per R. Barnett). HANTS S. Sparsholt, 19.9 (A.H. Dobson); Near Sinah Warren, Hayling Is, October (one found dead by J. Fawkins) (T. King per G. Else); Lymington, 18.10 (A.J. Pickles). KENT E. Dymchurch 26.8 (2) (J. Owen); Dungeness, 29.8, 30.8 (S.P. Clancy); 29.9 (A.P. Russell); 29.9 (3) (Dyke, *Br. J. ent. nat. Hist.* **4**: 62). LINCS N. Muckton, 1.9, 2.9, 8.9 (G. Wright per R. Johnson); Little Cawthorp, 19.10 (J.Jaines per R. Johnson). NORFOLK E. Reedham, 14.8 (T. Moore per A. Foster); Sheringham, 30.8 (M.P. Taylor per H. Hipperson); Holt, 31.8 (G. Carrick per D. Hipperson). NORFOLK W. Shouldham, 22.8 (R. Skeen per A. Foster). SUFFOLK E. Blundeston, 11.9 (M. Gould per D. Hipperson). SURREY Hindhead, 27.8 (E.V. Emmett). SUSSEX W. Selsey, mid September (Dening, *Ent. Rec.*

103: 109); Climping, 24.10 (D.C.G. Brown); Walberton, 31.8 (J. Radford); Southwater, 29.8 (Knott, *Ent. Rec.* **102**: 305). SUSSEX E. Hassocks, 16.10 (D. Dey); Crowborough, 18.9 (M. Parsons); Seaford, 6.9 (Hurrell per M. Parsons); Hastings, 13.10 (D. Joy per M. Simmons); Eastbourne, 11.8 (Strong per D. Rushen); Willingdon, 1.9 (Mrs McTear per C. Pratt); Peacehaven, 6.10 at *Nicotiana* (C. Pratt). WARWICK Charlecote, 22.9 (D.C.G. Brown). HANTS ISLE OF WIGHT Chale Green, 31.8, 1.9, 2.9, 4.9, 7.9, 9.9, 15.9, 2.10 (3) (S. Colenutt per S. Knill-Jones); Bouldnor, 23.10 (Mrs M. Goodman per S. Knill-Jones). Co. CORK MID Mahon Peninsula, 7.9 (M. O'Mahony per K.G.M. Bond); Oysterhaven, 16.9 (G. Allen per K.G.M. Bond). KERRY Tralee, n.d. (Lavery, *Bull. amat. ent. Soc.* **50**: 125). ORKNEY Stromness, 5.9, 21.9 (M. Grey per I. Lorimer). GUERNSEY Airport, 21.8 (A. Smith); Le Chêne, 23.8 (2), 26.8, 24.9 (full grown larva) (Dr T.N.D. Peet); La Carriere, 10.9 (G. & F. Higgs); St. Peter's, 25.8; Old Marais Lane, Vale, 17.9. All the foregoing Guernsey records per Austin, *Moths and butterflies of Guernsey, 1990,* p.19.

Acherontia atropos L. (16 plus 16 larvae and 7 pupae). CORNWALL E. Camelford, n.d. (Dr J.R. Holden). CORNWALL W. Penhale, 1.10 (A. Cross per Dr F.H.N. Smith); St Mary's, Scilly Is, between 13 and 20.10 (D.Dey); Scilly Is "at least 3 in October . . . apparently one was watched alighting briefly on the sea, close to the shore before making landfall" (V. Tuckes *in litt.*); Land's End, 17.10 (S. Colenutt *et al.*). KENT E. Romney Marsh, 20.8 (larva) (T. Rouse per S.P. Clancy). LINCS N. North Somercotes, July (G. Wright per R. Johnson); Scunthorp, 28.6 (W. Johnson); Donna Nook, 9.7 (R. Lorand per R. Johnson). NORFOLK E. Catfield, August (A.G. Irwin); Hoverton, 31.7 (J. Parmenter per D. Hipperson); Winterton Dunes, 17.10 (P. Waring & A. Foster). NORFOLK W. Titchwell, 1.9, larva (D. Richmond per A. Foster). SOMERSET N. Portishead, 6.10, imago on wall of house (Mrs R.J. Humphreys per R. Barnett). SUFFOLK W. Cockfield near Bury St Edmunds, September (4 pupae) (P. Waring). SUSSEX W. Lancing, early August (C. Heal per C. Pratt); Seaford 21.8 "full grown larva, on variegated privet hedge" (M. Grey per D. Rushden of *Living World* per C. Pratt); Walberton, 16.10 (J. Radford per C. Pratt). SUSSEX E. East Chiltington, 9.9, pupa in ditch, moth emerged 30.10 (M. Holloway per M. Parsons); 4.9 (larva, moth hatched 22.11), 12.9 (pupa, hatched 30.10) (D. Dey). WARWICK Fenny Compton, 4.9 (larva), 5.9 (6 larvae), all feeding on Woody Nightshade (J. Grant per A. Gardner). WILTS N. Norton near Chippenham, 29.9, larva, moth hatched 25.11 (Irvine per S. Palmer who confirmed determination). WILTS S. Westbury-sub-Mendip, 11.10, larva and pupa in potato plot (Goady per Barnet). CHANNEL IS. Sark late July, full-grown larva (Mrs Marsden per Austin, *Moths and butterflies of Guernsey, 1990,* p.19). CORK E. Greencloyne nr Youghal, 31.8 (larva) (E. Doody per K.G.M. Bond); Ballyreidy, Watergrasshill, 18.9, larva (A. Madden per K.G.M. Bond).

Hyloicus pinastri* L. (2) KENT E. Dungeness, 27.7 (Clancy, *Ent. Rec.* **103: 52). HERTS Much Hadham, 30.7 (D. Wilson).

Hyles gallii Rott. (11 plus 13 larvae). CHESHIRE Saltersley Moss nr Wilmslow, 26.8 a larva on Rose-bay Willowherb, and in the next few days a further 9, all within a few yards of the original spot (C.I. Rutherford). ESSEX S. Theydon Bois, 24.7 (J.G. Green per B. Goodey). Bradwell-on-Sea, 28.7 (A.J. Dewick). ESSEX N. Colchester, 28.7 (B. Goodey). KENT E. Sellinge, n.d. (A.J.W. Owston). LINCS N. Muckton, 27.7 (C.G. Wright *teste* R. Johnson). NORFOLK E. Scole, 30.7 (M.R. Hall per D. Hipperson). NOTTS Woodthorpe, Nottingham, 28.7 (R. Carpenter *teste* S. Wright). SUFFOLK W. Nowton, September, larvae (2), on fuschia, still feeding in early October (P. Waring). WILTS N. Calne, September, larva feeding on fuschia (M. West per S. Palmer). YORKS SE. Rudston, 12.6 (A.S. Ezard per P.Q. Winter). INVERNESS E. Near Kingussie, 31.7 (Baker, *Ent. Rec.* **103**: 108). ORKNEY Eday, 31.8 (Mrs Mason *teste* C.J. Booth per I. Lorimer).

H. lineata F. ssp. ***livornica*** Esp. (2) CORNWALL W. Perranporth, 4.4 (Smith, *Ent. Rec.* **102**: 192). DORSET Studland, 1.9 (D.A Young).

Hippotion celerio L. (5) DEVON S. Ermington, 24.10, one dead (B. Hucker per G. Else). DORSET Durlston, 29.9 (P. Davey); 1.10 (R.J.H. Murray). Swanage, 29.9 (P. Waring). SUSSEX E. Peacehaven, 7.10 (C. Pratt).

NOCTUOIDEA

****Pelosia muscerda*** Hufn. (5) KENT E. Hamstreet, 27.7 (M. Tickner per Riley, *Ent. Rec.* **103**: 236). Greatstone, 31.7 (B. Banson per S.P. Clancy). Dungeness, 1.8 (M. Halsey). Folkestone Warren, 1.8 (2 males) (Clarke, *Ent. Rec.* **102**: 302).

****Eilema pygmaeola*** ssp. ***pygmaeola*** Doubl. (2). ESSEX S. Bradwell-on-Sea, 28.7 (A.J. Dewick). YORK SE. Spurn, 30.7 (B.R. Spence).

Utetheisa pulchella L. (30) CORNWALL E. Bude, 29.9 (Wedd, *Br. J. ent. nat. Hist. Soc.* **4**: 26). CORNWALL W. Lizard, 29.9; Cape Cornwall, 29.9 (J. McCallum per J.M. Walters); Coverack, 30.9 (male), 1.10 (3 males) (Dr J. Clarke); Gillan Creek, near Falmouth, 1.10 (2) (C. Hart); Peninnis, St Mary's, Scilly Is, 3.10 (D. Taylor per D. Agassiz); Tresco, Scilly Is, 9.10 (J. Dick); Scilly Is, October n.d. (V. Tuckes, *in litt.*). DEVON S. Branscombe, 29.9 (2), 1.10 (P.J. Baker); Woodbury, Exeter, 30.9 (Riley, *Ent. Rec.* **103**: 100); Slapton, 7.10, 14.10 (A. Prowse per I. Bolt *in litt.* to P. Waring). DORSET Portland, 30.9 (P. Waring); 1.10 (Anon, *Portland Observatory Report, 1990,* p.33); Durlston, 2.10 (netted in a field) (B.L. Statham); Weymouth, 4.10 (netted at mid-day) (N. Arnold). ESSEX S. Bradwell-on-Sea, 6.10 (A.J. Dewick). SURREY Buckland, 5.10 (C. Hart). GUERNSEY St Martin's, 3.10 (Mrs J. Wells per Austin, *Moths and butterflies of*

Guernsey, 1990 p. 19). JERSEY Vallée des Vaux, 2.10 (5) (Buxton per Long, *Ent. Rec.* **103**: 273).

Euplagia quadripunctaria Poda. DORSET Portland, 18.8 (Anon, *Portland Observatory Report, 1990,* p.34). HANTS S. Totton, 6.9 (M. Jeffes).

Ochropleura leucogaster Freyer (2) CORNWALL E. Ladock Woods near Truro, 17.10 (P.N. Siddons per Dr F.H.N. Smith). DORSET Swanage 17.10 (D.C.G. Brown).

Eurois occulta L. ESSEX S. Bradwell-on-Sea, 29.7 (A.J. Dewick).

Papestra biren Goeze. HANTS S. East Stratton near Micheldever, 6.5 (B. Ivon-Jones per Sterling, *Ent. Gaz.* **42**: 60). WILTS S. Tilshead, n.d. (Clarke, *Br. J. ent. nat. Hist. Soc.* **4**: 23).

Mythimna albipuncta D. & S. (c.305). BERKS Fernham, 17.10 (2) (S. Nash). CORNWALL W. St Day, Redruth, 17.6 (P. Hopkins); Cusgarne, 21.10, 22.10 (A. Spalding); Kennack Sands, 23.8 (R.J. Heckford); St Mary's, Scilly Is, 18.10 (P. Hopkins), Coverack, 5.10 (Dr J. Clarke); Land's End, 16.10, 18.10 (3) (S. Colenutt *et al.*). DEVON S. Colyton, 4.8 (Dr B.P. Henwood); Yarner Wood, near Bovey Tracey, 21.10 (A.H. Dobson). DORSET Durlston, 14.5, 12.8, 13.8 (3), 14.8 (2), 21.8, 22.8, 23.8 (2), 24.8 (7), 25.8 (5), 26.8 (7), 27.8 (2), 28.8, 29.8 (2), 12.9 (2), 19.9, 13.10 (2), 19.10, 20.10 (11) (R.J.H. Murray); 13.10, 12.11 (R. Davey); 13.10 (B.R. Baker); 19.10 (5), 20.10 (2) (Dr J. Clarke); Swanage, 9.10 (2) (B. Skinner & R.G. Chatelain); 17.10 (7), 18.10 (5), 19.10 (P.Q. Winter); 1.8, 2.8, 30.9, 12.10 (4), 13.10 (3), 14.10 (3), 16.10 (2), 17.10 (10), 18.10, 19.10, 21.10, 22.10, 24.10 (2) (D.C.G. Brown); Herston, Swanage, 13 - 18.10 (17) (D. Howton & J. Ward); Studland, 11.10 (2), 12.10 (4), 13.10 (5), 14.10 (3), 15.10, 16.10 (4), 17.10 (7), 20.10 (2); 22.10, 24.10 (D.C.G. Brown); 14.10 (P.H. Sterling); Wimborne, 30.10 (2) (J. Fradgley); Portland, 17.10 (2) (M. Halsey); 8.6, 20.8, 27.8, 29.8, 1.10, 13.10 (2), 15.10, 18.10, 19.10 (Anon, *Portland Observatory Report, 1990,* p.36); 13.10, 17.10 (R. Darlow); Ringstead Bay, 18.10 (2) (R. Darlow); Worth Matravers, 11.10, 13.10 (G.E. Higgs); Weymouth, 19.10, 20.10 (N. Arnold). ESSEX S. Bradwell-on-Sea, 13.10, 16.10, 18.10 (A.J. Dewick); 17.10, 19.10 (S. Dewick). HANTS S. Titchfield Haven, 16.10, 17.10; Chilling, Warsash, 18.8, 19.10 (P.M. Potts); Lymington, 18.10 (A.J. Pickles). HANTS ISLE OF WIGHT Chale Green, 13.8 (S. Colenutt per S. Knill-Jones); Freshwater, 1.9, 15.10, 16.10 (2), 17.10, 18.10 (3), 19.10 (2), 20.10, 22.10 (2), 23.10 (3), 24.10, 25.10 (S. Knill-Jones). KENT W. Orpington, 12.10 (R.G Chatelain). KENT E. Dungeness, 26.8 (4) (M. Halsey); 1.9 (B. Skinner); 16.10 (D. Wilson); 17.10 (3) (A.P. Russell); 18.10 (2) (S.P. Clancy & D. Walker); 19.10 (2) (G.A. Collins); Greatstone, 20.8, 17.10 (S.P. Clancy); Hamstreet, 24.10 (N.R. Davies per S.P. Clancy). NORFOLK E. Scole, 19.10 (M.R. Hall per D. Hipperson). NORFOLK W. West Lynn, 26.7, 30.7 (2), 1.8 (D.

Hipperson). SUFFOLK E. Blunderston, July (M. Gould per D. Hipperson). SURREY Lingfield, 18.10 (Dr J. Clarke). SUSSEX E. Ashdown Forest, 19.8 (A. Butcher per S.P. Clancy); Hassocks, 12.10, 16.10 (D. Dey); Eastbourne, 12.10, 20.10 (M. Parsons). SUSSEX W. Pagham, 13.10 (3), 16.10 (B. Skinner); 13.10 (4) (D.C.G. Brown); 20.10 (G.A. Collins & S. Church); Littlehampton, 16.10 (M. Parsons & A. Foster); Walberton, 3.6, 23.8, 6.9, 5.10, 16.10 (4), 17.10, 9.11, 11.11, 12.11 (J. Radford per C. Pratt); Climping, 16.10 (R.G. Chatelain). WILTS S. Dinton, 17.10 (3) (S. Palmer). GUERNSEY "Recorded at light at 12 sites on 22 nights between 12th June and 17th October" (Austin, *Moths and butterflies of Guernsey, 1990,* p.22). St Peter's, 3.9 - 15.9 (8) (G.E. Higgs).

(to be concluded)

Rothamsted Farmland Ecology light trap network: interesting Lepidoptera records for August, 1991.

Several species usually associated with wet localities were caught in August. These included single *Chilodes maritimus* Tauscher on the 10th, *Calamotropha paludella* Hübner on the 5th and 9th, *Nonogria typhae* Thunberg on the 19th and seven *Apamea ophiogramma* Esper between the 4th and 15th. The only previous Estate record of *C. maritimus* was one caught in a Rothamsted light trap on 24.vi.1935. That specimen is in the Rothamsted Insect Survey collection.

As reported for July (Riley & Townsend, in press), the nearest wetland habitat to the Estate is in the Lea Valley, 2.5km to the north-east. However, the August captures occurred on nights when there were light or moderate southerly to westerly winds. This was also the case when wetland species were caught in the trap network in July 1990 and 1991 (Riley, A.M. & Townsend, M.C. (1991) *Entomologist's Rec. J. Var.* **103**: 103-104, and *loc. cit*). However, *C. paludella, A. ophiogramma* and *Enargia ypsillon* Denis and Schiffermüller were also caught on 29.vii.1991, when the wind was north-easterly and this suggests there is more than one origin for wetland species occurring on the Estate. The only other known Hertfordshire locality for *C. maritimus,* Tring Marshes, is 24km west of Rothamsted, where it was stated to be "quite common" (Foster, A.H. (1942) Hertfordshire Lepidoptera: New species and further addenda to the list. *Trans. Hertfordshire Nat. Hist. Society* **21**: 308-310). If this colony still exists it could be a possible source for our specimens. There are no known colonies in neighbouring Bedfordshire (V. Arnold, pers. comm.).

Apamea ophiogramma is known to occur in gardens where the larvae feed on cultivated varieties of reed canary-grass (Skinner, B. (1984) *Colour*

Identification Guide to Moths of the British Isles. Viking, Harmondsworth). Therefore, individuals of this species caught on the Estate may have originated in adjoining Harpenden gardens.

Four *Idaea vulpinaria* (Herrich-Schäffer) were caught, the last on the 5th. This species occurred in very large numbers in its London strongholds in 1991 (Knill-Jones, S.A. (1992) *Entomologist's Rec. J. Var.* **104**: 49 and B. Skinner, pers. comm.). These records further suggest an increase in the local population (Riley & Townsend, *loc. cit.*). *Idaea vulpinaria* was recorded in 1991 for the first time in Warwickshire (Brown, D.C.G. (1992). *Ibid.* **104**: 49), Hampshire and the Isle of Wight (Knill-Jones *loc. cit.*) and may be a new colonist on the Estate.

A single *Drepana cultraria* Fabricius was caught on the 13th. This species has only been recorded at Rothamsted during the two years in which the present trap network has operated. Further, these captures occurred in parts of the Estate not previously sampled continuously. This suggests that *D. cultraria* has been present, but overlooked and is a very sedentary species.

Two migratory species were recorded. *Autographa gamma* Linnaeus was caught in small numbers throughout the month with a slight increase during the latter half and a maximum of ten on the 27th. One *Rhodometra sacraria* Linnaeus was caught on the 28th. There are only ten previous records of this species on the Estate.

Thanks are due to J. Croft for allowing access to the Rothamsted meteorological database and to C. Plant, V. Arnold and B. Skinner for useful correspondence. This work is partly funded as a Joint Research Agriculture and Environment Programme (JAEP).— MARTIN C. TOWNSEND and ADRIAN M. RILEY, Farmland Ecology Group, Dept. Entomology & Nematology, AFRC Institute of Arable Crops Research, Rothamsted Experimental Station, Harpenden, Herts AL5 2JQ.

Chondrostega vandalicia (Milliere, 1865). (Lep.: Lasiocampidae) an unusual central Spanish species

This endemic Spanish lasiocampid first came to my attention in early April 1990, when I found a total of six almost fully-grown larvae in Valdemoro, just south of Madrid.

The species is of great interest, firstly because of its restrictred distribution, being found in the central Spanish provinces as far north as La Granja de San Ildefonso in Segovia. Secondly, despite the larvae being quite showy, something resembling a South Amercan *Automeris* species, the imagines are nondescript with the females being apterous.

According to the texts the larvae feed on various grasses including *Nardus & Hypochaeris* species. I found my initial batch of larvae nibbling at *Sedum album* so they were reared on this in my flat in Madrid.

Subsequent finds in Valdemoro and Valdemorillo (Madrid) one larva was seen to eat *Anthemis arvensis*.

As regards the moth's life cycle, most of the year is spent in the larval stage, from October through until May. The larva cannot be said to hibernate as such, because it is active on sunny days in the Castillian winter and is able to withstand the extremely low temperatures. Gómez de Aizpúrua states having seen larvae quite exposed but immobile covered in frost on the branches of *Cytisus*.

The larvae are quite easy to detect as they crawl across the ground nibbling at appropriate plants and roll up when touched.

Rearing in captivity could present problems as they would have to be kept completely dry. I kept mine without too much problem on growing *Sedum* plants in a sandy medium in full sunlight. The larvae pupate just below the surface of the ground spinning a strong cocoon.

The imagines emerge in high summer, from July until September, the males seeking out the wingless females from amongst low plants, the females ovipositing therein. Other species in the same genus are *Chondrostega tingitana* (Powell, 1916) which is distributed throughout Morocco from sea level until 1,650m and *C. constantina* (Aurivillius, 1894). Found throughout the Magreb.— G.E. KING, 3 Colless Road, South Tottenham, London N15 4NR.

***Tethea or or* Denis & Schiffermüller (Lep.: Thyatiridae) and *Bena prasinana* L. (Noctuidae) in Cardiganshire, Wales 1991**

In June 1954 the first county record of *Tethea or or* was of a specimen that came to a light trap at Trawscoed near Aberystwyth (Miles, 1956, *Ent. mon. Mag.* **92**: 289-295). It was 37 years later that it appeared again on 31st August 1991 in the light trap in the garden at Werndêg, Cnwch Coch, near Aberystwyth, two miles from the previous example. Temperatures had been in the upper seventies for the previous five days and may have resulted in the moth having flown some distance from its original habitat. The species is very rare in this county and its foodplants are decidedly scarce. A.D. Fowles in Research and Conservation Series No. 8 (Nature Conservancy Council, 1988, p.24) refers to a report of it from Llanbadarn Fawr, Aberystwyth. Further inquiry on my part concerning this report confirms that it is not supported by any existing specimen and must remain in doubt.

Bena prasinana is a thermophilic, single-brooded species associated with oak woodlands and is rare in Cardiganshire, with only nine recorded occurrences to date, my own being the tenth. In 1954 this species was recorded from New Quay; in the same year examples came from Trawscoed in June and July at light (Miles, *loc. cit.*).

At that time this was the most northerly record until the present one when a freshly-emerged specimen came to the light trap in my garden on 13th July 1991 at Cnwch Coch near Aberystwyth. It was eleven years after

the 1954 records that it was again reported, at Aberaeron on 31st July 1965 and later another at Llechryd. Sixteen years elapsed before it reappeared, this time at Ty Coed, Tregaron and again in 1984. In 1985 one was reported further south at RAE Aberporth. The increased frequency of the appearance of *Bena prasinana* suggests warmer climatic periods have proved favourable to its survival but it is unlikely to occur frequently in the north of this county.— PHILIP M. MILES, Werndêg , Cnwch Coch, Aberystwyth, Dyfed, Wales.

Voltinism in *Cyclophora pendularia* (Lep.: Geometridae) in Dorset

On the morning of 27th May 1991 I found a female *Cyclophora pendularia* in my m.v. trap. She laid 52 eggs in total over three days on a sprig of willow in a breeding cage, dying on 30th May. Thirty-one of the eggs were laid on the highest leaf, mostly singly, but with occasional clumps of up to six. One of the clumped eggs failed to hatch, I think because there was no easy egress.

The first hatched on 4th June, and all except the one above by 8th June. Pupation commenced on 25th June, attached to leaves or twigs, and the last two pupated on 2nd July, giving 45 pupae in total. I had given four away, and two larvae had died, one in the first instar, and one full grown.

By 6th July some pupae were starting to darken on the wing areas, and would have been expected to hatch in three days or so. Holidays intervened, so I put them in a cage in the cellar with fresh *Salix*. On our return on 18th July all had hatched and many had died, leaving approximately 1000 eggs on the willow. The remaining adults were released.

The first larva hatched on 21st July.; I released many of the F2 generation, and ended up with 26 pupae. Fourteen hatched during September, and 12 will I presume hibernate as pupae. Unfortunately I did not try to breed from the F2 adults through the autumn.— JAMES FRADGLEY, The White House, Merley Park Road, Wimborne, Dorset BH21 3DB.

***Phlyctaenia perlucidalis* (Hübner) (Lep.: Pyraustinae) in England**

In reply to Mr G.E. Higgs' queries (*antea* **104**: 60), his records of this species from Buckinghamshire and Northamptonshire both constitute new county records. He also asks if the moth is increasing its range: it is. My map, which is not necessarily complete, now shows records from v.c.s 8, 11, 12, 15, 16, 18, 19, 20, 22, 24, 25, 26, 27, 28, 29, 30, 31, 32, 38, 53, 54, 55, 56, 61 and 63. I would be grateful for any additions.—A.M. EMMET, Labrey Cottage, Victoria Gardens, Saffron Walden, Essex CB11 3AF.

Notes on Greenwich Park, S.E. London

It was a pleasure to read A.A. Allen's article on Butterflies in the Woolwich (S.E. London) district, 1991 (*Ent. Rec.* **104**: 47-49) and it is encouraging to

hear that so many species are holding their own, or even doing better. Mr Allen mentions my 1990 observations on the Holly Blue, *Celestrina argiolus,* in Greenwich and I am happy to say that it was still flying in Greenwich Park and adjacent streets in 1991. I saw my first in the park on 21st July and a further example in Gloucester Circus on 8th August.

Working as I do at the National Maritime Museum I see only the northern part of the park which has a relatively impoverished and urban environment, nevertheless each year produces its pleasures and surprises. I cannot claim a butterfly list as long as that for Woolwich, but there were Small Tortoiseshells, *Aglais urticae,* in the park on 2nd September and at Maze Hill station on the 14th of the same month after a scarcity in the south-east which has been widely reported in recent years. Red Admirals, *Vanessa atalanta,* were also at Maze Hill on the same day.

Best of all was the "discovery" of a tiny linear meadow alongside the up platform at Greenwich Station. This small area of rough grass and bushes, almost entirely surrounded by houses and industrial estates, has a flourishing colony of Meadow Browns, *Maniola jurtina,* and skippers. There were also some Small Whites, *Pieris rapi,* here and among the other visible insects, the Common Carder bee, *Bombus pascuorum,* and the hover fly *Episyrphus balteatus* which was abundant everywhere in 1991.

In Greenwich Park and elsewhere locally the Firethorn Leafminer moth, *Phyllonorycter leucographella*, is now well-established on *Pyracantha* and in the grounds of the Museum we had a massive upsurge in numbers of the crane fly *Tipula paludosa* this autumn, the last clinging weakly to a wall on 26th October. Later still I discovered the distinctive metallic red and blue soldier fly *Sargus bipunctatus* on the same wall on 28th November and a male Winter Moth, *Operophtera brumata,* just inside the back door of the Museum on 19th December. The *Sargus* is associated with fresh cow-dung, a substance that has not been seen in Greenwich Park for some time, but the insect may have been brought in with manure for the flower beds or possibly been attracted to the bracket fungi that are growing on the stumps of wind-thrown trees in the neighbourhood.

As well as outdoors, insects occasionally turn up in my office, though it is poorly sited from this point of view and does not make a very efficient Malaise trap. In 1991 the February appearance of several *Anoplius nigerrimus,* a black spider-hunting wasp, was a mystery and I suspect they were imported in potted plants, possibly having used the hole in the base of the pot as a nesting site. One or two so far undetermined Chironomid and Sciarid flies were wafted in during the summer (the former presumably from the Thames, the latter probably from the dustbins) and once the little biting midge *Forcipomyia bipunctata.* The most interesting invader was a female Psocid, *Ectopsocus petersi,* only separated from the common *E. briggsi in* 1978. It was kindly determined for me by the Natural History Museum.— PATRICK ROPER, South View, Sedlescombe, Battle, East Sussex TN33 0PE.

Lepidopterist's Society of South Aftica

The society aims to promote the scientific study and conservation of Lepidoptera in Southern Africa, and promote the publication of original scientific papers as well as articles of a less technical nature in the journal *Metamorphosis* (ISSN 1018-6409). The journal is published quarterly.

Currently the Society has 270 members. There are three categories of membership — Full (subscription US$40/£20 p.a.); Junior or Pensioner (US$20/£10) and Affiliate for societies, museums etc (US$40/£20).

Further details from the Hon. Secretary, P.O. Box 470, Florida Hills, 1716 Transvaal, South Africa.

BOOK REVIEW

Trap responses of flying insects by **R.C. Muirhead-Thomson.** 287pp, numerous figs. Academic Press, 1991. £28.00.

The use of capture, trapping and other sampling methods plays an essential part in all studies on the ecology and behaviour of insects in the field. According to the different insects involved, and to the nature of the investigation, these capture and sampling methods have evolved along many different lines and proliferated into a multitude of designs. Some of the trap designs, such as the light traps used for moths and those used for mosquitoes, have undergone comparatively little alteration over the years, but in general the design and operation of most trapping systems are constantly being revised, improved and modified in the light of experience.

This book attempts to review the vast and ingenious range of trapping methods used predominately in agricultural, medical and veterinary entomology. The nine main chapters cover light traps, suction traps, pheromone-based and sex-lure traps, light traps versus pheromone traps, flight traps and interceptor traps, plant pest responses to visual and olfactory "sticky" traps, responses of blood-sucking flies to visual traps, animal-baited traps and animal odours and attraction of blowflies and their allies to carrion-based traps. The work concludes with a bibliography and index.

Any entomologist used to working with one or two trapping methods is likely to be surprised by the range of strategies and hardware employed in the trapping of insects, and the insights they provide to the diverse biology of flying insects. The material in the book is well presented and remarkably readable given the range covered. Inevitably some of the material is synoptic and sometimes key works are omitted — for example that of Robinson on the mercury vapour trap. Misprints are largely confined to scientific names (e.g. *colmella* as often as *culmella*) and the odd taxonomic slip (*Helialus lupulinus* as a noctuid). Overall, a unique work, packed with information and ideas, and reasonably priced. P.A.S.

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THE ENTOMOLOGIST'S RECORD

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

Contents

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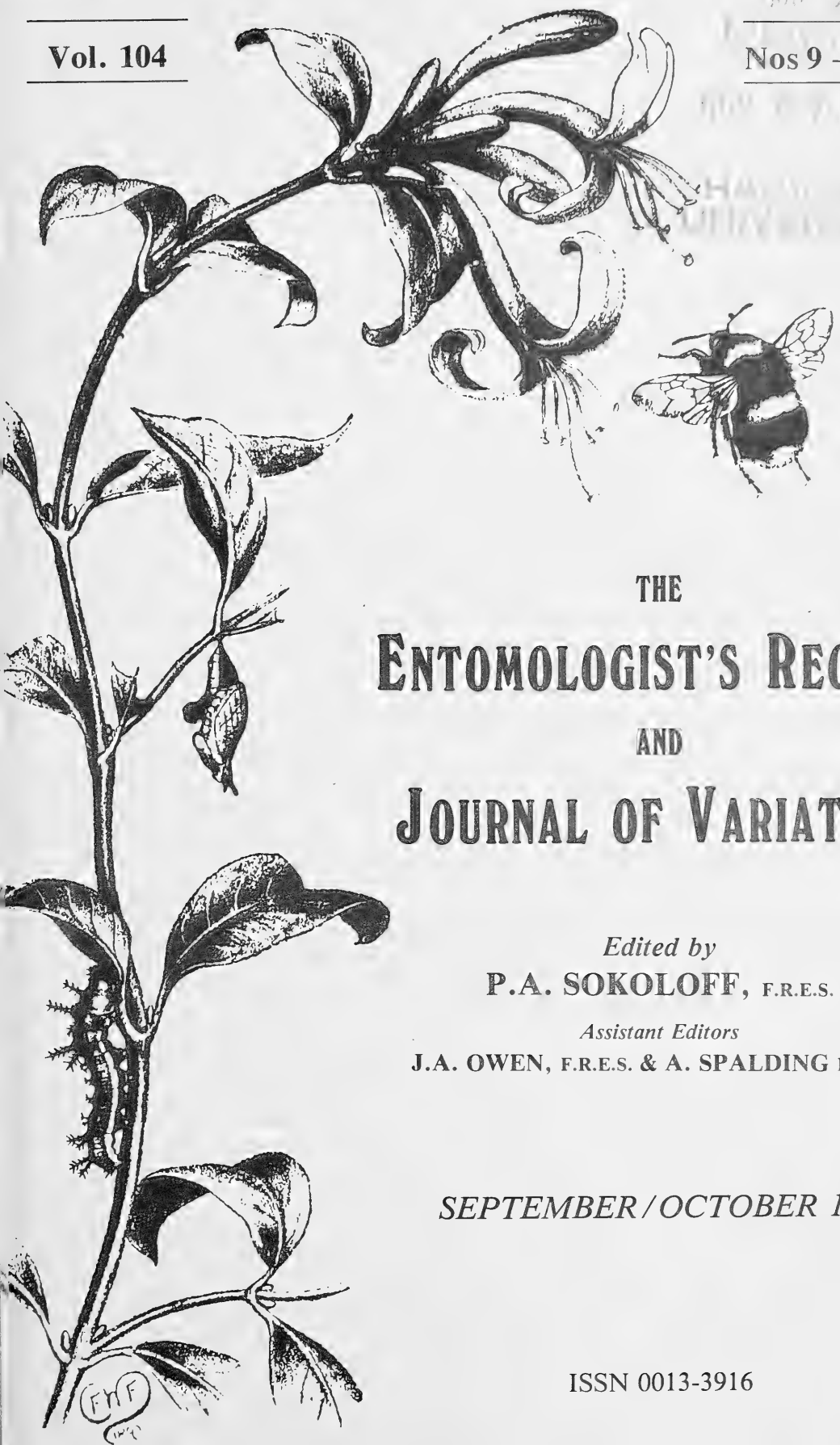

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at its base so that it is clearly widest in front of the base. There is a continuous row of punctures along its anterior border. The elytra have two very irregular longitudinal rows of large punctures easily seen with a hand-lens. Under the microscope, the surface of the head, pronotum and elytra is seen to be covered with an obvious, irregular network of fine, polyhedral meshes. On the elytra, and to a lesser degree on the head and pronotum, there is within the major meshes an even finer, more regular secondary network of meshes (fig. 1) and many fine punctures, often situated at points where the major meshes intersect. The elytral sculpture is similar to that in *A. sturmi.* In good light, the primary network and the fine punctures on the elytra can be made out with a strong hand-lens.

In the few specimens we have been able to examine we have found little external difference between the sexes. The secondary sculpture on the elytra appears to be a little less distinct in males but the front tarsi lack distinguishing features. In both sexes, the undersides of the first three joints bear translucent golden hairs and the front tarsal claws are simple and of equal length.

The size, the shape of the pronotum with its continuous row of punctures along the anterior border and the surface sculpture of the elytra serve to distinguish *A. wasastjernae* from the other known British members of the genus. The key (in English) given by Zaitsev (1953) or that by Schaeflein (1971) provides a straightforward formal identification. The male genitalia are figured by Dettner (1974) and by Galewski and Tranda (1978).

As far as British keys to the genus *Agabus* go, that of Joy (1932), takes *A. wasastjernae* as far as couplet 38 (37). To deal with the species, this couplet requires to be modified as follows:

> 38 (39) Elytral reticulation well marked, consisting of a primary polyhedral network, each cell enclosing a finer secondary polyhedral mesh. L. 7.0 - 7.5mm; *wasastjernae* Sahlberg.
>
> 39 (42) and the remaining couplets — as given by Joy.

In the *Agabus* key given by Balfour-Browne (1953), *wasastjernae* runs to couplet 3 but the shape of the prosternal process and the elytral sculpture rule out *melanarius* Aubé and the continuous row of punctures along the anterior border of the pronotum and the elytral sculpture rule out *guttatus* and *biguttatus* (Olivier). An additional couplet testing for the absence of a gap in the row of punctures along the front margin of the pronotum would deal with *wasastjernae.*

In the key for *Agabus* and *Ilybius* devised by Friday (1988), *wasastjernae* runs down to couplet 20 (19) — *chalconatus* and *melanocornis* but fits neither of these because none of the terminal antennal joints are infuscated. An additional couplet testing for the total absence of infuscation in these joints would cope with *wasastjernae.*

In the field, the species most closely resembling *wasastjernae,* superficially at least, are *affinis* and *guttatus*. The unicolorous red antennae in *wasastjernae* distinguishes it from *affinis* in which the infuscation of the last antennal joints is visible with a lens whilst *guttatus* nearly always has characteristic yellow marks on the elytra and lacks the contraction at the base of the pronotum.

Sub-fossil history in Britain

While these specimens of *A. wasastjernae* are the first to be recorded from Scotland and the first to be recorded in Britain for historic times, examination of sub-fossil deposits have shown that the species lived in Britain in the past. Coope (1959) examining Pleistocene deposits from Chelford, Cheshire, found fragments of a number of specimens of *A. wasastjernae* along with fragments of ten other water beetles of the

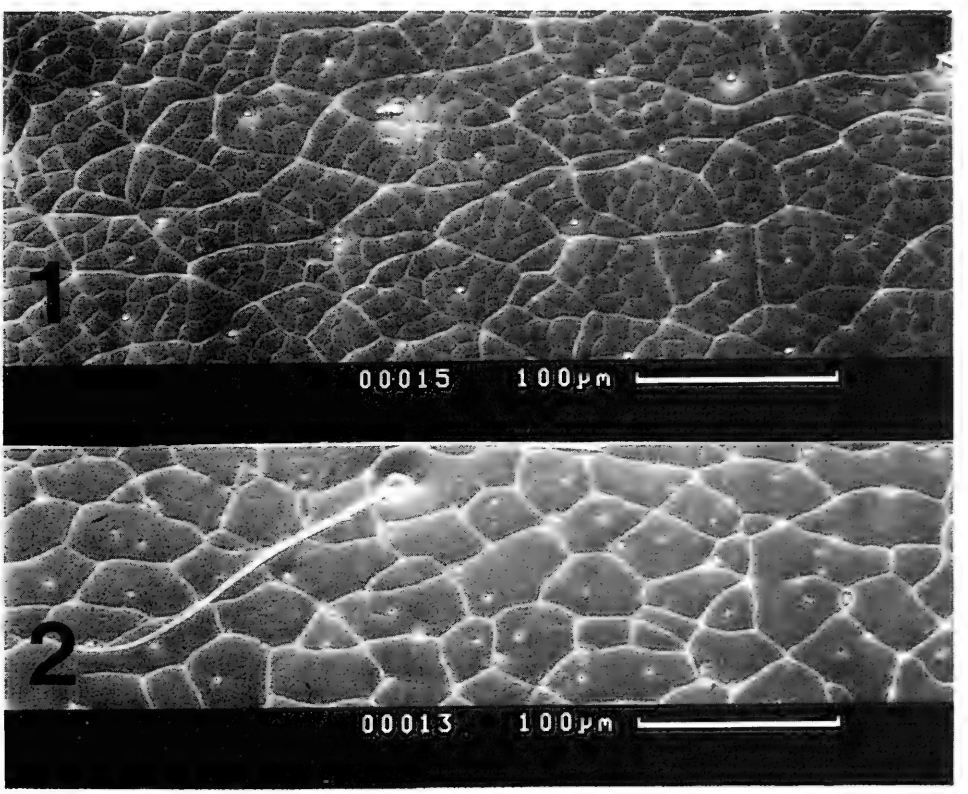

Fig. 1. *Agabus wasastjernae* Sahlberg.

Fig. 2. *Agabus melanocornis* Zimmermann.

Surface sculpture of elytra shown by scanning electron micrography. In the case of *A. wasastjernae,* the photography shows primary and secondary polyhedral networks; in the case of *A. melanocornis,* shown for comparison, there is no secondary network.

family Dytiscidae, of which eight are among those listed above which we found in searching for specimens of the *Agabus* in Abernethy. These deposits were dated by ^{14}C measurements to 60 800 ± 1500 years B.P. Osborne (1972) likewise recorded fragments of *A. wasastjernae* in a deposit of Flandrian (post-glacial) age from Church Stretton, Shropshire. The latter deposit was not dated by ^{14}C measurements but a somewhat older, closely related deposit gave a ^{14}C date of 8101 ± 138 years B.P. Since most of Britain has been free from glaciation since that time there is every reason to suppose that *A. wasastjernae* has had a continuous presence in Britain in the past for at least 8000 years, becoming a northern species as its required habitat became extinguished in the south. Examination of sub-fossil deposits has demonstrated the presence in Britain in the past of many beetle species which are present in Britain today but this is apparently the first instance in which a beetle was known from such deposits in Britain some years before it was discovered in Britain alive.

Distribution and habitat

Outside Britain, the species today has a boreal Holarctic distribution (Larson & Nilsson, 1985). It was originally described by Sahlberg (1924) from Finland. Its present Palaearctic headquarters lie in northern Scandinavia, Finland and the north-western parts of what was formerly the USSR (Horton, 1941; Zaitsev, 1953, Silfverberg, 1979) but there are a handful of modern records for Germany (e.g. Dettner, 1977, Burmeister, 1980, Carr, 1985; Balke & Hendrich, 1987), Poland (Galewski, 1971, Kordylas, 1990), Denmark and southern Sweden (Lucht, 1987). The Nearctic record is for Newfoundland (Bistrom, 1978). The continental European records and possibly also the Canadian records are considered to reflect the presence of ice-age relict populations (Dettner, 1977; Bistron, 1978; Burmeister, 1980). It seems likely that our Scottish findings similarly reflect a relict population.

As far as habitat goes, the beetle has been recorded mainly from cold, marshy spruce or pine forests (taiga), where it occurs in small, mossy, moorland pools particularly those among roots of trees (Zaitsev, 1953; Dettner, 1977; Burmeister, 1980). In dry seasons, it has been found in litter under fallen leaves in dwarf birch forest (Galewski, 1971). The habitat of the relevant Abernethy area is in keeping with these findings. Somewhat differently, in Poland, the beetle occurs on the coast (Galewski, 1971) and has been reported from open water among aquatic vegetation in association with *Platambus maculatus* (L.) and *Gyrinus aeratus* Stephens (Kordylas, 1990).

The beetle overwinters as eggs and as adults (Larson & Nilsson, 1985). A description of the larva has been provided by Nilsson (1982).

Acknowledgements

We thank Mr Peter Hammond, British Museum (NH) London for providing facilities for comparing the original specimen with Museum material. Mr Magnus Sinclair very kindly gave us copies of the relevant parts of the works by Galewski (1971) and Zaitsev (1953) and Dr Peter Osborne very kindly provided information on the presence of *A. wasastjernae* in sub-fossil deposits. We thank also Mr & Mrs M.J. Lyszkowski for their trouble in providing a translation of part of the paper by Galewski (1971). The scanning electron micrograph was produced in the Department of Natural History at the Royal Scottish Museums by Mr Paul Wilthew and Dr Graham Rotheray to whom we are most grateful.

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***Uleiota planata* (L.) (Col.: Cucujidae) recaptured near Blackheath, S.E. London after more than a century.**

This interesting Cucujid, notable for its antennae as long as the body, its boldly spined pronotum and its very flattened form admirably suited to a subcortical life, was one of our great rarities until about ten years ago when it began to be found more widely. It is now known from scattered localities from East Kent to Lancashire including a few still, I believe, unpublished. There appears to be at least one Scottish record.

I had previously met with this insect only in France and Canada (singly) so was much gratified to secure a specimen as it ran on a fallen beech trunk that I had just been working at Castlewood, Shooters Hill, near here — in the western part of Oxleas Wood SSSI — on Easter Monday, 20th April 1992. Further visits have not, so far, yielded any more; but a great deal of bark remains, most of it firmly adherent.

As far as I know, *Uleiota* has only once before been recorded in the south-east suburbs of London, namely Blackheath (captor J.W. Douglas) in Fowler, 1889, *Col. Brit. Isl.* **3**: 301 (as *Brontes planatus* L.). The date is not given, but would doubtless have been somewhere about the mid-century, and probably not long before its discovery by E.C. Rye near Putney, S.W. London, where it occurred on a large standing dead beech (1867, *Ent. mon. Mag.* **4**: 164). From Fowler's data one would assume the first find in Britain to have been Rye's, and it is only from the latter's account that we learn that it was in fact Douglas's; but Rye mentions "the suspicion of doubt as to their British origin".

It is tempting to speculate that the beetle may have been continuously present in the Shooters Hill woods, where it could easily have been missed for long periods because trees, especially beeches, in the requisite condition are seldom encountered. Blackheath is only a few miles to the west.

There is an interesting note by P.F. Whitehead and C.F. Felton (1991, *Ent. mon. Mag.* **127**: 17-18) on recent occurrence and ecology of *U. planata* in Gloucestershire, where it shows a strong preference for sweet chestnut; this however is not apparent throughout its British range, where beech is more often the favoured tree.— A.A. ALLEN, 49 Montcalm Road, Charlton, London SE7 8QG.

THE IMMIGRATION OF LEPIDOPTERA TO THE BRITISH ISLES IN 1990

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[2] *5 Rawlins Close, Addington, South Croydon, Surrey CR2 8JS.*

(Concluded from p.218)

M. vitellina Hbn. (155). CORNWALL W. Cusgarne, 30.5, 16.10, 19.10, 21.10 (A. Spalding); Gillan Creek near Falmouth, 28.9 (2), 1.10 (2) (C. Hart); Coverack, 1.10 (4) (Dr J. Clarke); Perranporth, 1.10 (Dr F.H.N. Smith): St Mary's, Scilly Is, 7.10, 11.10, 17.10 (2) (P. Hopkins); Land's End, 16.10, 17.10 (3), 18.10 (11), 19.10 (S. Colenutt *et al.*). DEVON S. Branscombe, 1.10 (P.J. Baker). DORSET Portland, 15.10, 17.10 (3) (M. Halsey); 3.9, 5.9 (2), 15.9, 1.10 (2), 2.10 (2), 12.10, 13.10 (2), 19.10 (Anon, *Portland Observatory Report, 1990,* p.35); 17.10 (R. Darlow); Herston, Swanage, 13 - 18.10 (6). (D. Howton & J. Ward); Swanage, 16.10 (2) (M. Halsey); 16.10, 17.10 (2), 18.10 (2) (P.Q. Winter); 1.10 (2), 11.10, 12.10, 17.10 (5), 18.10 (5), 24.10 (D.C.G. Brown); Studland, 11.10 (P.H. Sterling per D.H. Sterling); 29.9, 30.9, 2.10, 10.10 (3), 12.10 (3), 14.10, 16.10, 17.10 (5), 18.10 (4), 19.10, 20.10, 23.10 (3) (D.C.G. Brown); Durlston, 25.8, 2.10 (2), 9.10, 11.10, 12.10, 13.10, 19.10, 20.10 (2) (R.J.H. Murray); 8.10 (G.E. Higgs); 12.10 (B.R. Baker); 19.10 (2), 23.10 (2) (Dr J. Clarke); 16.10 (D. Howton). ESSEX S. Bradwell-on-Sea, 18.10 (2), 24.10 (A.J. Dewick). HANTS S. Chilling, Warsash, 17.10 (P.M. Potts). KENT E. Dymchurch, 30.9, 2.11 (J. Owen); Greatstone, 2.9, 17.10 (S.P. Clancy); 24.10 (2) (B. Banson per S.P. Clancy); Dungeness, 11.10, 18.10 (D. Walker per S.P. Clancy; 17.10 (A.P. Russell). SUSSEX W. Littlehampton, 16.10 (M. Parsons & A. Foster); Walberton, 17.10 (J. Radford per C. Pratt); Rogate, 28.10 (J.A.C. Greenwood); Fernhurst, 19.10 (S. Church per G.A. Collins), HANTS ISLE OF WIGHT Chale Green, 1.10, 9.11 (S. Colenutt per S. Knill-Jones); Freshwater, 2.10, 22.10; Totland, 26.6, 6.10, 22.10 (S. Knill-Jones). WILTS S. Dinton, 11.10 (S. Palmer). GUERNSEY Mid-June (D. Agassiz & Dr Langmaid); L'Ancresse, 11.9 (3) (G. & F. Higgs); Le Chêne, 12.9, 3.10 (2), 11.10, 14.10 (Dr T.N.D. Peet). All the foregoing Guernsey records per Austin, *Moths and butterflies of Guernsey, 1990,* p.22).

****M. l-album*** L. KENT E. Dungeness, 17.10 (A.P. Russell).

****M. unipuncta*** Haw. (816). BERKS Fernham, 20.10 (S. Nash). CORNWALL W. Cusgarne, 20.10, 22.10 (3), 24.10, 8.11, 10.11, 11.11, 14.11 (2), 18.11, 24.11; Porthgwarra, 16.10 (2), 17.10, 18.10 (2), 19.10 (3); Cot Valley near Land's End, 20.10 (A. Spalding); Kennack Sands, 15.8, 16.8, 19.8, 22.8 (2), 23.8 (2) (R.J. Heckford); 14.9 (R. Darlow); Pra Sands near Helston, 15.9 (R. Darlow); Gillan Creek near Falmouth, 28.9 (2), 1.10 (2), 4.10 (C. Hart); Coverack, 30.9 (2), 1.10 (2), 2.10 (Dr J. Clarke); Perranporth, 24.10 (Dr F.H.N. Smith); Land's End, 7.10 (11), 8.10 (3),

9.10 (7),10.10 (5), 11.10 (15), 12.10 (10), 14.10 (5), 16.10 (33), 17.10 (18), 18.10 (77), 19.10 (20), 20.10 (2), 22.10 (12) (S. Colenutt *et al.*); Penzance, first seen 24.4; last seen 23.10 (2); monthly totals: April (1), August (26), September (15), October (22) (M.P. Semmens); St Mary's, Scilly Is, 6.10 (3), 7.10 (13), 8.10 (7), 9.10 (13), 10.10 (4), 11.10 (6), 12.10 (14), 14.10 (13), 15.10 (5), 16.10 (6), 17.10 (28), 18.10 (39) (P. Hopkins). DORSET Durlston, 2.4, 22.8, 23.8, 24.8, 25.8 (2) 26.8 (3), 29.9, 30.9, 5.10, 6.10, 11.10, 12.10 (3), 13.10 (4), 14.10 (6), 15.10, 19.10 (8), 20.10 (5), 24.10 (2), 10.11 (2), 11.11 (12), 12.11 (2), 13.11 (R.J.H. Murray); 8.10, 11.10 (2) G.E. Higgs); 19.10 (2), 20.10 (2) (Dr J. Clarke); 12.10 (2), 13.10 (2) (B.R. Baker); 16.10 (2) (D. Howton & J. Ward); 13.10 (3), 9.11 (7), 12.11 (4) (P. Davey); Portland, 2.10 (B. Skinner)); 23.8, 29.9, 11.10 (4), 26.10 (R. Darlow); 10.6, 4.8, 14.10 (2), 15.10 (4), 17.10 (4) (M. Halsey); 28.3, 29.3, 10.4, 22.5, 19.6, 19.7, 21.8 - 26.8 (7), 3.9 - 2.10 (12), 9.10 - 20.10 (23) (Anon, *Portland Observatory Report, 1990,* p. 35); Swanage, 6.10 (3), (M. Halsey); 18.10, 19.10 (P.Q. Winter); 28.9, 11.10 (3), 13.10 (6), 16.10 (7), 17.10 (12), 18.10 (8), 20.10, 23.10, 24.10 (D.C.G. Brown); Herston, Swanage, 13 - 18.10 (24) (D. Howton & J. Ward); Studland, 11.10, 16.10, 17.10 (3), 18.10 (5), 19.10 (3), 20.10 (2), 23.10, 24.10 (D.C.G. Brown); Abbotsbury, 15.10 (D.C.G. Brown); Wimborne, 20.10, 10.11 (2) (J. Fradgley); Weymouth, 19.10, 24.10, 12.11, 13.11 (2), 16.11 (5), 18.11, 19.11, 30.11 (N. Arnold). ESSEX S. Bradwell-on-Sea, 18.10, 20.10 (2) (A.J. Dewick). HANTS S. Highcliffe, 15.11 (E.H. Wild); Sandy Point, Hayling Is, 20.10 (P.M. Potts & Dr J. Langmaid); Titchfield, 12.11; Chilling Warsash, 12.11 (P.M. Potts). HANTS ISLE OF WIGHT Freshwater, 11.10, 12.10, 15.10 (Knill-Jones, *Br. J. ent. nat. Hist. Soc.* **4**: 24). KENT E. Dungeness, 29.9, 2.10, 18.10 (S.P. Clancy); 18.10 (2), 11.11, 12.11, 13.11 (D. Walker per S.P. Clancy). Greatstone, 2.9, 10.10, 17.10, 12.11, 15.11 (B. Banson per S.P. Clancy); Dymchurch, 2.11, 2.12 (J. Owen). ISLE OF MAN Castletown, 18.10, 19.10 (G.Crane). SUSSEX E. Hassocks, 13.11 (D. Dey). Bexhill, 16.10 (M. Halsey); Holywell, Eastbourne, 12.10 (M. Parsons, C. Pratt & G. Botwright). Peacehaven, 26.8, 30.9, 18.10 (2), 19.10 (2), 21.10, 6.11, 12.11 (3) (C. Pratt). Eastbourne, 12.10 (M. Parsons); 19.10 (C. Pratt & G. Botwright). Newhaven, 19.10 (G. Botwright). SUSSEX W. Atherington, 16.10 (M. Parsons & A. Foster). Climping, 16.10 (R. Chatelain). Pagham, 13.10, 20.10 (3), 24.10 (D.C.G. Brown per G.A. Collins). Littlehampton, 15.7 (Mrs R. Pratt); 17.10 (C. Pratt). Walberton, 27.8, 12.10, 18.10, 20.10 (2), 25.10, 29.10, 8.11, 10.11, 14.11, 16.11, 17.11, 19.11 (J. Radford per C. Pratt).

M. loreyi Dup. (23 plus one larva). BERKS Fernham, 20.10 (S. Nash). CORNWALL W. Lizard, 30.9 (2) (Dr J. Clarke); Land's End, 18.10 (3), 22.10 (2) (S. Colenutt *et al.*); Cusgarne, 22.10 (A. Spalding); St Mary's, Scilly Is, 11.10 (P. Hopkins). DORSET Herston, Swanage, 18.10 (D. Howton & J. Ward); Swanage, 11.10 (2) (D.C.G. Brown); Portland, 2.10,

3.10, 18.10 (*Portland Observatory Report, 1990,* p.35). HANTS ISLE OF WIGHT Niton, 16.5, 10.11 (Mrs A. Wilkinson per S.A. Knill-Jones); Freshwater, 9.3 (Knill-Jones, *Ent. Rec.* **102**: 191). SUSSEX E. Eastbourne, 17.6 (D.J. Wedd). SUSSEX W. Walberton, 22.10, 11.11 (J. Radford per C. Pratt); Frinton near Worthing, one bred from "a wild larva which was among a number of other wainscots, mostly *pallens,* collected in April with the aid of a torch when . . . casually examining grasses" (Cordell, *Bull. amat. ent. Soc.,* **50**: 175; B. Baker *in litt.*). CORK W. Cape Clear, October (D. Coleman per G.A. Collins *in litt.*).

Trigonophora flammea Esp. (12). DORSET Swanage, 17.10 (2) (D.C.G. Brown). Ringstead Bay, 18.10 (2) (R. Darlow). Durleston, 20.10, female laid fertile ova at 4am. (Dr J. Clarke). HANTS ISLE OF WIGHT Freshwater, 18.10 (2), 20.10 (S. Knill-Jones). SUSSEX W. Pagham, 13.10 (B. Skinner). Littlehampton Dunes, 16.10, two, including one at ivy blossom (M. Parsons & A. Foster). Littlehampton,17.10 (C. Pratt).

Xylena vetusta Hbn. ESSEX S. Bradwell-on-Sea, 29.12 (Dewick, *Ent. Rec.* **103**: 270).

Cryphia algae F. GUERNSEY Le Chêne, 24.8 (Dr T.N.D. Peet per Austin in *Moths and butterflies of Guernsey, 1990,* p.24).

C. raptricula D. & S. KENT E. Dungeness, 30.7 (D. Walker per Clancy, *Ent. Rec.* **103**: 52; Clancy, *Br. J. ent. nat. Hist. Soc.* **4**: 23).

Polyphaenis sericata Esp. GUERNSEY "Singles recorded in mid June at Moulin Huet and Saints" (D. Agassiz & J. Langmaid in Austin *Moths and butterflies of Guernsey, 1990,* p. 24); also, specimens taken at Le Chêne (Peet, *Ent. Rec.* **102**: 302).

Enargia paleacea Esp. KENT W. Dartford, 29.7 (West, *Ent. Rec.* **103**: 16).

****Photedes fluxa*** Hbn. KENT E. Dungeness, 31.7 (Clancy, *Ent. Rec.* **103**: 52).

Spodoptera exigua Hbn. (18). BERKS Fernham, 14.8 (S. Nash). CORNWALL W. Gillan Creek, near Falmouth, 29.9 (C. Hart); Perranporth, 1.10 (Dr F.H.N Smith); Cusgarne, 10.10, 18.10 (A. Spalding); Penzance, 17.10 (M.P. Semmens); Land's End, 17.10 (2) (S. Colenutt *et al.*). DEVON S. Woodbury, 30.9 (3) (V.W. Philpott per Riley, *Ent. Rec.* **103**: 100). DORSET Durlston, 22.8, 4.9 (R.J.H. Murray). KENT E. Greatstone, 12.4, 19.8 (B. Banson per S.P. Clancy). SUSSEX E. Peacehaven, 1.4 (one, small, pale and stone dead) (C. Pratt). SUSSEX W. Pagham, 20.10 (G.A. Collins). WILTS S. Dinton, 17.10 (S. Palmer).

S. littoralis Boisd. NORFOLK E. Winterton, 25.10 (D. Hipperson). OXFORDSHIRE Locality omitted, 9.7, "reared from a larva found on leaves of *Hypoestes*" (Simson, *Br. J. ent. nat. Hist. Soc.* **4**: 26).

S. cilium Guen. CORNWALL W. Coverack, 29.9 (Clarke, *Ent. Rec.* **103**: 69-70, idem, *Br. J. ent. nat. Hist. Soc.* **4**: 23). New to Britain. DORSET Portland, 2.10 (M. Rogers per B. Skinner); specimen in Portland Bird Observatory collection.

Heliothis armigera Hbn. (48). CORNWALL E. Bude, 29.9 (Wedd, *Br. J. ent. nat. Hist. Soc.* **4**: 26). CORNWALL W. Lizard, 13.8 (D.C.G. Brown); Coverack, 30.9 (2), 1.10 (Dr J. Clarke); Gillan Creek near Falmouth, 1.10 (C. Hart); Penzance, 14.10 (M.P. Semmens); Land's End, 18.10 (6) (S. Colenutt *et al.*); St Mary's, Scilly Is, 18.10 (P. Hopkins). DEVON S. Branscombe, 1.10 (2) (P.J. Baker). DORSET Durlston, 1.10, 2.10 (2), 9.10, 18.10, 13.11 (R.J.H. Murray); 11.10 (G.E. Higgs); 19.10 (3), 20.10 (Dr J. Clarke); 12.11 (P. Davey); Herston, Swanage, 16.10 (2) (D. Howton & J. Ward); Swanage, 10.10 (B. Skinner & R.G. Chatelain); 14.10 (D.C.G. Brown); Portland, 11.10 (Anon, *Portland Observatory Report, 1990,* p.35). ESSEX S. Bradwell-on-Sea, 17.9 (A.J. Dewick); 10.10 (S. Dewick). HANTS ISLE OF WIGHT Freshwater, 18.10 (S.A. Knill-Jones). HERTS Much Hadham, 20.10 (D. Wilson). KENT E. Dungeness, 18.10 (D. Walker per S.P. Clancy). LINCS N. Little Cawthorpe, 18.10 (J. Jaines per R. Johnson). ISLE OF MAN Castledown, 18.10, 19.10 (G. Crane), SURREY Banstead, 16.10 (S. Gale per G.A. Collins). SUSSEX E. Peacehaven, 9.11 (C. Pratt). SUSSEX W. Fernhurst, October (S. Church per G.A. Collins). WILTS S. Dinton, 22.10 (S. Palmer). CORK Fountainstown, 28.9 (A. Myers). GUERNSEY Le Chêne, 25.8, 2.9 (Dr T.N.D. Peet per Austin, *Moths and butterflies of Guernsey, 1990,* p.25).

H. peltigera D. & S. (c. 180 and 100 + larvae). CORNWALL W. Lizard, 14.8 (D.C.G. Brown); 2.10 (Dr J. Clarke); Land's End, 17.10 (2) (S. Colenutt *et al.*); Gillan Creek near Falmouth, 29.9 (C. Hart). DORSET Portland, 12.4 (Anon, *Portland Observatory Report, 1990,* p.35); 16.6 (4) (M. Halsey); Durlston, 4.8, 11.8, 22.8 (2), 24.8 (R.J.H. Murray); 29.9 (2) (P. Davey). ESSEX S. Bradwell-on-Sea, 24.2, male "caught flying near early sallow bloom" (S. Dewick per Knill-Jones, *Ent. Rec.* **102**: 191). HANTS S. Lymington, 7.7 (A.J. Pickles); Totton, 1.8 (M. Jeffes); Winchester, 1.6 (R. Hoare per D.H. Sterling). KENT E. Greatstone, 2.6, 12.8 (2), 23.8, 24.8 (2) (B. Banson per S.P. Clancy); Dungeness, 30.7 - 3.8 (150, plus larvae) (S.P. Clancy & P. Smytheman); 21.8 (S.P. Clancy); 1.9, 27.9 (3 larvae) (G.A. Collins); Whitstable, 9.7 (E.S. Bradford). OXFORD Long Wittenham, 27.8 (Dr D.F. Owen). SUSSEX W. Pagham, n.d. (4 larvae) (J.W. Phillips); 5.10 (larvae common), 20.10 (about 20 larvae) (G.A. Collins & D.C.G. Brown). GUERNSEY Le Chêne, 25.8 (Dr. T.N.D. Peet, per Austin, *Moths and butterflies of Guernsey, 1990*, p.25).

Eublemma ostrina Hbn. (2). DORSET Studland, 2.10 (f. *carthami*) (D.C.G. Brown); Portland, 13.10 (R. Darlow, det, from photo — J.M.C.-H.).

Chrysodeixis chalcites Esp. (20). BERKS (v.c.22) Cholsey, 14.10 (Moore, *Br. J. ent. nat. Hist. Soc.* **4**: 25). ESSEX S. Bradwell-on-Sea, 18.10 (2 males, 3 females) (A.J. Dewick). ESSEX N. Mistley, 20.10 (S.P. Moxey per B. Goodey). HANTS S. Highcliffe, 2.10 (E.H. Wild). HERTS Green Tye, 18.10 (D. Wilson). LINCS N. Little Cawthorpe, 17.10 (2), 18.10 (J.

Jaines per R. Johnson). NORFOLK E. Overstrand near Cromer, 17.10 (2) (R.M. Cox per D.C.G. Brown); Brundall, 19.10 (A.P. Foster). SUSSEX W. Littlehampton, 13.9, 15.9 (2) (Mrs R. Pratt per C.R. Pratt); Walberton, 18.11 (J. Radford per C.R. Pratt). PERTH E. Kindrogan, 25.10 (P. Costen per B. Skinner).

Trichoplusia ni Hbn. (3). DORSET Durlston, 20.7, 21.7 (R.J.H. Murray). KENT E. Dungeness, 23.2 (Clancy, *Ent. Rec.* **103**: 52).

Diachrysia orichalcea F. (2). CORNWALL W. Cot Valley, 13.10 (A.M. Hanby & G.C. Stephenson); Land's End, 18.10 (S. Colenutt *et al.*).

Macdunnoughia confusa Steph. CORNWALL W. St Mary's, Scilly Is, 8.10 (P. Hopkins).

Catocala fraxini L. (5). KENT E. Dungeness, 27.9 (Clancy, *Ent. Rec.* **103**: 52); Densole near Folkestone, 17.10 (T. Rouse per S.P. Clancy). SUSSEX W. Lancing, 21.8 (Mrs Finch per M. Parsons); Shoreham, 28.10 (M. Kelly per C. Pratt); Pagham, 13.10 (D. Brown per C. Pratt).

****C. nupta*** L. CORNWALL W. Cusgarne, 17.10, 12.11. Probably not resident in Cornwall (A. Spalding).

Grammodes stolida F. SUSSEX E. Crowborough, 30.9 (Simmons, *Br. J. ent. nat. Hist. Soc.* **4**: 26, pl. 2, fig. 1). Only the second record of occurrence in Britain.

*Hypena obsitalis Hbn. DEVON S. Torbay, 2 - 3.8 (12) (Dobson, *Br. J. ent. nat. Hist. Soc.* **4**: 64); 8.8 (Dr B.P. Henwood).

****Trisateles emortualis*** D. & S. KENT W. Kippings Cross near Pembury, 28.6, male disturbed from undergrowth (A.J. Butcher).

Tales of the Woodpile

It was early evening on Christmas Eve 1985. A jolly fire crackled in the sitting-room grate. the sound of King's College Choir came over the radio and the smell of baking mince pies permeated through the whole house. I was feeling particularly content and satisfied with my lot when I placed my hand on the back door handle and was promptly stung by a wasp.

The insect was a queen common wasp (*Vespa vulgaris* L.) which had wakened from hibernation and chanced to settle on the handle. Beyond the discomfort of the sting, which I can confirm is worse than that of a worker wasp, I dismissed the incident from my mind and settled down to enjoy the Christmas festivities. A week or two later another queen wasp appeared in the house — this time it was in the sitting-room, noisily circling the central light. Thinking that the wasps could be coming from the wood which had been brought in for the fire, the following day I searched through the woodpile carefully examining all the logs. I found no less than twenty-five hibernating queens in a pile of logs about a metre wide, three metres long and about one metre high. Much of the wood was in the form of pieces split

from larger logs. These wood pieces tended to have relatively flat faces of rough wood and it was on these flat faces that the queens were normally found. All the queens were low down in the pile, within thirty centimetres or so of the ground, and all were on the underside of pieces of wood.

I was amazed to see that the wasps used only their jaws to cling to the wood surface. They held themselves parallel to the wood and a couple of millimetres away from it. The legs were not used for support at all and were folded lightly into the body. 1985 was a plague year for wasps in this part of Surrey and I have not come across any more hibernating queens since then.

This past winter (1991-2), has also been notable in the woodpile, but this time for the Peacock butterfly (*Inachis io*). Six or seven have appeared amongst the wood as the pile has been used up and all have been carefully rehoused in the oilshed, a small brick-built outbuilding on the north side of the house, ready to be released on a warm day in mid-April. The last Peacock I found had failed to survive. It was very close to the ground and when uncovered it simply consisted of four separated wings, the more substantial parts having been eaten, perhaps by a shrew.

In November 1991 I had to dismantle a garden shed and underneath the wooden floor I found no less than four Peacocks already in hibernation.

I am pleased to see such numbers of the butterfly this winter, as it is not normally common here, and I wonder if this will herald a season of abundance for the Peacock as we have recently seen with the Holly Blue (*Celastrina argiolus* L.).— COLIN HART, Fourpenny Cottage, Dungates Lane, Buckland, Betchworth, Surrey RH3 7BD.

***Cilex glaucata* Scop. (Lep.: Drepanidae); Seasonal Dimorphism, and probable third generation in 1982.**

The textbooks are in agreement regarding the time of appearance of this species — bivoltine, the moth flying in May and June and again in late July and August; my records for Kent are in accord with this. However, in these textbooks, there appears no mention of the seasonal dimorphism the species displays, although Chalmers-Hunt refers to it in his *Butterflies and Moths of Kent* (1968) in which he states that "on the basis of light captures alone, specimens of the aestival brood normally appear much more numerous than those of the darker vernal generation *obscurata* Lempke". My garden light records support this statement — from 1969 to 1991 of 86 specimens only 30% are of the vernal generation.

On 17th September 1982, the trap held a specimen which was almost certainly a representative of a third brood; in that year specimens were noted in early June, and from mid-July to early August. Confirmation that *glaucata* has the potentiality to produce third generation specimens is acknowledged in L.W. Newman (*A Text-book of British Butterflies and Moths,* 1913) in which under the heading "Foodplants and rearing hints" it states "triple brooded", referring to rearing in captivity.— B.K. WEST, 36 Briar Road, Dartford, Kent DA5 2HN.

REPEATED COPULATION BY FEMALES OF BRITISH MOTHS

M.R. SHAW

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THE GENETICALLY simple view that female Lepidoptera in general mate only once used to be fairly prevalent, but it has been somewhat overturned as more and more species of moths, kept under culture conditions by various workers for research purposes, have been observed to be freely polyandrous. During the years in which I was culturing a few tens of species of British moths in order to conduct experiments with their parasitoids, my general impression was that females of most species were mating more than once. I generally confined several of each sex together and paid them little attention until eggs appeared, with the result that the behaviour of individuals usually went unrecorded. However, in four cases involving only a single pair of moths I did verify and keep notes of successive copulations. As multiple-mating systems and sperm-competition have recently attracted considerable interest, it now seems worth recording these cases. Adults were confined, with scrumpled tissue paper and 1:3 (or more dilute) honey:water suspended on cotton-wool, in cardboard shoe-boxes with glass sheets replacing the lids, and kept in an open garden shed (in 1976 in Manchester; in 1978 in Reading). Adults were either freshly emerged or had been kept unfed for a few days at c. 4°C in the dark in a refrigerator: the exact detail was not recorded for any of the cases given here.

(1) *Phalera bucephala* (L.) (Notodontidae). Stock from Skye. One male and one female put together 20.vi.76; seen in cop. late evening 21.vi.76; seen separated, with the first eggs laid, on 22.vi.76; in cop. again 25.vi.76.

(2) *Eligmodonta ziczac* (L.) (Notodontidae). stock from Easter Ross. One male and one female put together 16.vi.76; seen in cop. early evening 17.vi.76; seen separated, with the first eggs laid, a.m. 18.vi.76; in cop. again early evening 18.vi.76; seen separated a.m. 19.vi.76 (then kept isolated from one another until 20.vi.76); in cop. again early evening 20.vi.76.

(3) *Spilosoma lubricipeda* (L.) (Arctiidae). Stock from Manchester. Date one male and one female put together not recorded; seen in cop. overnight 3/4.vi.78; seen separated 4.vi.78; in cop. again overnight 4/5.vi.78. (Eggs obtained but dates not recorded.)

(4) *Acronicta rumicis* (L.) (Noctuidae). Stock from Manchester and Easter Ross. One male and one female put together 21.vi.76; seen in cop. 22.vi.76; subsequently seen separated; in cop. again 27.vi.76. (Eggs obtained but dates not recorded.)

Multiple mating in the four cases detailed above of course failed to provide for the female the genetic bet-hedging that might be expected of polyandry, and the successive (presumed) ejaculates of the male must

similarly have been superfluous. It is hardly surprising, however, that behaviour was not modified to take account of drawing these blanks.

Although the behaviour of individuals could not be ascertained, polyandry was certainly verified in a fourth family, Choreutidae, when multiple pairings (ie separate copulations well in excess of the number of females present) were seen to take place between three females and three males of *Anthophila fabriciana* (L.). In this case the moths were being kept, with dilute honey, in a closed 17 x 11 x 6 cm clear plastic box and the matings, as well as ovipositions, were observed throughout an eight day period during June 1976.

Lepidoptera notes from East Hertfordshire

As it is now several years since I communicated any general notes of moth records from this area I felt a "better late than never" policy best.

In 1989 the only migrant of note was a female *Rhodometra sacraria* Linn. taken flying in Green Tye over potato plants and sorrel. Fertile eggs were obtained. Most years produce the odd specimen of *Euproctis chrysorrhoea* Linn. in east Herts and specimens came to light on 28th June 1990 (one), and in 1991 single males on 13th and 28th July. The first specimen that I have seen in this area of *Hyloicus pinastri* Linn. was taken on 30th July 1990. This was followed by an encounter with a black and yellow marked Heliconid butterfly hovering around ripe berries on an elder bush down a local lane, on 9th September. No one in the area could throw any light on this occurrence. On 17th October 1990 there were signs of migrant arrivals in the area with single specimens of *Udea ferrugalis* Hb. and *Palpita unionalis* Hb. at light together with specimens of *Agrotis ipsilon* Hufn. and *Peridroma saucia* Hb. The following night, 18th October, produced a *Chrysodeixus chalcites* Esp. which I nearly overlooked in the trap as it was tucked in under the bulb, and on 19th October a single *R. sacraria* Linn. The 20th October produced a specimen of *Heliothis armigera* Hb.

On 12th September 1991, I was alerted to the presence in the area of early stages of *Acherontia atropos* Linn. when a pupil at the local primary school produced a fully grown larva from a garden vegetable patch. A quick search produced another larva from the same spot but extensive searches of suitable fields failed to locate signs of larval activity. However, in mid October, liaison with potato harvesters produced four more larvae and pupae.

One final point of interest was the male *Hepialus humuli* Linn at light on 11th October 1991. J.M. Chalmers-Hunt refers to other late examples of this species in *The Butterflies and Moths of Kent* (1981), the latest date referred to being 21st September 1978, instead of the more usual June, July flight period.— DAVID WILSON, Joyce House, Green Tye, Much Hadham, Hertfordshire SG10 6JJ.

EGG-LAYING SITES, DISTRIBUTIONS AND HOSTPLANTS OF MEMBERS OF THE GENUS *PARARGE* (LEPIDOPTERA: SATYRINAE)

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WITHIN THE Palaearctic there are three universally recognised species of the genus *Pararge: P. aegeria* in mainland Europe and also on the island of Madeira, *P. xiphia* restricted to Madeira, and *P. xiphioides* on the Canary Islands. The three species differ in behaviour, habitat use and habitat association, but all have some affinity with woodland, especially for suitable sites in which to lay eggs.

An early description of the hostplants of *P. aegeria,* and its persistent repetition, states "It feeds on various grasses, among which are *Triticum (=Agropyron) repens* and *Dactylis glomerata*" (South, 1906). In north-western, central, southern and western parts of its range in the British Isles, and northern, central and southern France the plant most frequently used for egg-laying is *Brachypodium sylvaticum* (Shreeve, 1986 and personal observations) and not those given by South and others. Alternative hostplants are also used but all those on which it is known to lay eggs and on which larvae will survive are members of the Gramineae. This restriction to one hostplant family persists on Madeira where the main hostplant is *Brachypodium sylvaticum* (Shreeve & Smith, 1992). This island was recently colonised by *Pararge aegeria* but its hostplant range is the same as that in mainland Europe, despite its occurrence in at least one novel habitat type, laurel forest.

The plant species used most frequently by *P. xiphia* on Madeira is also *Brachypodium sylvaticum* (Owen, Shreeve & Smith, 1986; Shreeve and Smith, 1992). A minority of other members of the Gramineae are also used but we also have one record of one third instar larva on an unidentified *Carex* species (family Cyperaceae). The other two species, *P. aegeria* and *P. xiphia* tend to lay their eggs singly on isolated plants growing in sheltered locations where they are prominent (e.g. at the base of boulders or at the edges of small clearings and paths). Egg-laying females are extremely selective, both of location and species (Shreeve, 1986) and this can result in some individual plants being used by more than one female; a maximum of six eggs and larvae being found on one isolated plant (Shreeve, 1986). It would thus appear that both species actively select plants of the family Gramineae, especially *Brachypodium sylvaticum,* and lay their eggs singly.

In late June 1991 on Tenerife there was a period of extensive egg-laying by *Pararge xiphioides* which reveals interesting extensions to the records of

Table 1. The number of eggs and larvae of *P. xiphioides* recorded on a variety of hostplants in the area of laurel and one area of pine forest on Tenerife between 18th and 28th June 1991. (Total time spent searching = eight hours.)

Plant species	Number of Eggs	Number of larval instar 1st	2nd	3rd	4th	5th
Gramineae						
Brachypodium sylvaticum	805	194	85	86	29	3
Agrostis tenuis	13	0	0	0	0	0
Cypereaceae						
Carex divulsa	105	8	6	5	0	0
Juncaceae						
Luzula forsteri	18	5	2	0	0	0

hostplant use by *Pararge*. Table 1 shows the number of eggs and larvae found on different plant species in June 1991. This pattern of egg distribution is of interest for two reasons. First the range of plant families used is greater than that known for other members of the genus. The presence of eggs and feeding larvae on *Luzula forsteri* (family Juncaceae) and *Carex divulsa* (family Cypereaceae) is indicative of a hostplant range which is taxonomically more diverse than that of other members of the genus. However, we do not yet know whether these plants can support full larval development. The plants that were laid on tended to be in similar situations to those used by other species and it is probable that the same spatial cues are used in egg-laying. Observations of egg-laying females indicate that these egg-laying sites are positively selected; females that laid on *Carex* and *Luzula* engaged in the full behavioural repertoire of egg-laying and positively selected the plants that they laid on. They were also seen to lay on *Brachypodium sylvaticum* during bouts of egg-laying and it is unlikely that laying eggs on members of the Cyperaceae and Juncaceae represent mistakes in recognition. The butterfly is associated with laurel forest which can be very dense with sparse ground flora where undisturbed. In such circumstances the exploitation of rushes and sedges may afford the opportunity to maintain population size where grasses are scarce. At other locations eggs were also found on *Oryzopsis miliacea* and a fifth instar on *Dactylis glomerata*.

As well as using a wide range of plants for egg-laying, the loading of eggs on some individual plants was high (Table 2). Many plants had been laid on more than once and the range of the stages on particular leaves indicates that they had been used over a period of time. As an extreme case, one large plant of *Brachypodium sylvaticum,* with twenty-six leaves, had 145 eggs and larvae. This plant was in a prominent position at the end of a

Table 2. The number of eggs and larvae recorded per hostplant in laurel forest at Las Mercedes, Tenerife on 22nd June 1991.

Plant species	Number of eggs and larvae per plant												
	1	2	3	4	5	6	7	8	9	10	11	12	12+
Gramineae													
Brachypodium sylvaticum	13	9	5	8	2	6	3	0	1	3	0	2	15*
Agrostis tenuis	0	2	1	1	0	0	0	0	0	0	0	0	0
Cyperaceae													
Carex divulsa	11	10	8	2	2	2	1	0	0	0	0	1	0
Juncaceae													
Luzula forsteri	5	2	1	1	0	0	0	0	0	0	0	0	0

* Includes one plant with 145 eggs and larvae.

verge in laurel forest adjacent to an extensive area with no ground cover. It probably had such a large number of eggs because of its position; observed females found this plant after prolonged flight without encountering egg-laying sites or they returned to it after moving along the verge and entering the area with no ground cover.

The apparently high loading on particular plants may be weather related. The sites that we visited in laurel forest are subject to frequent cloud and for approximately two weeks before the counts were made the area had been particularly cool and dull. This may have precluded female activity and the subsequent warm clear weather facilitated activity and the laying of a large number of matured but unlaid eggs. Alternatively the pattern of egg loading may be a regular seasonal event or it may represent an unusually large adult population size in the visited localities. It is unlikely than many of the eggs and early larval stages will survive to maturity; initial observations suggest a significant turnover of eggs on particular plants due to egg predation. Those plants laid on also tended to be isolated and, without early mortality, the majority of larvae will be forced to move considerable distances to avoid starvation. These observations may indicate that population dynamics and hostplant use of the Canary Island Speckled Wood differ from that of the Madeiran and European Speckled Wood butterflies.

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Unusual larval foodplants of the Marsh Fritillary *Eurodryas aurinia* (Rottemburg) and Painted Lady (*Cynthia cardui*) (Linnaeus).

I noted in the recently published *The Moths and Butterflies of Great Britain and Ireland* **7**, Part I, edited by A. Maitland Emmet and J. Heath, that only one report is known of the Marsh Fritillary feeding on field scabious, *Knautia arvensis,* the reference being: H.C. Dunk, *The Entomologist* **85**: 104 (1952). I have reared the Marsh Fritillary in my garden in South Glamorgan for nine years. Wild larvae will often be found feeding on field scabious, which is in a sunnier part of the garden, rather than on the normal foodplant, devils-bit scabious, *Succisa pratensis,* which occurs in a more damp and shaded area.

I have also occasionally found single larvae of the Painted Lady on the knapweeds *Centaurea nigra* and *Centauria scabiosa* although these are not mentioned as foodplants in the same volume.— R.T.D. TILLEY, 1 The Paddocks, Lower Penarth, South Glamorgan CF6 2BB.

***Brachytron pratense* Müll. (Odonata) rediscovered in Warwickshire**

On 27th May 1992 at Pooley Fields, Alvecote Pools NR (SSSI) in North Warwickshire, I observed at close hand and sketched the important features of a smallish hawker which I suspected to be and later confirmed as a male Hairy Dragonfly, *Brachytron pratense.* The yellow rather than green thoracic stripes would indicate an immature individual. The dragonfly was working its mouthparts and probably eating some small insect which I could not see from above. The woodland glade in which I found it resting no doubt gave some shelter from a very strong wind. When I left, it still remained where I first saw it settle.

I believe this is the first record of *B. pratense* in Warwickshire for over 50 years, the last being recorded in the Rugby area in the 1930s. In the Fifth (and final) *Warwickshire Wildlife Report,* 1987 (Warwickshire Museum) the County Odonata Recorder wrote: "The lack of recent records for *Brachytron pratense* makes me believe that this species is lost to the county. I hope to be proved wrong."

Within twenty yards or so on either side of the site where it was seen there is what would seem to be suitable habitat for breeding — a reedy pool with now hardly any open water and a canal. The latter may well be the breeding site here for the White-legged Damselfly, *Platycnemis pennipes* which is usually found in its vicinity.— B.R. MITCHELL, (Reserve Recorder), 127 Watling Street, Grendon, near Atherstone, Warwickshire CV9 2PH.

MICROLEPIDOPTERA REVIEW OF THE YEAR 1990

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(Concluded from p.195)

COLEOPHORIDAE

490 *Coleophora lutipennella* (Zell.) — Cardiff (**41**) 13.vii.90 — EFH; Stapleford Wood (**53** & **56**) cases on *Quercus* 13.x.90 — AME

491 *C. gryphipennella* (Hübn.) — Moity Wood SSSI (**43**) cases on *Rosa* 18.ix.90 — AME, JRL & PHS

492 *C. flavipennella* (Dup.) — Cardifff (41) 16.vi.90 — EFH; Stapleford Wood (**53** & **56**) cases on *Quercus* 13.x.90 — AME

494a *C. prunifoliae* Doets — Browndown (11) larvae feeding on *Malus* 7.v.90, moths bred — JRL & R.J. Dickson, *Ent. Gaz.* **42**: 242; Trowbridge (7) larvae on *Prunus cerasifera* — H. Smith, *Ent. Rec.* **103**: 209f

509 *C. juncicolella* Staint. — County Gate (**4**) cases on *Calluna* 23.ix.90 — AME

511 *C. orbitella* (Zell.) — Pont ar Hydfer (**42**) 17.ix.; St Harmon (**43**), Llangurig (**47**) cases on *Betula* 21.ix.90 — AME & JRL; Stapleford Wood (**56**) case with dead larva that had fed on *Quercus* after apparently falling from *Betula* above — AME

513 *C. potentillae* Elisha — Tuddenham Heath NR (**26**) cases on *Rubus caesius* 20.x.90 — AME

517 *C. frischella* (Linn.) — Cockayne Hatley (**30**) viii.90 — DVM

518 *C. mayrella* (Hübn.) — Cardiff (**41**) 4.vi.90 — EFH

523 *C. hemerobiella* (Scop.) — Dinton Pastures (22) case on *Crataegus* 30.iv.90, moth bred 7.viii.90 — BRB

524 *C. lithargyrinella* Zell. — Heddon Valley (**4**) cases on *Stellaria holostea* 23.ix.90 — AME

526 *C. laricella* (Hübn.) — Staylittle (**47**) cases on *Larix* 21.ix.90 — AME & JRL

533 *C. anatipennella* (Hübn.) — Marford (**50**) 1990 — B. Formstone per HNM

535 *C. ardeaepennella* Scott — Stapleford Wood (**53**) cases on *Quercus* 13.x.90 — AME

545 *C. saturatella* (Staint.) — Beaulieu (11) cases on *Genista tinctoria* 23.vi.90, moths bred — JRL & DHS

553 *C. striatipennella* Nyl. — Cockayne Hatley (**30**) vi.90 — DVM

556 *C. trochilella* (Dup.) — Portsmouth (11) larvae feeding on *Leucanthemum vulgare* 12.v.90, moths bred — JRL *Ent. Gaz.* **42**: 242

557 *C. gardesanella* Toll — Thorney Island (**13**) cases on *Achillea millefolium* 9.vi.90, moths bred — MWH & JRL
559 *C. peribenanderi* (Toll) — Cardiff (**41**) 1.vii.90 — EFH
561 *C. therinella* Tengst. — Cockayne Hatley (30) four, vi.90 — DVM; Winchester (11) 27.viii.90 two larvae found on *Bilderdykia convolvulus* seeds — DHS, first British record of larva, *Ent. Rec.* **103**: 104; Didcot (22) 11.vii.90 adult — PHS
564 *C. virgaureae* Staint. — Loghill (**H8**) 1.viii.90 — KGMB
566 *C. sternipennella* (Zett.) — Cockayne Hatley (**30**) vi.90 — DVM
568 *C. versurella* Zell. — Cockayne Hatley (**30**) vii.90 — DVM
581 *C. taeniipennella* Herr.-Schäff. — Castlefreke (**H3**) 13.vii.90; Ballyvergan (H5) 14.vii.90 — KGMB
583 *C. cratipennella* Clemens — Inchydoney (**H3**) 16.vii.90 — KGMB
586 *C. adjunctella* Hodgk. — Youghal (H5) 2.vi.90 — KGMB; The Gannel, Newquay (**1**) 2.vi.89 — P.N. Siddons per FHNS
588 *C. salicorniae* Wocke — Spurn, (61) 26.vii.89 — HEB; Cardiff (**41**) 25.vii.90 — EFH

ELACHISTIDAE

593 *Elachista regificella* (Sirc.) — Knocksink Wood (H20) mine on *Luzula sylvatica* 17.iii.90 — KGMB
594 *E. gleichenella* (Fabr.) — Kilfinahey (H2) 13.vi.90 — KGMB
595 *E. biatomella* (Staint.) — Streatley (22) common 26.v & 28.vii.90 — BRB
596 *E. poae* Staint. — Trefriw (**49**) 1990 — HNM
598a *E. eskoi* K. & K. — Loch an Eilan (**96**) vii.77, recognised later — MJS, *Ent. Rec.* **102**: 192
602 *E. apicipunctella* Staint. — Pollardstown Fen (**H19**) 10.vi.90 — KGMB
609 *E. cerusella* (Hübn.) — Cork City (**H4**) eight 10.v.90; Foynes (**H8**) 25.vii.90; Kilcolman (**H5**) 10.viii.90 — KGMB
613 *E. subocellea* (Steph.) — Howth (**H21**) 9.vi.90 — KGMB
616a *E. littoricola* (Le March.) — Keyhaven (11) two 10.vi.90 — JRL & MWH
620 *E. gangabella* Zell. — Heddon Valley (**4**) 23.ix.90; Stanner NNR (**43**) mines on *Brachypodium* 16.ix.90 — AME, JRL & PHS
622 *E. revinctella* Zell. — Bagley Wood (22) 27.vi.90 — MFVC; Whitbarrow Scar (69) 1990 — MRY
623 *E. bisulcella* (Dup.) — Cockayne Hatley (**30**) ix.90 — DVM
627 *Biselachista scirpi* (Staint.) — The Gannel, Newquay (**1**) 2.vi.89 and former years — P.N. Siddons per FHNS
630 *B. albidella* (Nyl.) — Ard Trilligan (98) 1990 — MRY
632 *Cosmiotes consortella* (Staint.) — Foynes (**H8**) two 3.vi.90; Portmarnock (H21) 11.vi.90; Banna Strand (**H2**) three 12.vi.90 — KGMB
633 *C. stabilella* (Staint.) — Lulworth (9) 14.x.90, presumably a third generation — PHS

OECOPHORIDAE

640 *Batia lunaris* (Haw.) — Edlington Wood, (63) 3.viii.90 three at m.v. — HEB; Cardiff (41) 31.vii.90 — EFH

640a *B. internella* Jäckh — Described as **New to Britain**, captures at Aymestry (**36**) 8.viii.85 and 2.viii.88 — MWH, *Ent. Gaz.* **41**: 99-101.

641 *B. lambdella* (Don.) — Landford Bog (8) 15.vi.90; Bentley Wood (8) 12.vii.90 — SMP

650 *Esperia oliviella* (Fabr.) — Wyre Forest (37) 1990 — ANBS

651 *Oecophora bractella* (Linn.) — Wyre Forest (**37**) 1990 — ANBS

658 *Carcina quercana* (Fabr.) — Holywell, Eastbourne (14) 12.x.90 — a late date — MP

660 *Pseudatemelia josephinae* (Toll) — Langley Wood (8) v.vii.87 — CWP

668 *Enicostoma lobella* ([D. & S.]) — Cockayne Hatley (**30**) vi.90 —DVM

671 *Depressaria ultimella* Staint. — Cork City (**H4**) 24.iv.90 —KGMB

676 *D. pulcherrimella* Staint. — Cockayne Hatley (**30**) vii.90 — DVM

689 *Agonopterix ciliella* (Staint.) — Broadchalke (8) bred from *Angelica sylvestris,* em. 22.vii.90 — SMP

697 *A. arenella* ([D. & S.]) — Rhayader (**43**) 15 - 21.ix.90 — AME, JRL & PHS

698 *A. kaekeritziana* ([S. & S.]) — Barrigone (H8) 1.viii.90 — KGMB

705 *A. ulicetella* (Staint.) — Rhayader (**43**) 15 - 21.ix.90 — AME, JRL & PHS

706 *A. nervosa* (Haw.) — Rhayader (**43**) 15 - 21.ix.90 — AME, JRL & PHS

720 *Ethmia bipunctella* (Fabr.) — Winchester (11) one resting on post near trap site 11.x.90 — DHS, *Ent. Gaz.* **42**: 44.

GELECHIIDAE

726 *Metzneria metzneriella* (Staint.) — Cardiff (**41**) 29.vi.90 — EFH

728 *Paltodora cytisella* (Curt.) — Barrigone (**H8**) 25.vii.90 — KGMB

730 *Apodia bifractella* (Dup.) — Bentley Wood (**8**) 3.viii.90; Dinton (8) 5.viii.90 — SMP

731 *Eulamprotes atrella* ([D. & S.]) — Barrigone (**H8**) 25.vii.90 — KGMB

731a *E. phaeella* Heck. & Lang. — Snodland (**16**) 1990 DO'K; further records in v.c.s 1 and 14 — RJH, *Ent. Gaz.* **41**: 87f; Bexley (**16**) vii.-viii.37 — L.T. Ford coll. — RJH, *Ent. Gaz.* **42**: 188

733 *E. wilkella* (Linn.) — Portmarnock (H21) four over *Thymus* 11.vi.90 — KGMB, *Ent. Gaz.* **42**: 71-74.

734 *Argolamprotes micella* ([D. & S.]) — Bonhill Wood (**4**) 11.vii.90 —RJH; Langford Heathfield (**5**) several 13.vii.90 — DJLA

735 *Monochroa tenebrella* (Hübn.) — Liscullane (**H2**) 13.vi.90 — KGMB

744a *M. moyses* Uffen — Southbourne (**13**), Portsmouth (**11**) mines on *Scirpus maritimus* 8.iv.90, moths bred — JRL, *Ent. Gaz.* **43**: 144. Species described as **New to Science** — R.W.J. Uffen, *Br. J. ent. nat. Hist.* **4**: 1-7

747 *Chrysoesthia sexguttella* (Thunb.) — Loghill (**H8**) mines on *Atriplex* 1.viii.90; Inishmore, Aran Islands (H9) 21.vii.90; Cape Clear Island (**H3**) mine on *Atriplex,* 18.viii.90 — KGMB

748 *Ptocheuusa paupella* (Zell.) — Bentley Wood (**8**) 3.viii.90 — SMP

755 *Stenolechia gemmella* (Linn.) — Cardiff (**41**) 27.viii.90 — EFH

758 *Recurvaria leucatella* (Clerck) — St Albans (20) one at m.v. 27.vii.90 — MJS

762 *Athrips mouffetella* (Linn.) — Cardiff (41) 17.vii.90 — EFH

766 *Teleiodes scriptella* (Hübn.) — Cowston (**27**) spinnings on *Acer campestre* 28.viii.90 — D.C. Annetts det MJS

771 *T. alburnella* (Zell.) — Gordano Valley NNR (**6**) 18.vii.90 — DJLA

773 *T. paripunctella* (Thunb.) — Dowland Moor (**4**) collected on *Quercus* 3.vii.89 em. 25.vi.90 — RJH

776 *Teleiopsis diffinis* (Haw.) — Dinton (**8**) 12.ix.90 — SMP; Rhayader (**43**) 15 - 21.ix.90 — AME, JRL & PHS

778 *Bryotropha umbrosella* (Zell.) — Inch (**H1**) 27.v.90 — KGMB

781 *B. mundella* (Dougl.) — Inchydoney (**H3**) 4.viii.90 — KGMB

782 *B. senectella* (Zell.) — Barrigone (**H8**) 25.viii.90 — KGMB

800 *Gelechia rhombella* ([D. & S.]) — Wylde Green (**38**) 1990 — MRY

802a *G. sororculella* (Hübn.) — Aghacunna (H3) 4.viii.90 — KGMB

819 *Scrobipalpa costella* (H. & W.) — Dolgarrog Station (**50**) 1990 — HNM

830 *Caryocolum fraternella* (Dougl.) — Kilcolman (H5) 10.viii.90 — KGMB; Cockayne Hatley (**30**) vii.90 — DVM; Sontly Moor (50) 1990 — M. Newstead per HNM

841 *Sophronia semicostella* (Hübn.) — Fingringhoe Wick NR (19) 13.vii.90 — BG

845 *Syncopacma sangiella* (Staint.) — Blackhall Rocks (**66**) 1990 — ANBS

858 *Hypatima rhomboidella* (Linn.) — Rhayader (**43**) 15 - 21.ix.90 — AME, JRL & PHS

859 *Psoricoptera gibbosella* (Zell.) — Cardiff (**41**) 23.viii.90 — EFH

862 *Dichomeris marginella* Fabr. — Morthen, Rotherham (63) 19.vii.90 — HEB

870 *Oegoconia quadripuncta* (Haw.) — Cardiff (**41**) 16.vii.90 — EFH

BLASTOBASIDAE

873 *Blastobasis lignea* (Wals.) — Bentley Wood (**8**) 28.vii.90 — SMP

874 *B. decolorella* (Woll.) — Cardiff (**41**) 31.v.90 — EFH, **New to Wales**; North-east Essex (19) recorded every month ii. - xi.90 — BG

875 *B. phycidella* (Zell.) — Guernsey (**113**) resident, several taken vi.90 — DJLA & JRL, coloured plate *Br. J. ent. Nat. Hist.* **4**: Pl.II (between pp. 32-33)

MOMPHIDAE

800 *Mompha langiella* (Hübn.) — Rhayader (**43**) mines on *Circaea lutetiana* 15.ix.90 — AME, JRL & PHS

882 *M. locupletella* ([D. & S.]) — Blackditch Wood (H20) Malaise trap 3 - 20.vi.90 — KGMB

883 *M. raschkiella* (Zell.) — Hampstead (21) 9 & 12.viii.90 — RAS; Carmel Woods SSSI (**44**) mines on *Epilobium angustifolium* 20.ix.90 — AME & JRL

888 *M. propinquella* (Staint.) — Dinton (**8**) 22.vi.90; Blackmore Copse (8) 25.vi.90; — SMP; High Woods, Colchester (19) a dawn flight viii.90 — BG

COSMOPTERIGIDAE

896 *Cosmopterix orichalcea* Staint. — Tuddenham Heath NR (**26**) mines on *Phalaris* 20.x.90 — AME

897 *C. lienigiella* Zell. — Cothill (**22**) 11.vii.90 — MFVC

899 *Pancalia leuwenhoekella* (Linn.) — Rhyd-y-Foel (**50**) 1990 — M. Newstead per HNM, **New to Wales**

903 *Glyphipteryx linneella* (Clerck) — Kings Cross Station (21) 27.vi.90 — MJS; Saffron Walden (**19**) 3 & 9.viii.90 — AME & JRL

907 *Dystebenna stephensi* (Staint.) — Bexley & Petts Wood (16) common on oak trunks 1990 — DO'K

TORTRICIDAE

921 *Phtheochroa inopiana* (Haw.) — High Woods, Colchester (19) 23.viii.90 — BG; Ballyvergan (**H5**) 14.vii.90 — KGMB

924 *Hysterophora maculosana* (Haw.) — Allt Coire Dhorrcail, Knoydart (97) 9.vi.90 — MFVC

926 *Phalonidia manniana* (Fisch. v. Rösl.) — Ballyvergan (**H5**) 14.vii.90 — KGMB

933 *Phalonidia gilvicomana* (Zell.) — Cardiff (**41**) 31.v.90 — EFH

942 *Aethes piercei* Obraztsov — Barrisdale and Ambraigh, Knoydart (**97**) vi.90 — MFVC; Bentley Wood (**8**) v.90 — SMP

952 *Commophila aeneana* (Hübn.) — Friston Forest (14) 27.v.90 — MP

985 *Cacoecimorpha pronubana* (Hübn.) — Valley (52) 1990 — HNM

986 *Syndemis musculana* (Hübn.) — Abbeycwmhir (**43**) larva on *Rubus* 16.ix.90, adult bred 1991 — AME

998 *Epiphyas postvittana* Walk. — Bristol (**34**) 23.iv.90 — R.J. Barnett, *Ent. Rec.* **103**: 42f; West Luccombe (**5**) 1990 — J. Robbins per AME

1001 *Lozotaeniodes formosanus* (Geyer) — Sheviock (**2**) 12.vii.90 — S.C. Madge per FHNS

1009 *Philedonides lunana* (Thunb.) — Brenig (50) 1990 — HNM

1012 *Sparganothis pilleriana* ([D. & S.]) — Llandudno (**49**) 1990 — HNM, *Ent. Rec.* **103**: 196

1016 *Cnephasia longana* (Haw.) — Shepherds Close, Bedford (30) 16.vii.90; Gransden Wood (**31**) 28.vii.90 — BD

1034 *Spatalistis bifasciana* (Hübn.) — Friday Wood, Colchester (**19**) 27.vi.90 — BG

1036 *Acleris forsskaleana* (Linn.) — Holywell, Eastbourne (14) 13.x.90 — a late date — MP

1038 *A. laterana* (Fabr.) — Rhayader (**43**) 15 - 21.ix.90 — AME, JRL & PHS

1041 *A. sparsana* ([D. & S.]) — Rhayader (**43**) 15 - 21.ix.90 — AME, JRL & PHS

1042 *A. rhombana* ([D. & S.]) — Rhayader (**43**) 15 - 21.ix.90 — AME, JRL & PHS

1044 *A. ferrugana* ([D. & S.]) West Wood (**30**) 13.vii.90 — DVM

1047 *A. schalleriana* (Linn.) — Wyndcliff (**35**) larval feeding on *Viburnum lantana* 19.ix.90 — AME, JRL & PHS

1048 *A. variegana* ([D. & S.]) — Rhayader (**43**) 15 - 21.ix.90 — AME, JRL & PHS

1049 *A. permutana* (Dup.) — Dungeness (15) 1990 — DO'K

1053 *A. hastiana* (Linn.) — Rhayader (**43**) 15 - 21.ix.90 — AME, JRL & PHS

1054 *A. cristana* ([D. & S.]) — Hampstead (21) 5.viii.90 — RAS

1064 *Celypha rosaceana* (Schläg.) — Unhill Wood (22) 15.vii.90 — BRB

1066 *C. woodiana* (Barr.) — Thurlbear (5) 14.vii.90 — DJLA

1067 *Celypha cespitana* (Hübn.) — Chynhalls Point, Coverack (1) 21.vii.90 — FHNS

1069 *Olethreutes aurofasciana* (Haw.) — Ballyvergan (**H5**) 14.vii.90 — KGMB

1079 *O. bifasciana* (Haw.) — Hinchinbrooke Country Park (30) 1990; Fox Holes (**31**) 16.vi.90 — BD

1080 *O. arcuella* (Clerck) — Appin (**98**) 1990 — MRY

1097 *Endothenia gentianaeana* (Hübn.) — Nanjizal, West Penwith (**1**) 17.vii.76 — FHNS

1108 *Lobesia abscisana* (Doubl.) — Dinton Pastures (22) 13.vii.90 — BRB; Kennack Sands (**1**) 23.viii.90 — RJH; Worcs. (37) 1990 — ANBS

1109 *L. littoralis* (H. & W.) — Ridley (**31**) 16.ix.90 — BD

1117 *Ancylis unguicella* (Linn.) — Ladhar Bheinn, Knoydart (**97**) 9.vi.90 — MFVC

1120 *A. mitterbacheriana* ([D. & S.]) — Llanidloes (**47**) larvae on *Quercus* 20.ix.90 — AME & JRL

1124 *A. tineana* (Hübn.) — Schiehellion (88) larvae on *Betula pubescens* 10.ix.89, em. 4.vi.90 — KPB, *Ent. Rec.* **103**: 100

1128 *A. myrtillana* (Treits.) — County Gate (**4**) 23.ix.90 — AME; Abbeycwmhir (**43**) 16.ix.90 larval feeding on *Vaccinium myrtillus* — AME, JRL & PHS

1134 *Epinotia ramella* (Linn.) — Rhayader (**43**) 15 - 21.ix.90 —AME, JRL & PHS

1138 *E. nisella* (Clerck) — Rhayader (**43**) 15 -21.ix.90 — AME, JRL & PHS

1143 *E. fraternana* (Haw.) — Ladock Woods, Truro (2) 19.vi.90 — P.N. Siddons per FHNS

1146 *E. rubiginosana* (Herr.-Schäff.) — Near Lostwithiel (**2**) 9.vi.90 — J.L. Gregory per FHNS

1152 *E. maculana* (Fabr.) — Rhayader (**43**) 15 - 21.ix.90 — AME, JRL & PHS

1157 *Crocidosema plebejana* (Zell.) — Southsea (11) one at m.v. 1.x.90 — JRL; Savernake Forest (**7**) 3.viii.90 — MFVC

1170 *G. oppressana* (Treits.) — Coppice Wood (**30**) 15.vi.90 — DVM

1174 *Epiblema cynosbatella* (Linn.) — Near Barrisdale, Knoydart (**97**) 10.vi.90 — MFVC

1192 *Eucosma conterminana* (Herr.-Schäff.) — Hertford (20) larvae in *Lactuca* heads 21.viii.89, moths bred mid-vii.90 — MJS; Didcot (**22**) adults by day mid-vii.90 — PHS

1208 *Blastesthia posticana* (Zett.) — Hawkerland (**3**) ex l. 24.iv.90; Woodbury Common (**3**) ex l. 25.iv.90 — RJH

1212 *Rhyacionia pinivorana* (L. & Z.) — Fota (**H5**) 17.vi.90 — KGMB

1215 *Cryptophlebia leucotreta* (Meyr.) — Saffron Walden (**19**) at m.v. light 31.vii.90 — AME

1217 *Eucosmomorpha albersana* (Hübn.) — Redhill Wood (22) 18.v.90 common around *Lonicera* — BRB

1226 *Pammene agnotana* Reb. — Dartford (**16**), one 1990 — DO'K; Fleam Dyke (29) one beaten out of hawthorn 28.iv.90 — MJS

1230 *P. suspectana* (L. & Z.) — Weaveley Wood (**31**) 6.v.90 — BD, *Ent. Rec.* **103**: 157, *Br. J. ent. nat. Hist.* **4**: 84f

1232 *P. populana* (Fabr.) — Cape Clear Island (**H3**) 19.viii.90 —KGMB

1233 *P. aurantiana* (Staud.) — Hampstead (21) 13.vii. - 1.viii.90 (early dates) and 3.x.90, a late date — RAS

1237 *P. germmana* (Hübn.) — Stover Park (3) 18.v.90 at light — RJH

1240 *Cydia caecana* (Schläg.) — Near Blewbury (22) bred from *Onobrychis* 7 - 30.v.90 — BRB

1243 *C. pallifrontana* (L. & Z.) — Wick Copse, Headington (23) larvae 1990 — MFVC

1246 *C. tenebrosana* (Dup.) — Perranporth (1) 13.vii.90, Coverack (1) 21.vii.90 — FHNS

1247 *C. funebrana* (Treits.) — Howth (**H21**) 9.vi.90 — KGMB

1260 *C. splendana* (Hübn.) — Bishopstown (**H4**) 3.viii.90 — KGMB

1262 *C. amplana* (Hübn.) — Plympton (**3**) 2.viii.90 at light — RJH. **First confirmed British specimen.** Coloured plate: *Br. J. ent. Nat. Hist.* **4**: Pl. II between pp.32-33.

1262a *C. saltitans* (Westw.) — Southsea (**11**) one at m.v. 8.ix.90 — JRL, *Ent. Gaz.* **42**: 254

1267 *C. cosmophorana* (Treits.) — Berrow (**6**) 23.v.89 — B. Slade per DJLA

1275 *D. flavidorsana* (Knaggs) — Coverack (1) 21.vii.90 several on isolated tansy — FHNS

1277 *D. senectana* (Guen.) — Tregantle (2) roots of *Chrysanthemum leucanthemum* 11.x.90, moths bred v. - vi.90 — MJS, *Ent. Rec.* **103**: 106f, Foodplant confirmed for Britain

1279 *D. acuminatana* (L. & Z.) — Barrigone (**H8**) 15.vii.90 — KGMB

1281 *D. simpliciana* (Haw.) — Cardiff (**41**) 23.viii.90 — EFH; Trevalga, Tintagel (2) 16.vii.89 FHNS

1287 *D. aeratana* (P. & M.) — Goring (**23**) 4.v.90 — MFVC: London Colney (**20**) bred from roots of *Chrysanthemum leucanthemum* collected xii.89 — MJS

ALUCITIDAE

1288 *Alucita hexadactyla* (Linn.) — Rhayader (**43**) 15 - 21.ix.90 — AME, JRL & PHS

PYRALIDAE

1289 *Euchromius ocellea* (Haw.) — Spurn (**61**) 25.ix.90 — B.R. Spence per HEB

1292 *Calamatropha paludella* (Hübn.) — Dinton Pastures (**22**) fairly common 13.vii.90 — BRB; Stover Park (**3**) 30.vii. & 3.viii.90 — RJH

1301 *Crambus lathoniellus* (Zinck.) — Little Paxton Pits (31) 1990 —BD

1303 *Agriphila selasella* (Hübn.) — West Melton (**63**) 3.viii.90 — HEB

1324 *Pediasia aridella* (Thunb.) — Southsea (11) a few at m.v. 19 -22.vii.90 — JRL; West Porlock (**5**) 11.vii.90 — RJH; Berrow (**6**) 23, 25.vi.90 and earlier years — B. Slade per DJLA

1325 *Platytes alpinella* (Hübn.) — North-east Essex coast (19) now fairly common — BG; Inchydoney (H3) c.15, v.viii.90 — the only known Irish locality — KGMB

1329 *Donacaula forficella* (Thunb.) — Marazion Marsh (**1**) 28.vi.90 — R.H. Rogers per FHNS

1335 *Scoparia ancipitella* (La Harpe) — Edlington Wood (63) 29.vi.90 — HEB

1340 *Eudonia truncicolella* (Staint.) — Rhayader (**43**) 15 - 21.ix.90 — AME, JRL & PHS

13243 *E. delunella* (Staint.) — Caergwrle (**51**) 1990 — M. Newstead per HNM; Pydew (49) 1990 — HNM

1353a *Oligostigma polydectalis* (Walk.) — St Ives (**29**) 9.v.88 — J.N. Greatorex-Davies, *Ent. Rec.* **103**: 209

1355a *Evergestis limbata* (Linn.) — Guernsey (**113**) 18.vii.90 — T.N.D. Peet, *Br. J. ent. nat. Hist.* **4**: 32 with coloured plate. **New To Britain**

1357 *E. extimalis* (Scop.) — Hampstead (21) 2.viii.90 — RAS

1358 *E. pallidata* (Hufn.) — Old Rossington (**63**) 18.vii.90 — R.I. Heppenstall per HEB

1380 *Phlyctaenia perlucidalis* (Hübn.) — Cockayne Hatley (**30**) 11.vii.90 — DVM; Fenstanton Pits (**31**) 1990 — BD

1383 *Psammotis pulveralis* (Hübn.) — Dungeness (15) 4.viii.90 — S. Clancy, *Ent. Rec.* **103**: 52f

1387 *Nascia cilialis* (Hübn.) — Donyland Woods, Colchester (19) 6.v.90 — BG; West Wood, Winchester (11) 23.v.89 — J.W. Phillips, *Ent. Rec.* **103**: 270

1405 *Pleuroptya ruralis* (Scop.) — Rhayader (**43**) 15 - 21.ix.90 — AME, JRL & PHS

1432 *Anerastia lotella* (Hübn.) — Perrancoombe (1) 4.vii.89 — FHNS

1452a *Etiella zinckenella* (Treits.) — Warsash, Hants (11) 1.x.90 — P.M. per JRL, second British specimen

1454 *Dioryctria abietella* ([D. & S.]) — Spurn (**61**) 26.vii.90 — B.R. Spence per HEB

1454a *D. schuetzeella* Fuchs — Beckley (14) 7.vi.90 — MP

1462 *Pempeliella diluta* (Haw.) — Barrigone (**H8**) 15.vii.90 — KGMB

1438 *Numonia suavella* (Zinck.) — Torquay (**3**) larvae on *Cotoneaster microphyllus* 30.iii.90, em. 21.v. - 17.vi.90 — RJH, *Ent. Gaz.* **42**: 44; Bentley Wood (**8**) 11.vi.90; Middleton Wood (8) 17.vii.90 — SMP

1470 *Euzophera pinguis* (Haw.) — Gresford (50) 1990 — B. Formstone per HNM; Rowen (49) 1990 — HNM

1467 *Ancylosis oblitella* (Zell.) — Southsea (11) singletons at m.v. 14, 28.viii.90 — JRL; Dinton (**8**) 15.ix.90 — SMP

1482 *Homoeosoma nimbella* (Dup.) — Lamorna Cove (1) 20.vi.79 — FHNS; Guernsey (113) two, vi.90 — DJLA & JRL

1479 *Plodia interpunctella* (Hübn.) — Bedfordshire (30) 1990 — AMR, *Ent. Rec.* **103**: 72

1473 *Ephestia elutella* (Hübn.) — Cardiff (**41**) 17.vi.90 — EFH

1474 *E. parasitella unicolorella* Staud. — Cardiff (41) 20.viii.90 — EFH; Ninfield (14) 31.v.90 — MP

PTEROPHORIDAE

1495 *Marasmarcha lunaedactyla* (Haw.) — Chilmark (**8**) 31.vii.90 — SMP

1502 *P. isodactylus* (Zell.) — Marazion Marsh (1) 12.v.90 — R.H. Rogers per FHNS

1507 *Stenoptilia zophodactylus* (Dup.) — Streatley (22) female 28.vii.90 — BRB

1511 *Pterophorus fuscolimbatus phillipsi* Huggins — Mullion Cove (1) larvae — RJH, *Ent. Gaz.* **41**: 2

1516 *Pselnophorus heterodactyla* (Müll.) — Rediscovered in Scotland, Glent Tilt (88) larvae on a new foodplant *Crepis paludosa* 8.ix.90 — KPB, *Ent. Gaz.* **42**: 75f

A certain record of active flight in *Forficularia auricularia* Linnaeus, the Common Earwig.

I was surprised to read Basil Harley's statement (*Ent. Rec.* **104**: 148) that there is some debate over whether or not the common earwig, *Forficula auricularia* Linnaeus can fly.

I have, like most Lepidopterists, frequently encountered this common insect in the garden moth trap and at the sheet in the local woods, though this alone is not sufficient proof that the animal flew in; it could have crawled. However, I am happy that I can positively confirm that common earwigs are indeed able to fly. I netted one in flight around a 125 watt m.v. lamp in my own garden at Bishops Stortford, Hertfordshire on 11th June 1991.

Whilst abroad, a number were seen to alight on a white sheet mounted vertically at Piliscsaba, Hungary, in August 1991.— COLIN W. PLANT, Passmore Edwards Museum, Romford Road, Stratford, London E15 4LZ.

***Stenus argus* Germ. (Col.: Staphylinidae) in Scotland**

Without having spent much time searching, I have been unable to find a published record of this uncommon *Stenus* from Scotland, rather to my surprise since I have a number of duplicates from the late Philip Harwood marked "Aviemore, 10 & 16.ii.44". It seems unlikely that *S. argus* is a great rarity in Speyside, but it may be very local, or it would surely have been met with by some of the many collectors who have worked that area since Harwood's day.— A.A. ALLEN, 49 Montcalm Road, Charlton, London SE7 8QG.

***Orsillus depressus* Dallas (Hem.: Lygaeidae) in S.E. London, and probably new to Kent**

This bug is a recent addition to the British list, having been first found at Woking, Surrey, in 1987 on cones of Lawson Cypress (R.D. Hawkins, 1989, *Ent. mon. Mag.* **125**: 241). In the *Heteroptera Newsletter* No. 11 (April 1992), p.3, it is reported that Mr Hawkins is continuing to find new colonies of the species and has expressed surprise that apparently nobody else is.

Almost certainly, therefore, my capture on 18.v.92 of two specimens on the Lawson Cypress hedge between my garden and the next (mentioned in *Ent. Rec.* **103**: 296) and another on the 26th, is the first in Kent and the London suburbs. The first was taken by the simple expedient of brushing a bunch of the cones over an open hand — a habit I had formed some while ago in the hope of turning up *Orsillus* in this district, so it is probably the case that the insect had not long taken up residence here.— A.A. ALLEN, 49 Montcalm Road, Charlton, London, SE7 8QG.

TEMPORARY PREY-SPECIALISATION ON MIGRANT BUTTERFLIES BY BLUECHEEKED BEE-EATERS

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Introduction

During much of March and April 1991 all of Botswana saw a mass migration of *Catopsilia florella* Fabricius. It was certainly the largest such migration since the so-called "great migration of 1966", and it may well have been the largest this century. A very conservative estimate was that the migration contained 1.5 billion *C. florella* and about 50 million "fellow travellers" in the form of *Eurema brigitta* Stoll, *Belenois aurota* Fabricius, *Danaus chrysippus* Linne, *Byblia ilithyia* Drury, and *Junonia hierta* Fabricius. Large-scale migrations of *C. florella* are not frequent south of the Zambezi (Larsen, 1992).

Bluecheeked Bee-eaters and the migrants

At Drotsky's Cabins, Shakawe, on the Okavango River, in the extreme north-western corner of Botswana, Jan Drotsky kindly took me out on the river to a point where a flock of over a dozen Bluecheeked Bee-eaters (*Merops persicus*) were hunting. Bee-eaters are well-known to feed on butterflies. In fact, McLean (1985) considers the Whitefronted Bee-eater (*Merops bullockoides*) to be a butterfly specialist. The European Bee-eater (*Merops apiaster*) has even been observed catching migrant Painted Ladies (*Vanessa cardui*) aboard a ship at sea (Larsen 1989).

The flock was actively hawking the migrant butterflies as they were crossing the river. This had been going on for many days and there was no doubt that they had temporarily specialised in this abundant source of food. Their method of attack was always the same. They would swoop down along the western bank of the river and approach the prey from slightly below and then close their beaks with a sharp click, clearly audible at a distance of 30 metres or more. If a butterfly was caught, it would be manipulated in the beak while the bird was on the wing, until it was placed right for swallowing. Since this took some time, it was not unusual to see four to six Bee-eaters with butterflies in the beak at the same time. We attach some importance to this behaviour as an indicaton of temporary specialisation since this particular species usually alights with the prey, bashes it against a branch, and generally assesses its quality before eating it.

The success rate of the birds was not impressive, certainly no more than 20-30 per cent of all attacks, but *C. florella* is a powerful butterfly with a bounding flight. Thus, it was not unusual to see an individual butterfly running a gauntlet of sequential attacks by three or four bee-eaters, but they were never pursued over land. McLean (1985) states that 85 per cent of sorties by Bluecheeked Bee-eaters are successful, a figure that to me seems

on the high side. Even then, it would seem that the birds accepted a prey with a relatively low success rate. Two possible explanations, or a combination thereof, come to mind. One, that the predictability of the prey behaviour meant less expenditure of energy than would have been the case with less predictable prey, and, two, that the familiarity with the prey obviated the time-consuming return to a perch to consume it.

During our fifteen minutes of observation we saw at least 20 successful attacks on *C. florella* and one on another species of butterfly, but it was quite impossible simultaneously to follow all the birds. We saw pursuit of no other prey, though wasps, carpenter bees, and dragonflies were common.

Though a colony was present, we did not see the Whitefronted Bee-eater catching migrants; those seen hunting were preying on insects flying much higher than the migrants. Appropriately enough, we also saw a Little Bee-eater (*Merops pusillus*) take a Small Grass Yellow (*Eurema brigitta*), with almost the same relative proportions between predator and prey.

The Bluecheeked Bee-eater is a summer visitor to Botswana and is particularly fond of the Okavango River and Delta. Inquiries showed that similar behaviour had also been observed in many other places near Shakawe, in Etsha 6, at Maun and near Gaborone.

Other birds as predators of the migrants

Apart from Bee-eaters, I saw occasional successful attacks on the migrants by Fork-tailed Drongoes (*Dicrurus adsimilis*) and by Lilac-breasted Rollers (*Coracias caudata*), but these two birds, though common, are not very numerous and may well prefer to stay with their normal prey, which would also be abundant at the time. This may have been the case also with the Whitefronted Bee-eaters. The migratory flocks of Bluecheeked Bee-eaters wander through the Okavango all summer and may well be more opportunistic in choice of prey.

Many people I met commented spontaneously on the lack of predation. However, the speed and the bounding flight of the migrants are such that they probably quite simply are suitable prey only for highly specialised, and quite large, aerial predators of the type mentioned.

Acknowledgements

The observations were made during field work in preparation for a book on the Butterflies of Botswana and their natural history, with support from the Carlsberg Foundation of Denmark, for which I am most grateful. Ted Bartlett, Doline Bridges, Jan Drotsky, Dawn Riggs and others kindly provided help and information in Botswana. My wife is tolerant enough to accept my long absences.

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Hazards of butterfly collecting — Morogoro, Tanzania 1977

Africa is a splendid place for anyone interested in butterflies. The high mountains of East Africa are of especial interest since they are populated by montane species which, in effect, live at high levels in isolated colonies much as if they inhabited islands in an inhospitable sea. Any visit to a high East African mountain is therefore an interesting one, and this is very much true for the Uluguru Mountains, towering above the small sleepy town of Morogoro in Tanzania.

I checked into the Hotel Acropole in Morogoro at dinner time. East Africa is generally less kind to the gastronome than to the entomologist. Getting any type of edible meal is sometimes difficult. The tattered menu of the Hotel Acropole was laconic:

Soup of Day
Roast of Chicken
Salad of Fruit

Not the most adventurous of menus, perhaps, but it turned out to be quite acceptable. The chicken was not too stringy. Cold beer was to be had. The mosquito nets in the room were reasonably undamaged. Not too bad. Information on how to get up the mountain was not easy to come by. No, you could not go by car. Yes, you could spend the night at "Morningside", a colonial mansion that had figured in the Anglo-German battles in East Africa during the 1914-1918 war.

I hired some kids to guide me up the next morning. It was a hard and time-consuming climb. The forest was shrinking fast on this side of the mountains and nothing was to be seen during the climb. I was less than amused when on arrival at Morningside I saw a CD registered VW Beetle parked outside. "You mean you actually walked all the way up?", said the first secretary from one of the embassies in Dar-es-Salaam. His secretary, or someone else's wife (I never found out — it could have been both, of course), was even more impressed. Cold beer was offered. Morningside was a popular place for amorous trysts. I had wasted more than three hours and a lot of energy on an unnecessary walk. Local advice on how to get to forests is nearly always bad.

I had hoped to find out why the males of one of the skippers of the montane forests had antennae that were white enough to figure in a TV ad

on detergents but did not succeed (I still want to know). Lots of butterflies were about, though, and I spent a very pleasant night. Next morning was devoted to collecting and many interesting butterflies were found. Not too bad — it is rare enough even to have time to assemble a butterfly net when on a business trip.

A slow descent in the afternoon, again on foot since a car could not be summoned, took me back to the Hotel Acropole. The menu was the same as the night before, and it was the same for lunch the next day.

I took a closer look when the same menu appeared for the third time. It was dated 12 January 1966! Every day for more than eleven years this menu had been served for lunch and for dinner at the Acropole. With an average of eight clients per meal, this makes some 50,000 servings of the same meal. It was not bad. It could be better. No doubt they are still working on it . . . practise makes perfect.— TORBEN B. LARSEN, 358 Coldharbour Lane, London SW9 8PL.

***Elaphria venustula* (Hübn.) — new to the Isle of Wight**

On 13th June 1992 I took a specimen of *Elaphria venustula* Hübn. at m.v. light in the garden at Freshwater which is the first to be recorded on the Isle of Wight. It does occur locally on mainland Hampshire and this record may be further evidence that it is slowly increasing its range.— S.A. KNILL-JONES, Roundstone, 21 School Green Road, Freshwater, Isle of Wight.

First Irish record of *Archanara geminipuncta* (Haworth, 1809) (Lep.: Noctuidae)

On the evening of 13th August 1991 a male Twin-spotted Wainscot *Archanara geminipuncta* (Haworth) was taken at m.v. light trap at the head of the Douglas River estuary, mid-Cork (Irish Grid Reference W700700). According to Skinner (1984, *Colour identification guide to moths of the British Isles),* this species, which feeds on common reed (*Phragmites australis*) is confined in the British Isles to southern and eastern England, and also occurs locally along the coasts of South Wales. In Britain it is considered a rare species, being placed in category RDB3 by Shirt (1987, *British Red Data Books:* **2**: Insects).

This is the third species of Lepidoptera, which feeds on, or in, *Phragmites,* to be added to the Irish list since the beginning of 1989; the others being *Cosmopterix lienigiella* (Lienig & Zeller, 1839) (Cosmopterigidae) (Bond, *Bull. Ir. biogeog. Soc.* **14** (1); 24-27) and *Chilodes maritimus* (Tauscher, 1806) (Noctuidae) (Bond, in press, *Ir. Nat. J.*); suggesting that this habitat has been somewhat overlooked by Irish lepidopterists up to now.

Unfortunately, parts of the Douglas River reed-beds, close to the site of capture, in the south-eastern suburbs of Cork city, have recently been destroyed by road construction.— K.G.M. BOND, Zoology Department, University College, Cork, Eire.

FARTHER AFIELD — TOGO

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DESPITE the financial and other benefits tourism can bestow upon a country, many discourage tourists; for the entomologist there may be additional difficulties associated with having to obtain a permit to collect specimens, and a further one to export them; it may be even worse. Thus for Ecuador there is a three-page document informing you how to apply for a licence to collect a few insects, providing you are a "natural or legal person". You will have to pledge to hand over any duplicates, produce five copies of the results of your research, a photocopy of your passport, a certificate of research from your sponsor plus a further certificate from a higher national research institute in Ecuador. You must also forward a detailed plan under thirteen headings of your operations. When you come to move your specimens, if ever you reach that stage, you will need an appropriate "internal transportation permit" from the nearest office of the Ministry of Agriculture and Stockfarming. After that you must apply for an export licence. From where? You are not told; does it really matter?

The Togolese Embassy in London was helpful and I was informed that I would be free to collect insects, and this was confirmed by the customs officials in Lomé; also no visa was required.

Although the coastal rainforest belt of West Africa is absent from Togo due largely to the alignment of the coast parallel with the rain bearing winds, inland the Atakora Mountains along the Ghanaian border attract sufficient precipitation to sustain dry semi-deciduous forest (C. Martin, 1991), although only the isolated Agou Peak reaches an altitude of 3,000 ft.

For most of September 1990 and January 1991 I made a daily journey of four or five miles from Kpalimé by bus or communal taxi into the highlands, to the customs post or beyond, the vehicles not leaving until filled to somewhat more than intended capacity. My first visit to Togo was during the short dry season — hot and very humid; in January the mountains were no longer visible from the town, being enshrouded in Saharan dust brought by the harmattan, and the air was comparatively dry, these conditions prevailing for several days at a time when butterflies were not much in evidence until about 11 o'clock when the sun was high enough in the sky to pierce the gloom.

From a distance the mountains appear forested, but this is an illusion caused by the numerous trees comprising cacao and teak plantations, groups of mango trees and banana plants, and trees left as cover for coffee. I was able to find only minuscule patches of forest in ravines or alongside little streams; larger patches were to be seen clothing the steepest slopes, but were virtually inaccessible.

Along the mountain road leading to the frontier were a number of favourable spots where butterflies abounded. Black and white *Neptis*

species glided gracefully to settle open-winged upon roadside trees and bushes, but how often a specimen which appeared perfect was found to have one wing marred by a small chip! Other similarly marked Nymphalids behaved in an identical manner — *Neptidopsis ophione* Cram., *Pseudoneptis ianthe* Snellen, both very common, and the occasional *Eurytela hiarbas* Drury with a much broader white band than the subspecies I have encountered in Natal. Other graceful gliders included the bluish-grey *Ariadne enotrea* Drury, the larger, swifter *Pseudacraea lucretia* Cram, and *Cymothoe caenis* Drury, the cream-coloured males being more in evidence than the larger black and white females.

The spectacular *Salamis parhassus* Drury with its mother of pearl lustre was often disturbed, to fly to a nearby roadside bush where it would seem suddenly to disappear; less frequently encountered were the somewhat similar *S. anacardii* L. and the magnificent blue *S. cytora* Dbldy. Surprisingly few Pierids were seen apart from the delicate little *Leptosia alcesta* Stoll, in appearance and flight resembling the European wood white (*Leptidea sinapis* L.), but always to be carefully examined as other very similar *Leptosia* species were present, but much less frequently, and the little yellow *Eurema hecabe* L. Although these were usually readily identified, the somewhat larger and faster flying *E. senegalensis* Bsdv. was also present, an insect recently raised to specific status, and having a more limited distribution than *hecabe*.

Wasteland and roadside verges in Africa and S.E. Asia are the home of some *Precis* species which skim close to the ground and settle frequently upon it or upon wayside flowers. Seven species were encountered, the orange and brown *P. terea* Drury being by far the commonest; *P. octavia* Cram. was scarce and seen only as the pink wet season form, usually feeding at *Lantana* blossom. Midway through September *Vanessa cardui* L. appeared, but in very worn condition; it would seem that *cardui* is rare or absent for most of the year in West Africa to appear suddenly in September, having migrated from Europe (Williams, 1958).

The almost sunless forest interior was the home of a number of species of Nymphalids and Satyrids, most of which flew close to the ground, the latter usually quickly disappearing beneath the dark-leaved ground vegetation. Cacao and other plantations with shady interiors were frequently similarly inhabited, sometimes with the addition of small colonies of the Danaids *Amauris egilaea* Cram., the very similar *A. tartarea* Mab. and the large black and white *A. niavius* L., and less commonly the large Satyrid *Elymnias bammakoo* Wwood., a mimetic species, probably of the distasteful *Bematistes epaea* Cram. female (Acraeidae). *A. niavius* was by far the commonest large black and white butterfly, its mimics *Hypolimnas dubius* P. de Beauvois and female *Papilio dardanus* f. *hippocoonides* Haase were only occasionally seen; the latter were invariably worn, yet the much commoner males sometimes caught in full flight were usually perfect, and they have tails! Presumably the females become damaged as they seek

sites for egg laying in the forest, whereas the males fly only in the open or visit flowers for nectar.

The Nymphalids which glided close to the forest floor mainly comprised species of *Euphaedra,* large spectacular insects, black with a bluish sheen and an orange patch on the forewing, and the smaller *Euryphene* and *Bebearia* species, their males possessing either a blackish and deep orange-brown spotted pattern, or a beautiful deep blue hue, the larger females being mottled in brown and cream, and *Cynandra opis* Drury with its brilliant blue males. All these insects were exceedingly difficult to obtain in perfect condition, almost invariably suffering damage in the region of the tornus and dorsum of the hindwing, and if both hindwings were affected the damage was never symmetrical.

These species spend much time resting open winged upon the forest floor, and when disturbed either fly to a new resting place a few yards away or dive into the ground vegetation to settle again on the ground, but in a more inaccessible spot. Curiously, some other Nymphalid species which skim close to the ground and settle frequently upon it, but in open situations, e.g. *Hamanumida daedalus* Fab. are only rarely damaged thus.

I thought that lizards might be the main cause of these lesions, but they were very rarely encountered in that habitat.

However, bait of over-ripe fruit I placed on the ground at the edge of the forest behind my hotel at Biscucuy, Venezuela, had to be visited frequently to drive away lizards — and they were not there for the fruit. At Kpalimé in September the large Satyrid *Melanitis leda* L. visited the hotel and shop lights in the evening. After fluttering around the light they would settle, wings erect, the large upperside eye-spot obscured, but the usual Satyrid series of underside hindwing spots visible, two medium sized ones and four small ones on a highly cryptic wing pattern, but which contrasted strongly with a white wall. Almost immediately a small lizard would appear directly behind the butterfly; if the latter should give a brief wing flutter and change its position slightly, so did the lizard. I collected several specimens of *leda* — they were all perfect, and those I saw that were not perfect were just worn. It appeared that the *leda* were not attacked — too large? A similar forest floor Satyrid is *Gnophodes betsimena* Bsdv. When disturbed they quickly flew into the ground vegetation to again settle upon the forest floor, wings erect and virtually invisible, having a cryptic underside with the eye-spots reduced to minute dots; they too even if worn lacked wing damage in the tornal region.

September and January revealed quite different aspects of the Acraeidae. In the former month four species were common, *Acraea eponina* Cram. and *A. lycia* Fab. frequenting lowland waste ground, even in the town centre; the other two were found in the highlands, the large, brightly coloured *A. egina* Cram. usually encountered feeding at the topmost blossoms of a ten-feet high shrub adorned with huge sunflowers, whilst the diminuitive *A. bonasia* Fab. inhabited clearings and edges of the

little patches of forest, often congregating upon polluted damp ground. In January only this species of the four was seen; *A. egina* was replaced by the somewhat similar *A. pharsalus* Ward, a forest insect found along with *A. alciope* Hew., *A. lycoa* Godt. and *A. jodutta* Fab. a member of the black and white mimicry complex which includes *Bematistes epaea.* Other species of the genus *Acraea* were encountered, but only as casuals, although in the forest several species of *Bematistes* formed little colonies usually settled upon the bare stems of lianes or flying lazily about, always to fly higher up the steep mountain side when disturbed.

Acraea encedon L., a common and widespread species in Africa was not seen. It is another species that recently has been split, and one of the new species is *A. lycia,* so far recorded from Guinea-Bissau to Cameroun (D'Abrera, 1980). Comparing my *lycia* from Togo with a series of *A. encedon* I caught in Natal, I find a distinct difference in the shape of the forewing which is more protracted in *encedon,* causing the wing to appear narrower. D'Abrera depicts *lycia* as being of a sickly whitish colour; most of the specimens I came across could be described thus, but a number resembled the dull brown form of *encedon, infuscatoides* le Doux; like *encedon* the new species appears to be polymorphic.

The banks of little forest streams often attracted assemblies of butterflies which usually included *E. hecabe,* such Lycaenids as *Azanus isis* Drury, *Castalius carna* Hew. and several *Anthene* species, and less often swallow-tails, usually *Papilio nireus* L., *Graphium angolanus* Goeze and *G. leonidas* Fab.; the commonest swallow-tail, *P. demodocus* Esp., being absent from such parties.

Danaus chrysippus L. was seen not infrequently, but only as f. *alcippoides* Moore with white hindwings. Much less common were female *Hypolimnas misippus* L., but in its normal form with brown hindwings.

Perhaps the most memorable sight was to watch the large, brilliant blue males of the Lycaenid *Epitola posthumus* Fab. hurtling around a forest clearing in a wonderful display of aerobatics punctuated by dazzling flashes of blue. Several smaller species performed with less spectacular displays, whilst the deep blue Hesperiid *Coeliades chalybe* Wwood. provided an unforgettable picture of exquisite beauty when resting open-winged upon a leaf in the dappled sunlight of a forest clearing or darting away to a fresh location.

I frequently met Africans with butterfly nets which they wielded with amazing accuracy; two separate enterprises were engaged in collecting for the American and European markets in papered specimens, their depredations being negligible compared with the devastating effect of the removal of forest. However, it is undoubtedly this trade, especially of butterflies, that has caused the difficulties one meets in some countries.

In September and January several interesting features of the butterfly fauna of this region became apparent — the preponderance of Nymphalids, especially the forest floor species of *Bebearia, Euphedra* and

Euryphene, the paucity of Lycaenids, Hesperiids and the Pieridae apart from five common species, and the difficulty of catching the forest Satyrids due to their immediate disappearance into the ground vegetation, which behaviour probably accounted in part for their worn and tattered appearance.

Below are listed the species identified; many other species were seen, but eluded capture and certain identification, and the list hardly reflects the wealth of the butterfly fauna.

The species identified could be categorised according to their distribution in several ways; a simplified arrangement is as follows:-

(a)	Species widespread in Africa	32%
(b)	Species found in West Africa and Central Africa	56%
(c)	West African species, including Cameroun	10%
(d)	Species restricted to Ghana to Nigeria	2%

Butterflies noted in Togo, West Africa

Papilionidae
Papilio dardanus Brown
Papilio bromius Dbldy.
Papilio socia Rth.& Jdn.
Papilio nireus L.
Papilio menestheus Drury
Papilio demodocus Esp.
Papilio zenobia Fab.
Papilio cynorta Fab.
Graphium angolanus Goeze
Graphium leonidas Fab.
Graphium policenes Cram.

Pieridae
Catopsilia florella Fab.
Eurema hecabe L.
Eurema senegalensis Bsdv.
Nepheronia argia Fab.
Nepheronia pharis Bsdv.
Belenois calypso Drury
Belenois hedyle Cram.
Appias epaphia Cram.
Mylothris chloris Fab.
Mylothris poppea Cram.
Mylothris rhodope Fab.
Leptosia alcesta Stoll
Leptosia marginea Mab.

Danaidae
Amauris niavius L.
Amauris tartarea Mab.
Amauris egilaea Cram.
Danaus chrysippus L.
Danaus petiverana Dbldy.

Acraeidae
Bematistes epaea Cram.
Bematistes vestalis Feld.
Bematistes alcinoe Feld.
Bematistes umbra Drury
Acraea neobalae Dbldy.
Acraea quirina Fab.
Acraea eugenia Karsch
Acraea peneleos Gr.-Smth.
Acraea pharsalus Ward
Acraea bonasia Fab.
Acraea acerata Hew.
Acraea eponina Cram.
Acraea alciope Hew.
Acraea jodutta Fab.
Acraea lycoa Godt.
Acraea lycia Fab.
Acraea natalica Bsdv.
Acraea egina Cram.
Acraea abdera Hew.

Satyridae
Gnophodes betsimena Bsdv.
Melanitis leda L.
Elymnias bammakoo Wwood.
Bicyclus vulgaris Btlr.
Bicyclus dorothea Cram.
Bicyclus sandace Hew.
Bicyclus sanaos
Bicyclus sylvicolus Cond.
Bicyclus madetes Hew.
Bicyclus funebris Guér.
Bicyclus taenias Hew.
Ypthima doleta Kirby

Nymphalidae
Phalanta phalantha Drury
Hypolimnas misippus L.
Hypolimnas salmacis Drury
Hypolimnas dubius Pal. de Bvs.
Salamis cytora Dbldy.
Salamis anacardii L.
Salamis parhassus Drury
Precis orithyia L.
Precis sophia Fab.
Precis stygia Aur.
Precis chorimene Guér.
Precis terea Drury
Precis octavia Cram.
Precis pelarga Fab.
Vanessa cardui L.
Byblia ilithyia Drury
Mesaxantha ethosea Drury
Ariadne enotrea Cram.
Nepotidopsis ophione Cram.
Eurytela dryope Cram.
Eurytela hiarbas Drury
Cyrestis camillus Fab.
Neptis metella Dbldy. & Hew.
Neptis nemetes Hew.
Neptis serena Overlaet
Neptis conspica Neave
Neptis melicerta Drury
Neptis puella Aur.
Harma theobene Dbldy
Cymothoe caenis Drury
Euryphene simplex Staud.
Euryphene ampedusa Hew.
Bebearia tentyris Hew.
Bebearia mandinga Feld.
Bebearia oxione Hew.
Bebearia sophus Fab.
Bebearia theognis Hew.
Euphedra harpalice Cram.
Euphedra medon L.
Euphedra cyanea Holland
Euphedra themis Hübn.
Euphedra justicia Staud.
Euphedra ceres Fab.
Euphedra afzelii Feld.
Euphedra ruspina Hew.
Hamanumida daedalus Fab.
Aterica galene Brown
Pseudoneptis ianthe Snellen
Cynandra opis Drury
Catuna erithea Drury
Catuna angustatum Feld.
Pseudacraea lucretia Cram.
Charaxes paphianus Ward
Charaxes lucretius Cram.
Charaxes eupale Drury
Charaxes tiridates Cram.

Lycaenidae
Pentila pauli Staud.
Ptelina carnuta Hew.
Telipna semirufa Gr.-Smth & Kirby
Mimacraea darwinia Btlr.
Mimeresia libentina Hew.
Citrinophila similis Kirby
Larinopoda aspidos Druce
Tetrarhanis diversa Bt.-Bkr.
Epitola uniformis Kirby
Epitola posthumus Fab.
Epitolina catori Bt.-Bkr.
Hewitsonia similis Aur.
Lachnocnema bibulus Fab.
Oxylides faunis Drury
Hypolycaena antifaunis Wwood.
Hypolycaena lebona Hew.
Iolaphilus alcibiades Kirby
Anthene lunulata Trim.
Anthene larydas Cram.
Anthene lysicles Hew.
Lampides boeticus L.
Leptotes pirithous L. complex
Phlyaria cyara Hew.
Castalius carana Hew.
Azanus isis Drury
Eicochrysops malathana Badv.
Lepidochrysops quassi Karsch
Lepidochrysops synchremetiza Bt.-Bkr.
Thermoniphas micyclus Cram.
Oboronia pseudopunctatus Strand
Athysanota ornata Mab.

Hesperiidae
Coeliades chalybe Wwood.
Caelorrhinus galenus Fab.
Caelorrhinus proxima Mab.
Tagiades flesus Fab.
Eagris lugens Rogershf.
Eagris denuba Plötz
Sarangesa thecla
Protocampa raya Holland
Paradaleodes incerta Snellen
Paradaleodes sato Wwood.
Osmodes laronia Hew.
Andronymus caesar Fab.

The species listed were identified on external characters, and therefore such critical species as some of the genus *Neptis* and *Acraea lycia* have not had their identity confirmed by examination of genitalia.

References

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New moth records, and a wasp, from Fair Isle

Apart from the results of a short survey on 16th August - 2nd September 1955 (Hardy, 1956) and a few casual records of moths attracted to lighted windows, virtually nothing was known of Fair Isle's moth fauna until 1987 when a m.v. trap was installed at the Bird Observatory (Sellar, 1987). This was operated on all nights that the isle's famous weather permitted from 22nd July to early November that year and from 29th March until 23rd August 1988.

No trapping was done in 1989, but in 1990 a Heath actinic trap was run at Schoolton, 2km south of the Observatory while at the Observatory the m.v. trap was again in action, one or both traps being operated on all suitable nights between 6th July and 30th October. Trapping was repeated in 1991 at both sites, between 13th June and 15th October. In exactly 250 trap/nights during these four years we have begun to develop a good understanding of the relative abundance and periods of occurrence of common Fair Isle moths and of annual and site-related variations in species abundance and frequency. The results of each year's trapping programme have been published in the Fair Isle Bird Observatory Reports for 1987, 1988, 1990 and 1991 respectively. This note, however, brings to the attention of a wider readership those findings which constitute new faunal records.

A total of nine species trapped at Fair Isle appear to constitute northward extensions of the known British range. A series of 1991 captures of species not included in the *Moths and Butterflies of Great Britain and Ireland* as occurring north of Orkney were Black Rustic, *Aporophyla nigra* (two on 10th September), Satellite, *Eupsilia transversa* (14th October), Large Ear, *Amphipoea lucens* (4th August), Ear Moth, *Amphipoea oculea* (3rd September) and Mouse Moth, *Amphipyra tragopoginis* (six records: 1st, 5th, 8th, 18th, 21st and 27th September). In addition, a Red-green Carpet, *Chloroclysta siterata,* a species not recorded in Skinner's *Moths of the British Isles* as occurring north of Orkney was trapped on 18th September 1991 and an Autumn Green Carpet, *C. miata,* given by Skinner (*op. cit.*) as only doubtfully recorded from the Northern Isles, on 30th September 1990. However, Ian Lorimer (in litt.) informs us that there are Orkney records of *C. miata,* including voucher specimens placed in the British Museum (Natural History) by himself.

Four other species have been recorded which, according to a recent unpublished list of Shetland Lepidoptera drawn from all known sources and references by M.G. Pennington, have not occurred in Shetland. They are Small Fan-footed Wave, *Idaea biselata,* Juniper Pug, *Eupithecia pusillata,* the tortricid *Eucosma cana* and the pyralid *Dioryctria abietella.* The Juniper Pug is common in more sheltered areas of moorland and two were trapped in August 1988. Its presence is not unexpected as Fair Isle is a major site for a form of its foodplant Prostrate Juniper, *Juniperus communis nana.* Elsewhere in Shetland Juniper is rare and local (Scott & Palmer 1987). A total of 25 *Eucosma cana* were trapped in 1988, identified by M.G.W. Terry and a specimen retained on Fair Isle. The Small Fan-footed Wave was trapped on 22nd July 1987. The *Dioryctria abietella,* caught by hand on 1st August 1991, arrived during a period of easterly winds.

Other interesting records included Fair Isle's first Convolvulus Hawkmoth *Agrius convolvuli* on 3rd September 1988 and Bedstraw Hawkmoths *Hyles gallii* on 29th July 1990 and 25th July 1991 (only previous record, 29th July 1974).

Less expected was the capture, on 22nd August 1991, of a drone Norwegian Wasp, *Dolichovespula norwegica.* This constitutes the first wasp of any species recorded on the isle.

Acknowledgements

We are grateful to Ian Lorimer for confirming and in some cases identifying moths trapped in 1991, Isobel Baldwin of the Royal Museum of Scotland, Edinburgh, for confirming our wasp identification, Mike Pennington for information regarding Shetland records and Mike Terry for identifying difficult micro moths. We owe a special debt of thanks to Pat Sellar and Brendan O'Brien for supplying both equipment and encouragement.

References: Hardy, D.E., 1956. The lepidoptera of Fair Isle. *Entomologist* **89**: 261-269. Scott, W. & Palmer, R., 1987. *The flowering plants and ferns of the Shetland Islands.* The Shetland Times, Lerwick. Sellar, P.J., 1987. Light trap on Fair Isle. *Entomologist's Rec. J. Var.* **100**: 45.— NICK RIDDIFORD and PAUL HARVEY, Fair Isle Bird Observatory, Fair Isle, Shetland ZE2 9JU.

***Eupithecia millefoliata* Rössler (Lep.: Geometridae) in Suffolk**

With reference to the records of this species from Norfolk and Cambridgeshire (G.M. Haggett, *antea*: **104**: 156-7), I can add a record from west Suffolk. On several occasions in September and October 1991 I noted larvae rather commonly in the heads of yarrow at Icklingham. On one occasion I was with Drs M.W. Harper and A.N.B. Simpson, on another with Dr J.R. Langmaid, all of whom also saw the larvae. The determination has been confirmed by rearing the adult.— A.M. EMMET, Labrey Cottage, Victoria Gardens, Saffron Walden, Essex CB11 3AF.

SOME NOTABLE DIPTERA FROM OXLEAS WOOD SSSI, SHOOTERS HILL, N.W. KENT

A.A. ALLEN

49 Montcalm Road, Charlton , London SE7 8QG.

THE FOLLOWING annotated list brings together the more interesting species of Diptera (excluding Nematocera), or those notable for one reason or another, met with mostly in the last several years, by the writer in this fine piece of old woodland. Having regard to its location in the south-east suburbs of London, it has been found to possess a far from insignificant fauna at all events in certain groups of both invertebrates and plants, and was declared a Site of Special Scientific Interest in 1986. (It is all the more ironic, therefore, that the fate of the eastern portion — containing many of the older trees — even now hangs in the balance.) The area worked is bounded on the north by the Shooters Hill Road, on the south by the A2 motorway, on the east by housing and on the west by Eltham Common and more housing. The western and especially the central parts are broken up by open spaces and two small parks. I would stress that collecting has been more opportunistic than systematic, no trapping has been done, and parts of the area remain relatively unexplored. Some of the best I find to be marginal, e.g. close to the Shooters Hill Road.

The difficulty in compiling any such list is to know what species to leave out. Inevitably, a good many will lie on the borderline of notability, and to keep the list within reasonable limits ought perhaps to be excluded. I have, however, thought it best to include species which, while not considered nationally rare or even uncommon overall, are evidently so in this district — if not also elsewhere in the environs of London. This will serve to underline the fact (often insufficiently realised) that many species usually regarded as common can be very local, rare, of even apparently non-existent in certain districts; whereas others, generally considered rare, are acually far from being so everywhere.

Some groups, which one would expect to be well represented in old woodland, appear peculiarly poor in species; such are the large genera *Empis* and *Rhamphomyia, Cheilosia,* and the families Tachinidae to Calliphoridae. Very many more species in these and other groups must surely be present than have yet been found.

A few of the records are already published, but are repeated here for the sake of completeness, with the original record cited. Nomenclature follows Kloet & Hincks (ed. 2), 1976, with few exceptions.

Frequent mention is made of "the hollow oak". This is a healthy tree of moderate size whose partly hollow trunk is filled to the height of several feet with wood-mould, usually with some water in the cavity; above this some of the decayed heart-wood is exposed.

STRATIOMYIDAE

Beris morrisii Dale.— Rather scarce, mainly found in the western sector (v-vi) by sweeping grass under trees, occasional elsewhere. A typical woodland species, apparently more plentiful in the Lesnes Woods (Abbey Wood) some five miles to the east.

Chorisops nagatomii Rozk.— Has occurred twice: 8.ix.84 off maple (Allen, 1985), and 18.viii.85 off young hornbeam; the "common" *C. tibialis* (Mg.) is hardly less scarce.

Sargus bipunctatus (Scop.).— Occasional at Oxleas. Not uncommon in the district in gardens; an autumn species.

Pachygaster tarsalis Zett.— A female of this rare species flying to and settling on the hollow oak (see above), which may well be a breeding site, 29.vii.90.

ASILIDAE

Dioctria linearis (F.).— In July 1986 a very few were swept in both the eastern and western ends of the wood; another at edge of ride, 13.vi.88. (The common *Dioctria* of the district is *baumhaueri* Mg.).

EMPIDIDAE (s.l.)

Drapetis ephippiata Fall.— An example of this distinctive little species swept off grass under an oak, 9.ix.85, is the only one I have met with anywhere in the district; possibly a new record for Kent, or if not, for the metropolitan area.

Platypalpus aristatus (Coll.).— General but sparing, mostly singly (v, vi). One of the less-recorded species of this large genus, which is, however, not rare in this district. New to Kent?

P. candicans (Fall.).— A small female swept under oaks on the western sector with *P. verralli* &c, 1.vii.83; very rare hereabouts.

P. clarandus (Coll.).— Frequent, mainly vii-ix; not however regarded as a common species.

P. leucocephalus (v. Roser).— One from shrub in lane, 24.vi.74. An uncommon species which I used to take at Blackheath in the 1960s but have not seen of late.

P. optivus (Coll.).— Very local and rare; a few at one spot on the western fringe of the wood, 1.vii.85, and one more on the 6th.

P. pectoralis (Fall.).— Very rare; a specimen on foliage by a stream, 18.viii.79, is the only one I have taken anywhere. Evidently a woodland insect like *ciliaris* (Fall.) (local and erratic at Oxleas), though Collin (1961) does not mention this under either species.

P. verralli (Coll.).— A local species which I have found chiefly in the western portion of the wood, at intervals and mostly singly, since 1.vii.83. (For some obscure reason one or both wings are often buckled.)

Oropezella sphenoptera (Lw.).— Not altogether infrequent in the

eastern sector of the wood, along the edges of paths and rides, late May to mid-July 1988; scarcer the next year, and since. Probably the most interesting Empid yet found here; should be new to Kent and the London area; Collin gives six localities, all but one (Cambridge) in the western half of Britain.

Oedalea stigmatella Zett.— A female alighting on the base of the hollow oak (in which perhaps it had bred), 6.vi.88, is my sole capture of the species. (*O. holmgreni* Zett, and *O. flavipes* Zett. are frequent but sporadic.)

Euthyneura halidayi Coll.— Two females of this uncommon species in rotten birch, 7.vi.86; one by sweeping, 6.vi.88.

E. myrtilli Mcq.— A female off a guelder-rose bush, 16.vi.85. Elsewhere I have met with it only in Windsor Forest.

Rhamphomyia hirsutipes Coll.— Local but not rare where it occurs, in October, about young trees and herbage; as always, only males are to be found, and always in association with the common autumnal species *R. erythrophthalma* Mg., of which (the female of *hirsutipes* being unknown) it is probably a male mutant form as suggested by Collin (1961: 439).

Empis nigripes F.— "Very common [throughout Britain]" (Collin p.523). It is curious therefore that the only specimen I have been able to find anywhere in the district is a male swept in the wood, 7.vi.86. On the other hand *E. praevia* Coll., still a rarity when Collin wrote, has increased enormously and is now common probably over all of S.E. England.)

E. albinervis Mg.— A male on the western edge of the wood, 6.vii.85, and another male the next evening. The species is far from common hereabouts, occurring sporadically.

Hilara galactoptera Strobl.— One male swept over a muddy path with puddles, 16.vi.86; mainly a woodland species which must be quite scarce here. (The allied *H. litorea* (Fall.) with its silvery female can be locally common at Oxleas, while the distinctive *H. thoracica* Mcq. occurs singly over streams. The only other *Hilara* spp. I have from these woods are *anglodanica* Lundb. and *cornicula* Lw.)

Chelipoda vocatoria (Fall.).— One found, 6.vi.88, among some *Phyllodromia melanocephala* (F.) which it greatly resembles and which is locally very common at Oxleas in some years. An uncommon species, but proving to be very widespread.

Dolichocephala guttata (Hal.).— In a moist shady spot, 9.ix.85, one only. (Its congener *D. irrorata* (Fall.) is rather common in similar situations.)

Clinocera bipunctata (Hal.).— My sole capture of this species anywhere was of a female swept beside a watercourse, 11.viii.78.

DOLICHOPODIDAE

Dolichopus latelimbatus Mcq.— Occurs singly from time to time; widely dispersed over the district.

D. wahlbergi Zett.— Not infrequent by general sweeping but rather erratic; not in the shadiest parts as a rule, and only sometimes in wet places.

Hercostomus chalybeus (Wied.).— A male of this very local and uncommon fly swept from reed-grass (*Glyceria*) in the dried-up bed of a pond, 14.vii.89.

Medetera impigra Coll.— One or two on a sycamore post, perhaps breeding under the loose bark, 3.vii.86; further examples on the 18th.

M. oscillans Allen (=*apicalis* Lundb. nec Zett.??).— Females not rare on the cut surfaces of a large sawn-up oak at the woodland edge verging on the Shooters Hill Road , last week of June 1990. I was probably too late for the males, which must be short-lived. (It should be noted that the record of *M. jugalis* Coll. from "Abbey Wood, Kent" in Fonseca (1978: 47) is erroneous, the specimen being *oscillans* — the first one found, originally identified as *jugalis* by Mr Fonseca.)

M. pallipes (Zett.).— On trunks. Noted at Oxleas in the last two years only, perhaps overlooked earlier from its small size; said to be uncommon, but in this district seems general and quite frequent.

M. petrophiloides Par.— A female on the hollow oak, 29.vii.90, is my first find of the species.

M. tristis (Zett.).— One or two on the hollow oak in May or early June, 1986.

Systenus bipartitus (Lw.).— On the hollow oak, in some small numbers, late July and early August 1990.

S. leucurus Lw.— Similarly, but more frequent and can be found from mid- or late June, first seen 3.vii.86; also bred out of wet debris from the cavity.

S. pallipes (v.Ros.).— As above, but scarce and only found 1990 (first 11.vii).

S. scholtzii (Lw.).— Somewhat less frequent than *S. leucurus,* but not much; June-July, first 3.vii.86. Also bred out of the cavity with the latter.

S. tener Lw.— A few specimens caught at the tree, 1.viii.90 only. At Blackheath I once found several males in early August, so it seems the latest of the species to emerge.

(*Note:* It must be very unusual to find all five British species of this generally rare and elusive genus together on the same tree as was the case on 1.viii.90 — if indeed this has ever occurred before. None are new to this district, however; I have met with them all at Blackheath (cf. Fonesca, 1978, 63-4). The flies may be seen settled on the edges of the cavity and those parts of the trunk near it, on warm days, when they are active and often hard to secure — especially the males. The specific order of incidence at this site, beginning with the least rare, is, *leucurus, scholtzii, bipartitus, pallipes, tener.*)

Achalcus melanotrichus Mik.— In the cavity of the hollow oak in July, occasional; first taken there by Dr I.F.G. McLean who accompanied me to the wood on 18.vii.86, and subsequently by myself (1988, 1990).

Bathycranium bicolorellum (Zett.).— A male of this uncommon species swept in a small swampy area, 29.vi.88.

Neurigona quadrifasciata (F.).— Not at all common; by evening sweeping in the western sector, occasionally elsewhere. Not seen here on tree trunks, though I once witnessed the well-known courtship (?) performance of the males on a willow trunk in Maryon-Wilson Park, Charlton.

Argyra confinis (Zett.).— Two males alighting on the trunk of a fallen oak, 9.vii.88 (a habit I have not seen in the commoner species of the genus), are the sole examples to have come to my notice anywhere.

Chrysotimus concinnus (Zett.).— Occurs quite freely on ash, hazel, birch, etc. in two separate areas, one of them extensively; first noted July 1986. The species of this genus seem to affect trees and bushes gregariously.

LONCHOPTERIDAE

Lonchoptera tristis Mg.— Though this species is common in certain localities farther out from London, it seems extremely local here as I have found it only twice: several swept beside a watercourse, 11.viii.78; and one caught over a muddy path, 9.ix.85.

PLATYPEZIDAE

Opetia nigra Mg.— On 17.v.80 this seldom-noticed fly was not rare on young oak, hazel, hornbeam, etc at the edge of a ride, the colony occupying a rather small area. The species was not seen again until 9.vii.88 when a male was found on a leaf of oak at some distance from the first place.

Agathomyia antennata (Zett.).— Occasional males off trees (e.g. sallow) in June. (It used to occur in my former garden at Blackheath.)

Callomyia amoena Mg.— A male off aspen or young birch, 16.vi.85. (I have taken the handsome female in Greenwich Park.)

PIPUNCULIDAE

Chalarus pughi Coe.— A female by sweeping grass under oaks in the evening, western sector, 9.vi.78; two females and one male caught in another part of the area, probably parasitising the leaf-hopper *Eupteryx vittata* (L.) on ground-ivy (*Glechoma hederacea*), 13 & 16.vi.86. The male was unknown to Coe in 1966; my male resembles the females with which it was taken, so the suggestion that the unique *C. griseus* Coe might be the male of *C. pughi* is no longer tenable.

(*C. latifrons* Hardy and *C. fimbriatus* Coe have both occurred, the latter repeatedly; Coe (p.27-8) considered them general in southern England, but they are very irregular in this district, unlike the ubiquitious *C. spurius* Fall.)

(*Verrallia aucta* Fall., *setosa* Verr., and *villosa* v. Ros. have all occurred.)

Eudorylas subfascipes Coll.— A female swept under oaks in the evening, western sector 19.vi.78.

E. subterminalis Coll.— A male swept in a lately-cleared area with ruderal vegetation, 5.viii.86.

E. zonellus Coll.— Three (both sexes) swept from grass under trees, 13.vii.86; another (not near) on the 18th.

SYRPHIDAE

Sphaerophoria rueppellii (Wied.).— A male swept in the Jackwood (central) area, 29.v.77. The species had just begun to increase remarkably in this district for a number of years (cf. Allen, 1981).

Cheilosia variabilis (Panz.).— On and near a strong plant of figwort (*Scrophularia nodosa*) by a path, 27.v.88 and subsequently (Allen, 1989); extremely local and seen nowhere else in the district, which is why I include it here. The species is large and distinctive, and I have known it for half-a-century so could not well have overlooked it.

Ferdinandea ruficornis (F.).— On 29th June 1988 this rare hoverfly (Red Data Book category 2) was discovered to be breeding on a fallen oak infested towards the base by larvae of the goat moth, *Cossus cossus*. The more familiar *F. cuprea* (Scop.), very uncommon hereabouts, accompanied it but was the rarer of the two; no male of either could be found. The flies were to be seen only during sunny periods settling on the trunk, especially on sappy spots, up to 18th July after which dull weather prevailed. Larvae were present in a crevice where sap (probably diluted by rainwater) had collected, until by August it and the sap-flow had dried up — which must have put an end to the colony. Stubbs (1978: 235-6) records *F. ruficornis* as "only currently known from a few places in the New Forest", but I gather that it has occurred elsewhere since that was written. There is an earlier West Kent record (Dartford, in Coe, 1953: 45). *Cossus* trees must now be extremely rare in Oxleas Wood, the above being the only one I have ever come across there.

Myolepta luteola Gmel.— One at the hollow oak, 18.vii.88. First seen resting on the decayed heart-wood in the cavity, it eluded capture but was netted a little later whilst hovering in a patch of sunlight near the trunk. This should be the second Kent record (cf. Chandler, 1969: 170).

Sphegina clunipes (Fall.).— The only specimen I have yet encountered was a very dark female swept near hogweed flowers, 16.vii.88. Chandler (p.172) gives two Kent records only.

S. kimakowiczi Strobl.— A male swept from a clump of hedge-parsley (*Anthriscus*), 25.vi.86, was apparently the first capture in Kent (Allen, 1987b); another male at hogweed (*Heracleum*) umbels nowhere near the first site, 1.viii.88.

Parhelophilus frutetorum (F.)— Not uncommon at the side of a pond amongst reed-grass (*Glyceria*) in June-July; first found 10.vii.89. (The site appears suitable for other Helophilines but only *H. pendulus* has been noted there.)

Mallota cimbiciformis (Fall.).— On 18.vii.88 whilst I was keeping watch at the hollow oak an example of this fine fly appeared at the cavity entrance and immediately vanished. It was, however, later spotted on some young growths in the sunshine quite near the tree, but not taken. The species seems well established in the district as I have a short series from Blackheath (Chandler, p.190) and have seen one at Charlton (Allen, 1983). These appear to be the sole Kent records (Chandler, *l.c.*, where the flight period given, vii-viii, should rather be vi-vii). *(to be concluded)*

Nycteola revayana Scop. (Lep.: Noctuidae) in July

B. Goodey (*Ent. Rec.* **103**: 330) notes that 50% of his Essex records for this moth for the last five years have been in June and July, a period when the insect is in the larval stage according to the textbooks which unanimously quote August or September for the emergence of the adult insect.

N. revayana was not observed at my garden m.v. light from 1969 until 1983 when four hibernated specimens arrived in late May and early June, followed by a moth in October. In each of the following three years a singleton was noted in either April or October. However, in 1987 the pattern changed dramatically with the arrival of 17 specimens, followed by 12, 7 and 4 in the next three years. In each case more than 50% of the moths arrived in July, with a fairly even distribution throughout the month, and in 1990 one was noted as early as 25th June.

Goodey mentions that this species is bivoltine in the Isles of Scilly and suggests that perhaps with amelioration of climate this mode of behaviour might be spreading. However, I can find no evidence for this, e.g. second brood larvae being found in August or September, and presumably an emergence of some substance either in late September or October, or in spring. My figures for Dartford indicate no such occurrence. Indeed, over the nine years from 1983 to 1991 only three specimens have been observed in September or October, nor do the spring records support this contention.

For Essex Goodey does not recount the numbers of specimens observed, but if his figures are commensurate with mine, this is a phenomenon of some significance. Certainly there are July records prior to this period; Chalmers-Hunt (*Butterflies and Moths of Kent,* 1968) details three, and L. and K. Evans (*Macro-lepidoptera of Croydon and North-east Surrey,* 1973) give two, and doubtless others can be unearthed. This is of little consequence; it is the dimension of the Dartford (and perhaps Essex) figures which are of significance — almost 70% of the moths recorded from July to November are for July. It seems incredible that the authors of textbooks from the nineteenth century until today, two of whom have prepared books during the age of the m.v. light, should all be in error. If

not, the July emergence signifies a distinct change in the life cycle of this species in two localities, one perhaps covering a fairly large county; the immediate question being where else has this occurred? Secondly, there is the very difficult question — why has there been a forward shift in the time of emergence? This would surely require an amelioration of climatic conditions from mid-April until mid-June, i.e. the larval period. At Dartford, judging by the number of times the m.v. light was operated during this period from 1987 to 1991, conditions were only exceptional in the prevalence of cold weather, often with clear nights with the wind between N.W. and N.E. Only June 1988 provided good weather consistently throughout the month, although April 1987 was exceptional in having a very warm spell of weather. The possibiliity of the July moths being survivors from hibernation seems untenable due to the absence of records for June apart from the 1st and 3rd June 1983 and 26th June 1990 following specimens seen on 3rd and 4th May.

Without doubt Mr Goodey's observations have brought to light some intriguing questions.— B.K. WEST, 36 Briar Road, Dartford, Kent DA5 2HN.

An emergence of *Nycteola revayana* Scop. (Lep.: Noctuidae)

On 10th June 1992 at Colwick Park, Nottinghamshire (SK 613 396) I found some "boat-shaped" cocoons of *Nycteola revayana* on the underside of oak leaves.

A male moth emerged, without forcing, on 19th June. This very early date for a bred, rather than hibernated, specimen is interesting in the context of the note by B. Goodey (*Ent. Rec.* **103**: 330) on the dates of Essex records for this species, and the commentary by West in the current issue of the *Record*.— A.S. BOOT, 27 Buntings Lane, Carlton, Nottingham NG4 1GX.

Additions to the Kent Dolichopodid (Diptera) Fauna

The following species were not recorded from Kent by Fonseca (1978) and according to Mr E.G. Philp of the Kent Biological Archives (pers. comm.) have been unreported by subsequent entomolologists.

Dolichopus planitarsis Fallen 13.v.1989 Westbere Marshes. Obtained by sweeping coarse vegetation— *Phragmites, Junctus* etc in open fenland by River Stour.

Hercostomus chalybeus (Wiedemann) 22.vi.1983. Tonge Mill near Sittingbourne. Obtained by sweeping *Mentha aquatica* and *Carex* spp. in deep shade of alder carr.

Hercostomus gracilis (Stannius) Coastal in East Kent. 3.viii.1985 Sandwich; 24.vii.1988 Worth; 11.vii.1989 Aycliff, Dover.

Hercostomus nigriplantis (Stannius) 19.vi.1983 Thornden Wood, near Whitstable. Swept from *Junctus* sp. along damp woodland ride on acidic clay.

Hypophyllus crinipes (Staeger) In alder woods by chalk streams and rivers. 17.viii.1983 Stodmarsh NNR; 5.vi.1988 Holy Well, Folkestone; 20.v.1989 Grange Alders, Saltwood.
Rhaphium elegantulum Meigen. Obtained by sweeping *Junctus* sp. and grasses in damp woodland. 20.v.1989 Grange Alders, Saltwood; 24.v.1989 Down Wood, Chilham.
Schoenophilus versutus (Haliday) Single specimens swept from *Eleocharis* sp. 17.v.1989 Wickhambreaux Valley; 24.vi.1989 Lenham Heath Sand Pit.
Sciapus laetus (Meigen) 11.vii.1989 Craft Marsh, Sittingbourne. A pair swept from saltmarsh alongside Milton Creek.
Syntormon sulchipes (Meigen) 21.vi.1983 Hothfield Bogs. Several specimens swept from grass amongst sallows.
Teucophorus calcaratus (Macquart) 21.vii.1983. Oare Gravel Pits. A single specimen swept from *Typha* and *Phragmites* at margin of water-filled pit.
Teucophorus simplex Mik 18.vii.1983 Tonge Mill; 16.vii.1988 Brockhill Country Park, Saltwood. Swept from low vegetation in damp alder woods.
Thrypticus bellus Loew 20.viii.1983 Hacklinge Marshes near Deal. Coastal fenland. Swept from *Juncus*.

Reference: Fonseca, E.C.M. d'Assis; 1978 *Handbk. Ident. Brit. Insects* Vol. IX part 5. Diptera Orthorhappha Brachycera Dolichopodidae.—
L. CLEMONS, 14 St. John's Avenue, Sittingbourne, Kent.

Rothamsted Farmland Ecology light trap network: interesting Lepidoptera records, September to December 1991

Increased voltinism was generally less noticeable in autumn 1991 than in 1990 on the Rothamsted Estate. Cool wet weather in June caused the flight periods of many species to be delayed or protracted, making the interpretation of late records difficult. However, individuals of a few species were recorded which possibly represent partial second broods, including eight *Chrysoteuchia culmella* (Linnaeus) between 14.ix and 8.x. This species is usually considered to be univoltine, flying in June and July (Goater, B. 1986, *British Pyralid Moths. A Guide to their identification.* Harley, Colchester). *Chrysoteuchia culmella* is known to be migratory (Goater, *loc. cit.*). However, it is also considered to be univoltine in Continental Europe (Spuler, A. 1910. *Die Schmetterlinge Europas.* E. Schweizebart'sche, Stuttgart) and in the absence of records from elsewhere it is unlikely that these captures were of immigrants. The possibility of increased voltinism in this species has particular significance, as it is sometimes an agricultural pest (Carter, D. 1984. *Pest Lepidoptera of Europe.* Junk, Dordrecht). Interestingly, *C. culmella* was not recorded on the Estate in the autumn of 1990. Two *Colostygia pectinataria* (Knoch) were recorded (12.ix and 13.ix.). This species is known to produce an occasional partial second brood (Skinner, B. 1984. *Colour Identification Guide to Moths of the British Isles.* Viking, Harmondsworth).

One *Thera britannica* (Turner) was recorded on 5.xii. in fresh condition. This late capture probably represents protraction of the second brood, which usually occurs in September and October (Skinner, *loc. cit.*). However, it is sometimes known to occur well into November (Haggett, G. 1981. *Larvae of the British Lepidoptera not figured by Buckler.* Br. Ent. Nat. Hist. Soc., London and pers. obs.).

Only two immigrant species were recorded: *Autographa gamma* (Linnaeus) was frequent during September, with a maximum of thirty on 14.ix. Small numbers were recorded in October, with a maximum of ten on 9.x. the last was caught on 7.xi. One *Udea ferrugalis* (Hübner) was recorded, on 28.xi.

This work is partly funded as a Joint Research Council Agriculture and Environment Programme (JAEP) project.— MARTIN C. TOWNSEND, Farmland Ecology Group, Dept. Entomology and Nematology, AFRC Institute of Arable Crops Research, Rothamsted Experimental Station, Harpenden, Herts AL5 2JQ.

The Clouded Yellow invasion — a Scottish perspective

By the time this appears in print, no doubt numerous reports of the massive invasion of the Clouded Yellow butterfly (*Colias croceus* Geoffroy in Fourcroy) will have been published in the entomological journals. Here I add my own observations and place the early 1992 migration in Scotland in the perspective of the last 150 years.

The Clouded Yellow was first reported in Scotland in 1842 by White (1872 *Scott. Nat.* **1871-1**: 162 *et seq.*). The species was first noted in numbers in 1852 when five individuals were recorded on the Ayrshire coast (Dalglish and Ord, 1901. In Scott Elliot, *Fauna, Flora and Geology of the Clyde Area,* 223-45). Probably more *croceus* migrated to Scotland in 1877 than in any year since. Several hundred were reported. Some 261 records from 18 Scottish counties were noted in 1947. Dannreuther (1947 *Scott. Nat.* **1948**: 75-6) reported the highest day count as 20. The species was also reported in 1857 ("several"), 1892 (3), 1893 (1), 1900 (fairly common), 1919 (3), 1933 (5), 1935 (2), 1936 (40 plus), 1941 (about 70), 1945 (2), 1946 (1), 1950, 1955, 1957 (1), 1959 (5), 1975 (several), 1976 (1), 1990 (1) and 1991 (1).

The earliest the butterfly has been seen in Scotland is 1st June (1877).

This year I saw the first two Clouded Yellows on 16th May 1991, 2km south of Lochmaben, Dumfriesshire. This was followed by a female at Sheriffmuir, near Stirling on 17th May and another near Hightae, Dumfriesshire on 18th May. On 26th May I noted one *croceus* at Townhead, Kirkcudbrightshire and more than 12 at Torrs Point in the same county, although it is difficult to say how many of these were repeat sightings. However, males, females and at least two of the pale form *helice* Hübner were seen.

This migration appears to have been accompanied by other southern migrants including the Red Admiral (*Vanessa atalanta* L.) and the Painted Lady (*Cynthia cardui* L.). A single Hummingbird Hawkmoth (*Macroglossum stellatarum* L.) was seen at Rockcliffe, Kirkcudbrightshire on 23rd May.

This is clearly the largest migration of the Clouded Yellow to have reached Scotland. It has the potential of producing the greatest numbers of the pretty butterfly even seen in this country.— Dr GEORGE THOMSON, 2 Ravenhill, Lochmaben, Lockerbie, Dumfriesshire DG11 1QZ.

Local abundance of *Choreutis pariana* Cl. (Lep.: Choreutidae)

On 12th September 1991, between 14.00 and 15.30 GMT, my wife and I visited one of our usual "mothing haunts", Eathie (NH76) on the so-called Black Isle of Ross-shire. At the top of the coastal path, which descends through a young Sitka Spruce plantation from 450 feet to Hugh Miller's famous fossil-fish beds at sea level, I caught a single *Anthophila fabriciana* Linn.

On the way down we saw just two *Aricia artaxerxes* ssp. *artaxerxes* Fabr., where they had been flying commonly on our 25th July visit, but the most remarkable encounter was approximately thirty *Choreutis pariana* Cl. on a single flowering Ragwort (*Senecio jacobaeae*). As we descended we noticed about twenty specimens on every Ragwort plant. Of the many thousands seen on this short walk, all except one — on the reddish head of a Marsh Thistle — were resting in the warm afternoon sunshine on yellow flowers, mainly Ragwort though also Goldenrod, Hawkweed and Sowthistle species, and the centres of Pineapple Mayweed. In fifty years of moth-hunting I have never encountered a single lepidoptera species in such numbers.

On returning to the cliff-top plateau we examined Ragwort plants, in neighbouring fields and at two stops on the drive to the nearest village of Rosemarkie, but no Nettle-tap species were found.— DEREK C. HULME, Ord House Drive, Muir of Ord, Ross-shire IV6 7UQ.

The return of *Trichopteryx carpinata* Borkh. (Lep.: Geometridae) to N.W. Kent

Over much of Britain this is a common species, but it is one of a small group of such moths which although common in N.W. Kent in the mid-nineteenth century appear to have declined to the point of extinction. Chalmers-Hunt (*Butterflies and Moths of Kent,* 1981) states that the insect is "rare or extinct in Division 1", the Tertiary outcrops on the dip slope of the Wealden escarpment between the river Darent and the borders of the Metropolis. Apart from a record for Bromley for 1961 Chalmers-Hunt quotes no definite records after the mid-nineteenth century, but there is evidence that the moth persisted in a number of localities in the first decade of this century, since when it has not been recorded over a very wide area of vice-county 16 (West Kent).

On 3.v.1988 a specimen was attracted to my garden m.v. light, then in its twenty-first year of operation; a further example was noted on 13.v.1988, and a third two years later, 3.v.1990. This year (1992), an initial specimen on 17th April was followed by five on the 19th, and another on the 22nd.

Vast changes are taking place in the adjacent woodland as the coniferous plantations are removed, and deciduous trees are planted in their place, although perhaps the return of this moth is related more to the decline in atmospheric pollution?— B.J. WEST, 36 Briar Road, Dartford, Kent DA5 2HN.

***Conistra* (Lep.: Noctuidae) larvae on *Ribes uva-crispa* — a correction.**

In my recent note on caterpillars on gooseberry (*Ent. Rec.* **103**: 272-273) I unfortunately speculated incorrectly that the *Conistra* species collected would probably be *vaccinii* (L.). When the moths emerged in the autumn of 1991, all 15 turned out to be *ligula* (Esper). I regret any confusion caused.— MARK R. SHAW, National Museums of Scotland, Chambers Street, Edinburgh EH1 1JF.

Martin Lister's English spiders, 1678, translated by **Malcolm Davies** and **Basil Harley.** Edited by **John Parker** and **Basil Harley.** 234pp. One colour and 12 monochrome plates. Harley Books, 1992. Boards £49.95. Paperback £24.95.

This first-ever English edition of Martin Lister's *Tractatus de Araneis,* written in Latin and published in 1678, provides a fascinating insight into the advances in scientific method and knowledge in the seventeenth century. A founder member of the Royal Society and a friend and regular correspondent of his well-known contemporary John Ray, Lister was highly regarded in his own day, cited by Linnaeus in the tenth edition of his *Systema Naturae* (1758), and praised by the famous arachnologist John Blackwall (1790-1881). However, as Latin has become progressively less widely read since the mid-nineteenth century, so his pioneering contribution to British arachnology has been either overlooked or discounted and he has faded into relative obscurity. This book will restore him to his rightful position at the head of the roll of honour of British arachnologists.

John Parker's Introduction chronicles Lister's life and assesses his work in arachnology. Notes on the Translation explain Lister's precise and well-ordered terminology and give further background information.

The translation of the *Tractatus* itself follows. *Book I of English Spiders* comprises the introductory section devoted to general spider morphology, biology, behaviour and lore; *Book II of English Spiders* (the systematic section) is divided into two main sections — *Of the eight-eyed spiders* and *Of the two-eyed spiders.* Lister's classification of the species he describes is thereafter based on their method of obtaining prey, either by different

kinds of web-building or by hunting in the open. Each detailed species' description is followed by an editorial Species Note commenting on Lister's observations, some of which have appeared in no other work on spiders.

Lister's correspondence with Ray and other Fellows of the Royal Society of relevance to his work on *English Spiders* is reproduced in an Appendix supported by numerous footnotes which, with those to the Translation, throw further light on his sources which date back 2000 years to Aristotle.

A new colour plate by Michael J. Roberts mirrors the original engraved plate of spiders, and other monochrome plates illustrate the most important people and places in Lister's life. The book concludes with references and an index.

Produced with the usual care of Harley Books, *English Spiders* is an enjoyable read; the correspondence, particularly with John Ray, is fascinating. The editors and translators have done a great service in bringing Lister's work back to life and rehabilitating one of England's earliest scientists.

The butterflies of Kenya and their natural history by **Torben B. Larsen.** 490pp. 23 figs. 64 colour plates. Boards. Oxford University Press, 1991. £85.00.

Kenya is one of the more accessible African countries with a well-developed tourist industry and a long history of butterfly collecting. Yet, despite this, no comprehensive book on the butterflies of Kenya had been produced until this masterly work. Some 871 species are covered in the text and plates, and nearly 1500 specimens are illustrated — mostly as half specimens, upper and underside. The plates, printed on a blue background, are particularly well produced.

This is neither a coffee table book, nor a dry monograph. The 91 pages of general introduction provide a comprehensive overview of Kenyan butterflies covering life cycle, the adult butterfly, variation, behaviour, enemies and defence, biogeography, distribution and habitats, migration, pests and classification. It is difficult to select any chapter as being of particular interest — all are fascinating — but the coverage of biogeography, distribution and habitats is masterly.

The systematic section is introduced by notes on nomenclature, vernacular names, technical terms (remarkably few!), other general comments and a gazetteer. Each family and genus is introduced, sometimes briefly, sometimes at length (such as the Danainae). Individual species are dealt with under sub-headings of identification (main diagnostic points — often referring to behaviour in the wild), sub-species, habits, early stages and distribution.

The reviewer was rather surprised to find that he had read through several pages of the systematic section with interest. So often, these

necessary sections are dust dry but Larsen's style brings them to life. Most clearly convey the author's familiarity with the living insect rather than a museum specimen. As a brief taster, under the description of the nymphalid *Cymothoe teita* we find ". . . the male is a high-flying, perching species which stays infuriatingly out of reach unless a good bait is at hand. It is pugnacious and always shy when low down. . . .". The combination of good science and easy writing style is not often found in books of this type.

During research for this book new insects were found, and one of the appendices describes two new genera, six new species and five new subspecies. There is a comprehensive bibliography and index.

The reviewer can fully endorse the comments made by Dr Richard Leakey in his foreword: "He should be proud of the final result which speaks so well of him and his subject".

Paul Sokoloff

A key to the woodlice of Britain and Ireland by **Stephen Hopkin**

51pp, numerous figs, 16 colour plates. Field Studies Council, 1991. £4.75.

Another useful and well-produced publication reproduced from *Field Studies*. This is a fully illustrated AIDGAP-tested key to the 37 species of woodlice (Crustacea: Isopoda, Oniscidae) known to be native or naturalised in Britain and Ireland. Glasshouse aliens are excluded.

There is a brief introduction on woodlice, notes on collecting and preservation, woodlice cultures and a systematic checklist. A well illustrated key is followed by species' descriptions. Each is briefly considered under headings of size, natural colour, lungs, eyes, behaviour, preserved appearance, habitat, distribution and general comments. There is a bibliography, glossary and 32 excellent colour photographs.

A review of the scarce and threatened Hemiptera of Great Britain by **P. Kirby**. 269pp. A4 format. Paperback. Joint Nature Conservation Committee, 1992. £9.00.

This is the latest in the series *UK nature conservation*. Over 240 of Britain's rare Heteroptera and Auchenorryncha are considered, following the *Red Data Book* format of identification, distribution, habitat and ecology, status, threats, conservation and references.

These data sheets for each species are concisely informative, but a major feature of this book is the introductory chapters which consider habitats and management for Hemiptera, combining an informative presentation with sensible advice. This book revises the Heteroptera section in *British Red Data Books 2: Insects,* expands the coverage to include nationally notable Heteroptera and, for the first time, our rarer Auchenorrhyncha. The style is comfortable, the presentation good, and this should be of considerable interest to a range of professional and non-professional entomologists.

PAS

The leaf miners of Warwickshire by **John Robbins.** 182pp. A4. Word-processed text. Limp binding. Warwickshire Biological Records Centre. 1991. Available from Warwickshire Museum, Market Place, Warwick CV34 4SA, price £7.25 including postage.

This detailed and comprehensive publication has the stated objective of reporting the results of observations on the leaf-mining insects of Warwickshire, and introducing the topic to a wider audience. Some 750 species are detailed. Introductory sections cover the biology of leaf-miners, stem and seed miners, morphology of mines, identification and the Warwickshire fauna. The systematic section details individual species listed under foodplant presented in "botanical order". Detail includes notes on the mine, host, status, first county record and first mining record. The book concludes with a systematic list of miners, locality, index, foodplant index and addenda.

The book is packed with information, much of it apparently new. The definition of a miner is somewhat broad, including, for example, "seed miners". species not usually considered miners are included if some part of their life cycle is, or might be, spent in a mine. Examples include *Polyommatus icarus, Aphelia viburnana* (on conifers) and *Olethreutes lacunana!*

The author is confident that coverage of the county is now comprehensive *". . . it was clear that by the end of 1983 most of the mining fauna had been found — after a mere 27 months. . . ."*. Advice and bibliography is provided for those interested in studying mining insects, but unfortunately it does not recommend breeding imagines except in a few cases. This may be fine for the author *". . . . I estimated that 90 - 91% of the local mines could be identified without having to rear the imagines . . ."*, but it is poor advice for the beginner, who would benefit on all counts from seeing a completed lifecycle and the resultant insect.

The beginner is also poorly served by the bibliography. A number of very useful reference works which key or illustrate mines are omitted, for example volume 2 of *The moths and butterflies of Great Britain and Ireland* (keys to the mines of the Gracillariidae), Spencer's *The Agromyzidae of Fennoscandia and Denmark* (illustrations of mines), Tragott-Olsen's *The Elachistidae of Fennoscandia and Denmark* (Illustrations of mines), Johansson's *The Nepticulidae and Opostegidae of North West Europe* (illustrations of mines) and others.

The information on species is well organised, with extensive use made of symbols — easy to use with a little practice. Species are listed alphabetically under each foodplant, but no indication is given of the Order — Diptera, Lepidoptera, Hymenoptera and Coleoptera are mixed up, and it does take a bit of time to pin down the taxonomic position of an unfamiliar insect.

An unusual feature is that unidentified mines are listed and briefly described. Most are attributed, although without evidence or justification,

to either xenophagy (a species feeding on an atypical foodplant) or an as yet unidentified species. For example a round underside blotch on *Sium* is explained as *". . . This will be a species of Phytomyza, probably new to Britain. . . .".* There did not seem to be a recognition that some unusual mines can be caused by parasitism or disease in the larva.

A rather worrying feature is the high degree of uncertainty of some of the records. A couple of examples may illustrate this: under *Scrobipalpa costella* we find ". . . A mine in *Symphoricarpos,* otherwise unidentified, may have been xenophagy by *S. costella*. . . ."; under *Metopomyza flavonotata* ". . . MINE: not described, but thought to be in the leaf sheaths . . . . HOSTS: *Holcus* . . . . STATUS: there was a probable record . . . in 1985 when mines were found in the leaf sheaths of *Holcus*. . .". Much of the sound observation in the book is tempered by this type of uncertainly and supposition.

A number of the records are very surprising for Warwickshire, for example under the host *Achillea* we find *Coleophora gardesanella* (= *machinella*) as "a possible record from . . . in 1987, the larva on *A. millefolium*. Unfortunately the rearing attempt was unsuccessful. . . ."

It is clear that a very considerable amount of work has gone into preparing this book, and it is unfortunate that its value is considerably reduced by some of the issues considered above.

Paul Sokoloff

Rearing and studying stick and leaf insects by **Paul Brock**

74pp, 40 figs, 7 monochrome plates. The Amateur Entomologist, Vol. 22. Amateur Entomologist's Society, 1992. £5.00.

This the third incarnation of this useful publication. Originally issued in 1970 as *Rearing stick insects,* it was revised and extended in 1985 as the somewhat obscure *The phasmid rearer's handbook*. The current title better reflects the popular appeal of these insects.

Whilst much of W.J.B. Crotch's original text on *Carausius morosus* has been retained, the remaining text has been thoroughly and expertly revised to reflect modern knowledge on phasmids, and coverage has been extended to treat most of the commonly available species. An extensive series of tables provides synoptic data on the many less common species that are or have been in culture. There are notes on locating and collecting stick insects, preservation, photography, a glossary, sources of livestock supply and further reading.

Mr Brock's style is easy and readable and the emphasis is on practical information. The introduction provides a fair synopsis of phasmid taxonomy, morphology, life history with notes on predators, parasites and diseases. It should be much valued by schools and colleges, as well as by the growing band of amateur phasmid enthusiasts.

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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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SPECIAL INDEX

Compiled by Lieut. Colonel W.A.C. Carter

Newly described taxa (species, genera etc.) are distinguished by **bold type**. Taxa new to Britain or newly recognised as British are denoted by an asterisk.

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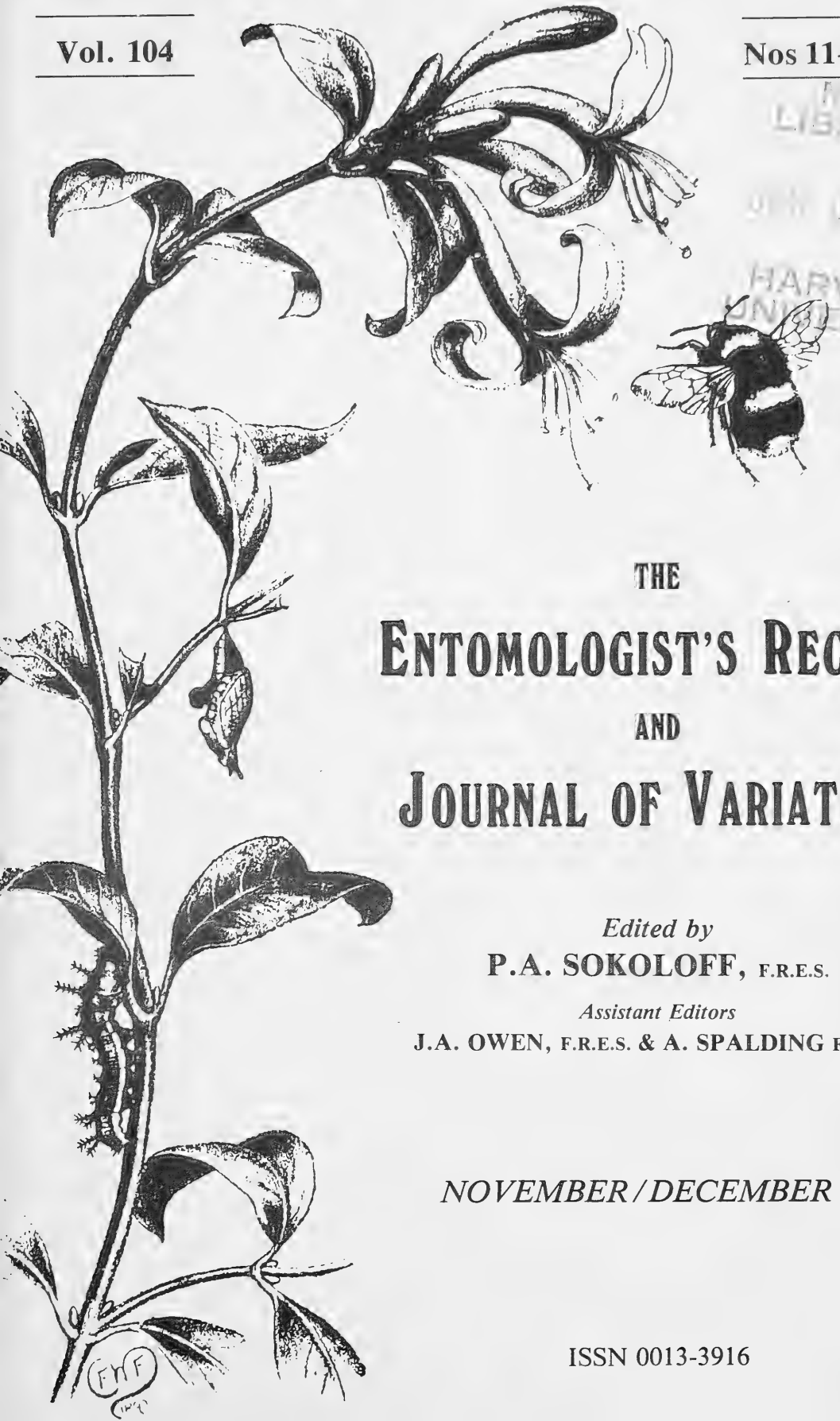

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REMINISCENCES OF AN AMATEUR LEPIDOPTERIST, 1920 - 1990

E.P. WILTSHIRE

Wychwood, High Road, Cookham Rise, Berks SL6 9JF

16. Thames Valley (1960-90)

Before going to Bahrain I had acquired a cottage on the Bath road west of Maidenhead, fairly convenient for commuting to London, whether for the Foreign Office or the Museum at South Kensington; it was also an easy drive to Tring, Oxford or Reading.

At Oxford Bernard Kettlewell was lecturing on genetics; his wife (my cousin Hazel) and family lived in the Old Vicarage at Steeple Barton. Their pets included thousands of Scarlet Tiger caterpillars (*Callimorpha dominula* L.) which Bernard had cultivated for years, and a mallard drake who thought Hazel was his mother. At Reading, even closer, Brian Baker was building up the Municipal Museum's Lepidoptera collection and doing remarkable fieldwork on Clearwings (Sesiidae). Besides, of my wife's married sisters, one whose husband had retired from Persia to a cottage in Maidenhead Thicket, was just down the road; the other not far from Tring.

No wonder I chose East Berkshire rather than Norfolk, despite my own family ties there and boyhood memories; its distance from London was the decisive point.

And here I am, thirty years later, at Cookham, tapping these words and overlooking the Cliveden beechwoods and the Thames; may it run softly till I end my song. At first I dutifully noted the fauna of these woods, chalk-hills and water-meads, but now I tend to leave it to local colleagues, and devote most entomological moments to calm relics of the Middle East where battles rage.

After a winter of commuting by car and train from Cartwheel Cottage, I sold it and leased a flat in Westminster, where I officially moved into linguistic circles. From my language-laboratory in Bridge Street I enjoyed dropping, some Wednesdays, into choral evensong at the Abbey on my walk home. After about a year I got involved in conservation circles and for some months ran an office and edited *Habitat* from over the reptile-house in the Zoo at Regent's Park. On my daily path to this haunt I made friends with monkeys and once even lunched with the charming Bruce Campbell in the Zoological Society's fine restaurant. The Council for Nature, a charitable association with the highest patronage, was in touch with all, and on good terms with most, of a string of other bodies such as SPNR, RSPB, CPRE, IUCN, NERC, NC, NPC, CC, FSC, BSBI, MSBI, BDS, BTO, NT, CLA, FC, and others more remote who kept biological records or advised us all about pesticides. The General Secretary whom I seemed to be replacing, was persuaded to hold my hand for one or two autumnal months, but others on the staff were melting away.

My boss, Sir Landsborough Thomson, an eminent medical doctor and also an ornithologist, giving me lunch at the Athenaeum, was pessimistic

about the future of the outfit into which he had just recruited me; he suggested I might keep my eyes open for a more durable-looking job, so I joined the Institute of Linguists and also put in my name with some thirty other applicants for post-retirement jobs in two towns on the French channel coast. My wife and I inspected Le Havre, which seemed to be more attractive than Calais. My six years there deserved a separate chapter and the reader has seen my account of them. I returned home in 1975 at the depth of a property slump. I expected to sell my flat in town and buy a house in Cookham with the proceeds, but had to wait three years before I succeeded.

Good friends on the Council of the BENHS honoured me by appointing me as editor of their *Proceedings* (now the *British Journal of Entomology and Natural History*; this is a third successive name-change for the old *Proc. & Trans. South London*). From my flat, attending their meetings at the Alpine Club was as easy as visiting the Natural History Museum.

I had completely retired from gainful employment, and every step I took was voluntary. For four years until in 1978 when I sold my flat and moved to Cookham, I averaged a monthly attendance to the BENHS, and five visits a month to Museum and/or RES. From Cookham I continued at three a month for a year. My collection, rearranged and with lots of new locality labels, was now contained in over a hundred store-boxes, mostly large and moll-lined. The Museum had for years meticulously guarded them, though "on deposit", but in 1979 I presented the lot to that wonderful institution, then at about its peak of strength before the Thatcherite cuts. I was rewarded by the title of Honorary Associate, a couple of keys, permission to study as one of the staff, and a ceremonial lunch in December. More and more lepidoptera to determine were landing on my desk, first from Oman, and now from Saudi Arabia.

During this settling-down period family reasons took me almost annually out of Britain. My daughter Kaye, now a business woman, moved from one European city to another. An ageing amateur's bug-hunts, while staying with her, were naturally less systematic than those of yore, and briefer. The appeal of the Mediterranean was a strong one; its fauna and flora seemed to harbour less well-known species. When Kaye took holidays in the Provence or the Camargue, or Sardinia, the chase was particularly rewarding.

Apart from Kaye's visit to the sea of blue, there was Anthony Valletta who for years had directed Maltese education and had moreover written three or four natural history booklets on the island's wild life. He had long been a sympathetic visitor to London and became known to many of us in the BENHS. Though rather unwell at my visit in October 1986 he was most helpful and hospitable, taking me to the Busket gardens, amongst whose immemorable oaks the Lappet moth (*Gastropacha quercifolia* L.) seems localised. As in his 1973 booklet, he says this species is a pest on fruit-trees, it may not be in danger of extinction in Malta, like the even more localised

Anthony Valletta in the Busket gardens, Malta.

Hadenine moth *Brithys encausta* Hb. a pink-brown, more easterly vicariant of the "Kew Arches". Its larvae feed on *Pancratium maritimum* and could still be found in 1985 on the sands of Slug Bay in the north-west. From other beaches, more accessible to tourists, the foodplant is disappearing.

The Spurge hawkmoth (*Hyles euphorbiae* L.), happily, is less menaced; its foodplant *Euphorbia biglandulosa* (?) (= *pinea* sensu Valletta) grows widely on sun-baked rocky ground in the north of the island. The colour variations of the above caterpillars, and a fourth moth mentioned below, almost suggest hybrid origins. But insolation, in my view, is the probable cause.

The Maltese tamarist feeding Catocaline moth *Clytie illunaris* Hb. has become plentiful on recent plantations of the tree. Their genitalia are clearly *illunaris*; their Maltese larvae are pale and long-striped as in *C. sancta* Stgr., a N. African Eremic vicariant, but *illunaris* larvae in the Camargue are dull grey-brown. The Maltese fauna certainly provokes thought!

After a flying visit to Bâle late in. 1980 I had a severe attack of facial shingles, with hallucinations. Fortunately my vision was not affected and I was able to continue microscope work, but I handed over my editorial chores to Dr Uffen and reduced to one weekly visits to the Museum when I got going in the old Rover again.

A third generation was taking over from the second I had known in the Museum and the two London Societies, with Miriam Rothschild somehow uniting both. Just as Nye, Fletcher and Jacobs had supplanted Tams, Riley and Cockayne, so now the computer-generation took over, back-up staff faded, skeleton dinosaurs replaced stuffed whales and jumbos, and our

stay-at-home Brits ventured more and more into Europe or further afield, mostly without expatriation. Jerry Pringle, now in Kent, popped up to recall the thousand and one nights in Baghdad, and in mid-Thames I try to keep in touch at least with Theo and Joy Homer, our hosts on the edge of Maidenhead Thicket.

CORRIGENDUM: Pt 3 (vol. 103): p.66, l.41, for 1958-63 READ 1957-59.

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— , 1973. *The moths of the Maltese islands.* Progress Press, Malta.

INDEX OF PROPER NAMES

(References are to *Ent. Rec.* Vols 103 or 104)

A. Persons

B. PLACES

EUPITHECIA SINUOSARIA EVERSMANN (LEPIDOPTERA: GEOMETRIDAE) NEW TO THE BRITISH ISLES

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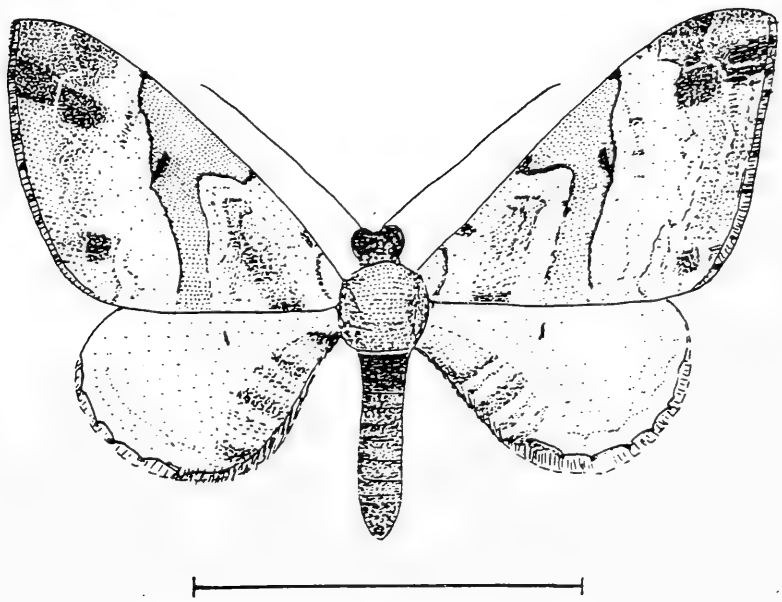
AFTER the night of 13th June BES found an unfamiliar pug in the actinic trap regularly worked in his garden at Berrow. He was unable to identify the specimen, which was a male in reasonable condition and which did not resemble any species on the British list. From the notes at the end of *British Pugs* (Agassiz *et al,* 1981) he wondered whether it might be *E. sinuosaria* and so wrote to DJLA on 30th June enclosing a colour transparency of the moth at rest. On 11th July DJLA visited Berrow armed with Skou (1986) and comparison with the colour photograph in that book seemed to confirm the provisional determination. Shortly afterwards DJLA visited the Natural History Museum and was able to compare it with specimens there, assisted by David Carter. The only other possible species was *E. morosa* Vojnits which is confined to Turkestan. It was thus confirmed as the first British specimen of *sinuosaria*. After display at the 1992 Annual Exhibition of the British Entomological & Natural History Society the specimen will be deposited in the Natural History Museum.

Description

The species is distinctive compared with most of the genus *Eupithecia*. It is large, wingspan 18 - 23mm, and there is a central waisted fascia coloured chocolate brown.



Eupithecia sinuosaria (Scale bar = 1cm)

The larva feeds on *Atriplex* and *Chenopodium* in late summer and it is often found in coastal districts. An eastern species which has not hitherto been found west of the Netherlands but it is widespread in Scandinavia and in countries eastwards to China.

As well as the coloured illustration referred to Skou (1986) has black and white photographs of the habitat and larva, and drawings of the genitalia of both sexes and the plate of the 8th abdominal segment of the male. The genitalia are also figured by Vojnits (1976). Spuler (1908) also contains a coloured illustration of the adult.

Whilst the appearance of this species in Britain is not altogether surprising, it is remarkable that it should appear in such a westerly locality, even though easterly winds were blowing at the time of its capture. The date is also early, the normal flight period being late June to August.

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Cacoecimorpha pronubana* (Hübner) (Lep.: Tortricidae) bred from flowers and seed-heads of *Aegopodium

To add to the ever-growing list of pabula of this virtual omnivore, perhaps I should mention having this year bred it from *Aegopodium podagraria* (goutweed) in my garden. I first noticed spinnings in certain umbels, assumed to be those of a *Depressaria* sp. (s.l.), but should have known better! Having consumed the flowers, the larvae turned their attention to the green seed-vessels which they spun together and devoured; from one of the spinnings an imago duly emerged.— A.A. ALLEN, 49 Montcalm Road, Charlton, London SE7 8QG.

An aggregation of *Pieris napi* L.

On the afternoon of 15th July 1992 my wife and I were walking in Temple Wood, Lincolnshire, and were surprised to see three large congregations of white butterflies, only a few feet from each other, taking moisture from a damp patch which had a fine layer of sawdust resulting from Forestry Commission activities.

We were able to count 42 butterflies in the three groups, all *Pieris napi.* Others were still arriving. *Pieris rapae* and *P. brassicae* were both common and flying in the area but whilst they fed from adjacent stands of thistle, none attempting to join the exclusive groupings of *napi.*

There were many other damp patches in the wood but only this sawdust area held any attraction for *napi* the congregate.— D.S. BURROWS, Witham Cottage, School Lane, Boothby Pagnell, Grantham, Lincs.

PITFALL AND WATER TRAPPING OF LEPIDOPTEROUS LARVAE

G.M. HAGGETT

Meadows End, Northacre, Caston, Norfolk.

TRAPPING of lepidopterous larvae is seldom done, and is especially rare in Britain. The few instances that are known here relate to the collection of individual species, such as from piled herbage for *Athetis pallustris* or from corrugated paper traps for *Parastichtis ypsillon* or *Atethmia centrago,* while H.B.D. Kettlewell employed the novel device of baiting with runner beans for *Heliothis maritima.* Lepidopterous larvae encountered during sampling for other invertebrates such as Coleoptera do not seem to have been recorded.

But during the past few years trapping of lepidopterous larvae in pitfall and water traps has been done on very different ecological sites of widely separated parts of Britain. The main work formed part of invertebrate sampling surveys carried out by Nature Conservancy Council in Wales and Shropshire, at Dungeness and Rye, and in East Anglian wetlands. Additional work was done on one Breckland, Norfolk, site, and a quite separate investigation by Lincolnshire and Humberside Trust for Conservation produced samples from Thorne, Lincolnshire and Yorkshire border, as part of the Thorne regeneration project. This account has been compiled to fill a gap in collecting methods recorded for British Lepidoptera.

Methodology of the survey trapping is given in the 1991 Nature Conservancy Council publications Contract No. 133 *An invertebrate survey of a proposed Dungeness 'C' Station study area* and CSD Report 1125 *The Welsh Peatland Invertebrate Survey. Preliminary Report: Methodology and Study Sites.* The Dungeness survey was completed in 1988, the Welsh Survey from 1987 to 1989, and the East Anglian survey was carried out from 1988 to 1990.

Both pitfall and water traps were distributed at a frequency that allowed as many sites to be visited as could be undertaken for periodic inspection and collection of material. Traps were operated for up to four two-week periods from June to October and so trapping was not continuous and can account for the absence of some common species that are not recorded. Dates represent the last day of collecting of a fourteen day period. Pitfall traps were buried flush with the substrate surface and commonly laid out in lines of five with each trap three to five paces apart. They were filled with a solution of 10% formalin and 10% ethylene glycol. A larger water trap bowl was sited at each end of the pitfall line, one placed on the ground, the other frequently mounted on a half-metre stake, and these were charged with the same chemical mix. After collection larvae were transferred to 70% alcohol solution.

A few larvae were so blackened after prolonged immersion in these media that identification from characters other than structural was not possible after a year or so. It is not clear just how much this was due to the

agents used, or the delay before identification, because the same degeneration of pigment can happen with the more standard preparation of alcohol and glacial acetic acid. It is well-known that larvae killed directly by immersion in alcohol are liable to become blackened. I have found that larvae newly killed in alcohol and then firmly handled with forceps can develop large black patches at the point of contact, but which when not handled in that manner remain unmarked. I now lift larvae by placing the tips of finely curved forceps behind the head capsule.

Lepidopterous larvae were sent to me for identification in batches in the winter months, sometimes up to two years after trapping. Although some specimens became discoloured or distorted, the great majority could be identified when in last or late instars. Early instars could not be identified for most noctuids or geometers, but it was possible for small Lasiocampids and *Saturnia*. Of course all material so gathered is dead, so no species could be reared. Identification could be made only positively against a reference collection that supported visual recognition. I found the illustrations in standard works rather unhelpful for this task but detailed descriptions were useful. All the larger and more obvious larvae declared themselves but a good many specimens required systematic comparison and evaluation. A number of species have been encountered by this means of sampling that to the best of my knowledge are rarely found wild, some have not been recorded as having been found wild at all, while one — *Amphipoea oculea* L. — has yet to be described.

The sites sampled were open moor, wetland, heath or shingle and coast, so the species trapped comprise in the main ground-feeding larvae; few that feed on bush, shrub or tree were trapped, but there were notable exceptions that included *Eligmodonta ziczac* L., *Phalera bucephala* L. and *Bupalus piniaria* L.

These methods have indicated that movement of larvae at soil and lower vegetation levels is considerable, and especially noteworthy for internal feeders such as *Nonagria, Oligia* and *Amphipoea* that move from stem to stem or plant to plant, as well as for the soil dwellers such as *Luperina* and *Apamea*. The numbers of *Amphipoea* larvae trapped by these methods are remarkable for a group virtually unknown in the wild and a separate paper (Haggett, 1992, *Ent. Gaz.* **43**: 47-51) discusses them in better detail. Larvae were also collected in these surveys by other methods. I have not included their results in order to focus on the pitfall and water trap success.

The lists that follow are of all species identified and are summarised for each survey area.

Welsh peatlands survey 1987 - 1989

Hepialus humuli L.
Hepialus hecta L.
Hepialus lupulinus L.
Pieris rapae L.
Lasiocampa quercus L. Early instars and a few last.

Macrothylacia rubi L. Present on a wide range of sites, all instars trapped, a frequent species.
Philudoria potatoria L. Comment as for *M. rubi* but with early instars the most frequent.
Saturnia pavonia L. Trapped in a range of instars.
Idaea dimidiata Hufn.
Orthonama vittata Hufn.
Xanthorrhoe ferrugata Cl.
Scotopteryx chenopodiata L. Seven trapped. A species rarely recorded wild.
Epirrhoe alternata Müll.
Lampropteryx otregiata Metc. Two examples trapped are amongst the few wild larvae recorded since Dobson first found them in Devon in 1962.
Eulithis testata L.
Colostygia pectinataria Knock.
Perizoma didymata L.
Eupithecia subumbrata D. & S. Very few pug larvae were trapped but this species appeared in two survey areas. Other species of pugs were collected from these sites by other methods.
Gymnoscelis rufifasciata Haw.
Alcis repandata L.
Ematurga atomaria L. Very frequent and in a range of instars.
Cabara exanthemata Scop.
Perconia strigillaria Hb.
Eligmodonta ziczac L.
Thumata senex Hb. Present on a good many sites with individual traps collecting up to seven specimens. Of unusual interest as the larva is not recorded wild, being known really only from few examples reared from the egg. But see also under East Anglian survey.
Cybosia mesomella L. Seven examples of a larva but scarcely recognised by the collector and so little recorded.
Parasemia plantaginis L. Four examples all in last instar, another larva rarely met with nowadays.
Spilosoma lubricipeda L.
Spilosoma lutea Hufn.
Diaphora mendica Cl.
Phragmatobia fuliginosa L. The most ubiquitious species, present in all instars. Variation of the dorsal stripe was remarkable, some larvae having this character extremely boldly developed.
Agrotis exclamationis L.
Axylia putris L.
Ochropleura plecta L.
Noctua pronuba L.
Lycophotia porphyrea D. & S. Another abundant species present on most sites and in all instars, but only one example of the blanched last instar (see

Dr Henwood's note *Ent. Rec.* 1989, **101**: 11-12, 253).
Xestia xanthographa D. & S.
Xestia agathina Dup. One example.
Cerastis rubricosa D. & S. Not a larva that is well-known to collectors, and so little recorded; a number trapped on some sites mostly in last instar.
Anarta myrtilli L. Surprisingly few.
Lacanobia oleracea L. Frequent.
Ceramica pisi L. The commonest larva next to *fuliginosa* and *porphyrea*; present in all instars.
Tholera cespitis L.
Tholera decimalis Poda. Many fewer than on the Dungeness and Breck sites (no specimen of *graminis* from Welsh sites).
Mythimna straminea Treit. One example.
Mythimna impura Hb.
Mythimna pallens L.
Lithomoia solidaginis Hb. One half-grown, two others in last instar.
Xylena vetusta Hb. Four examples, small to three-quarters grown.
Xylena exsoleta L. One example a third grown.
Eupsilia transversa Hufn. One last instar example, from a site classed as "upland soligenous mire" and not the most likely of habitats.
Conistra vaccinii L. One last instar from a *Phragmites* site.
Agrochola lychnidis D. & S.
Acronycta menyanthidis Esp. Six examples all last instar, from several sites.
Apamea crenata Hufn. and *Apamea remissa* Hb. The few examples probably reflect the dates of trapping.
Apamea unanimis Hb. One example.
Oligia Hb. Three last instar examples. Larvae of three of the four British insects are inseparable, whereas *fasciuncula* Haw. stands apart.
Mesapamea secalis L. One example that could of course be *didyma*!
Amphipoea lucens Freyer. 17 out of 29 larvae of this genus.
Amphipoea fucosa Freyer ssp. *paludis* Tutt. 7 out of 29 of this genus.
Amphipoea oculea L. 5 out of 29 of this genus. This larva not yet described or fully figured.
Nonagria typhae Thunb. Three from two sites, two penultimate and one last instar.
Protodeltote pygarga Hufn. Another larva rarely recorded by collectors.
Stilbia anomala Haw. One example.
Scoliopteryx libatrix L.

Dungeness and Rye survey May to October 1988.

Lasiommata megera L.
Pseudoterpna pruinata Hufn.
Aspitates ochrearia Rossi. This location and the Breck are amongst the few

places where this larva can be found wild today.
Eilema pygmaeola Dby. ssp. *pallifrons* Zell. Eleven examples mostly in last instar. Trapping dates are 23rd May, most in June to early July, then one during 29/8 to 11/9. I am grateful to Mark Parsons for drawing my attention to the two recorded instances of finding wild larvae of this species. In 1978 (*Ent. Rec.* **91**: 9) L.D.M. Parker found two larvae under a piece of concrete, and six years later (*Ent. Rec.* **97**: 149-154) R.K.A. Morris published his account of how larvae sit at night on both dead and green blades of grass at Dungeness, and that they could be swept in numbers in spring. These appear to be the only occasions recorded of wild larvae until those of this survey.
Arctia villica L. One last instar.
Phragmatobia fuliginosa L. Only one example, in marked contrast to the multitude of Welsh larvae.
Diaphora mendica Cl. One example.
Agrotis cinerea D. & S. Three examples in last instar.
Agrotis puta Hb.
Agrotis exclamationis L.
Noctua pronuba L.
Hadena perplexa S. & S. The most abundant larva, present in all instars but commonly in the later. Peak frequency in June but trapped both earlier and later. Present in 29 traps with up to six examples in one trap.
Hadena albimacula Borkh. One example in last instar, the species is normally collected on *silene* after dark or found beneath it and lichens on the shingle.
Cerapteryx graminis L. Two examples.
Tholera decimalis Poda. Present in eleven traps with up to three larvae in one trap.
Mythimna pallens L.
Aporophyla australis Bsd. One last instar. Not a larva that we hear much about these days.
Eupsilia transversa Hufn.
Apamea monoglypha Hufn. Five examples in penultimate instar. I have yet to hear of any record of a positively identified instance of *lithoxylea* D. & S. being found wild. *A. monoglypha* will turn up anywhere as these surveys confirm, and is always the larva casually encountered in the garden, under the hedge or beneath wood or stone.
Oligia Hb. One small example.
Luperina testacea D. & S. The next most frequent larva, present in 17 traps with up to two larvae in any one. Mostly in penultimate or last instar, trapped from May to July.
Nonagria typhae Thunb. Two examples both last instar.
Hoplodrina alsines Brahm.
Hoplodrina blanda D. & S.

East Anglia wetlands survey mostly June to October 1989 - 1990

Like the Welsh peatlands survey the East Anglia wetlands embraced sites of very different types. Although the total number of species trapped is much fewer, so too were the total number of samples. A number of the *Phragmites* specialities were trapped but only one *Amphipoea*.

Pieris rapae L.
Philudoria potatoria L.
Xanthorrhoe spadicearia D. & S.
Epirrhoe alternata Müll.
Captogramma bilineata L.
Eupithecia subumbrata D. & S.
Eupithecia subfuscata Haw.
Petrophora chlorosata Scop. A very poor specimen from a site without bracken but with Marsh Fern (*Thelypteris*).
Ematurga atomaria L.
Epione repandaria Hufn. Two examples.
Phalera bucephala L.
Orgyia recens Hb. One larva 5.9.89 one-third grown, from Norfolk Broads where it is infrequent but well-known to County lepidopterists.
Thumata senex Hb. Present in two traps, one with three larvae. In 1989 Andy Foster found two larvae in the Bure marshes from which he reared a moth. He fed the larvae on *Pleurococcus* type of algae that was growing on reed stems in which larvae were hiding.
Cybosia mesomella L.
Arctia caja L. Surprisingly this was the only example from all survey areas.
Diacrisia sannio L. One example from a *Calluna* dominated mire.
Spilosoma urticae Esp. One example from one of the washes of Cambridgeshire, long unrecorded from there, and two from the Norfolk Broads.
Phragmatobia fuliginosa L. Numerous and present throughout the period of survey.
Ochropleura plecta L.
Noctua pronuba L.
Lycophotia porphyrea D. & S. Only one example, this from a *Calluna* mire.
Diarsia rubi View. or *florida* Schmidt. August larvae.
Orthosia gracilis D. & S. Two examples.
Xanthia togata Esp.
Oligia Hb.
Oligia fasciuncula Haw. I was very pleased to see this one example. It is very rarely found as it does not behave like larvae of the *strigilis* trio which sit about at night outside their grass stems.
Amphipoea fucosa Frey. ssp. *paludis* Tutt. One last instar example from a *Phragmites* and *Calamagrostis* site.
Hydraecia micacea Esp.

Celaena leucostigma Hb. One example, rarely recorded as a larva.
Nonagria typhae Thunb. Two examples.
Archanara gemini puncta Haw. One each of early and late instars.
Arenostola phragmitidis Hb. One example.
Coenobia rufa Haw. A pre-hibernated larva 5.9.89.
Chilodes maritimus Tausch. One example.
Deltote uncula Clerck. One example.
Euclidia glyphica L.
Macrochilo cribrumalis Hb. A half-grown example in the period 21.8 to 4.9. This is an interesting species rarely found wild and remarkable for the fact that it is easier to recognise in its earlier instars than in its last.

East Anglia Breck survey June to August 1989

Very limited material dominated by *Cerapteryx* and *Tholera*. No geometers trapped.
Zygaena filipendulae L.
Pieris rapae L.
Lycaena phlaeas L.
Macrothylacia rubi L.
Tyria jacobaeae L.
Spilosoma lubricipeda L.
Agrotis puta Hb.
Hada nana Hufn. A common moth with a larva uncommonly seen.
Cerapteryx graminis L. Present in 12 traps, some with two examples.
Tholera cespitis L. Six examples.
Tholera decimalis Poda. Present in 14 traps, some with two examples.
Callistege mi Cl.

Thorne Moors Lincs/Yorks survey 1990

This set of traps operated only from August to October, the species trapped being typically of open moorland but with some not encountered in the other surveys. 57 pitfall or water traps were operated that held lepidopterous larvae.
Hepialus humuli L.
Hepialus hecta L.
Hepialus lupulinus L.
Macrothylacias rubi L.
Phalera bucephala L.
Phragmatobia fuliginosa L. The second most frequent larva, present as last instar in 13 traps.
Perizoma alchemillata L. One example, not a species thought given to wandering from its *Galeopsis* calyces.
Ematurga atomaria L.
Bupalus piniaria L. Present in two traps.
Noctua pronuba L.

Lycophotia porphyrea D. & S. The most frequent species, present in penultimate instar in 16 traps.
Ceramica pisi L.
Rusina ferruginea Esp. One example.
Apamea monoglypha Hufn.

I record my pleasure at receiving larvae from such a wide range of choice sites, and my thanks to Nature Conservancy staff Peter Holmes, David Boyce, Mark Parsons and Andy Foster, and to David Heaver of Lincs and South Humberside Trust for Nature Conservation for sending them to me.

Elaphria venustula Hübner and other macrolepidoptera at m.v. light in Hampshire in 1991

On 10.vii.1991 three mercury vapour lights were operated on the Southwick wood Estate near Portsmouth, Hants (SU656084) from 11am to 4pm. The purpose was to collect samples of *Diarsia mendica* Fab. and *Idaea aversata* Linnaeus. for population genetics work, as part of the Rothamsted farmland ecology project.

This mixed woodland consists of open replanted and regenerating areas together with mature stands, thus providing habitat diversity. The traps were situated near the edge of a large area opened out by storm damage and naturally regenerating to form thickets and clearings. One light was set up over a sheet and two in Robinson-pattern traps, which were inspected hourly. Conditions were warm, and though rather windy, a total of 115 species of macrolepidoptera were recorded. Since these records may be of interest, the more notable ones are discussed.

One *Elaphria venustula* Hübner arrived between 2 and 3am. This species has only been recorded in Hampshire within the last thirty years and is thought to be a recent colonist (Goater, B. 1975. *The Butterflies & Moths of Hampshire & the Isle of Wight,* Faringdon). Although it has reached the New Forest and has a stronghold in south-east Hants, it has not previously been noted from Southwick (B. Goater, pers. comm.). Since *E. venustula* usually occurs in open woodland (Skinner, B. 1984. *Colour Identification Guide to Moths of the British Isles,* Viking Harmondsworth) it is possible that a colony exists at Southwick. About thirty *Boarmia roboraria* (Denis & Schiffermüller) were seen. This species is well established in Hampshire, but has recently disappeared from areas in which it used to be common (Goater, *loc. cit.*) Other species caught which Goater (*loc. cit.*) considers to be local in Hants were *Apoda limacodes* (Hüfner) (1 after 2am), *Cyclophora annulata* (Schulze) (2) and *Semiothisa notata* (Linnaeus) (1).

Thanks are extended to Southwick Estates for granting permission to collect and to B. Goater for useful correspondence.— MARTIN C. TOWNSEND and IAN R. WYNNE, AFRC Farmland Ecology Group, Dept. Entomology and Nematology, Rothamsted Experimental Station, Harpenden, Herts AL5 2JQ.

SOME NOTABLE DIPTERA FROM OXLEAS WOOD SSSI, SHOOTERS HILL, N.W. KENT

A.A. ALLEN

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(concluded from page 271)

CONOPIDAE

Conops ceriaeformis Mg.— Odd individuals at various flowers in rather open areas, late vii-viii. Much the most frequent *Conops* in this district, but by no means a generally common insect.

TEPHRITIDAE

Myoleja caesio (Harr.).— One swept under young aspens in the Castlewood (western) area, 15.viii.63 (Allen, 1963), and a second in a recent clearing with ruderal vegetation in the Jackwood (central) area, 9.viii.86. Not as scarce as formerly, but rare near London; I have one also from Greenwich Park. (The poverty of the area in species of this family contrasts oddly with a total of 30 species from my former garden at Blackheath.)

MICROPEZIDAE

Calobata petronella (L.).— Chiefly in one spot about sycamore posts with readily detachable bark, sporadic elsewhere (vi, vii).

C. cibaria (L.).— Also very local but repeatedly found along a particular short stretch of path at rest on low plants (vi).

MEGAMERINIDAE

Megamerina dolium (F.).— An uncommon fly taken singly a few times by general sweeping in thin woodland on or near the western border of the area (Allen, 1973), but not certainly seen since 6.vii.85.

PSILIDAE

Chyliza leptogaster (Panz.).— One on an ash trunk, 12.vi.89.

LAUXANIIDAE

Sapromyza hyalinata (Mg.).— Discovered at Oxleas on 27.v.88 by sweeping bracken and suchlike vegetation in the vicinity of the hollow oak, and similarly on later occasions, in June, always very sparingly and never far from the original spot; also on young rowan and service-tree. Collin (1948: 2325) could record it only from the New Forest and one Scottish locality, but its range is now known to be wider.

Lyciella platycephala (Lw.).— One swept from shrubs (rhododendron, sycamore), 18.viii.79, and mentioned here because Collin (1948) does not record it for the south-east.

Aulogastromyia anisodactyla (Lw.).— Found on a few occasions (e.g. 11.x.77, 19.vi.78). (Erratic but hardly rare in the district; noted by Collin from only four counties, one of them London.)

HELEOMYZIDAE

Suillia humilis (Mg.).— A specimen swept under trees, western sector, c.1963. (Included as possibly notable on the strength of Collin's record "Wales, Suffolk, Scotland" (1943: 239) and of its being my sole capture of the species. *S. affinis* (Mg.), *notata* v. *hilaris* (Zett.), *variegata* (Lw.), and *ustulata* (Mg.) all occur — the last but one common and probably general — but Collin had no Kent and few S.E. records for any of them when he wrote.)

SCIOMYZIDAE

Pherbellia scutellaris (v.Ros.).— A male taken in the same way in the same area, 2.x.88. Evidently rare in the district; I have one other, from Lesnes Woods (Abbey Wood),.

Tetanocera phyllophora Mel.— One swept on the western margin of the wood, 18.vi.84. (A species occurring widely but very sparsely.)

SPHAERECERIDAE

Puncticorpus cribratum (Villen.).— A very few males of this scarce little fly with reduced wings (associated with the runs of small mammals) were found in debris at the foot of the hollow oak, where the presence of the beetle *Leptinus testaceus* Müll. indicated that of mouse runs, 18.vi.86 & 13.vi.88.

Apteromyia claviventris (Strobl.).— In the same situation, both sexes. A species which is perhaps general, but quite uncommon.

LONCHAEIDAE

Lonchaea contigua Coll.— On and around stumps or logs of oak, 1.vii.88.

L. flavidipennis Zett. (= *limatula* Coll.).— As for the last. Both species occur widely in the district.

L. postica Coll.— One captured similarly, 9.vii.88, appears referable to this species. (All three remain little recorded.)

L. fugax Beck. (= *cariecola* Cz.).— One found dead in sweep-net, vii.89; another on sawn-up oak, 23.v.90. (The others that have been taken are *chorea* (F.) once, beech, *laticornis* Mg. (only after June), *scutellaris* Rond. (common), and *sylvatica* Beling (uncommon). No male of any of the species has been found.)

OPOMYZIDAE

Opomyza petrei Mesn.— One swept by a path, 24.v.89, eastern sector. (I

have this seldom-recorded species also from my former garden at Blackheath.)

CLUSIIDAE

Clusiodes ruficollis Mg. (=*facialis* Coll.).— A male of this, one of the rarer species of the genus, on a rotten birch trunk, 7.vi.86. *C. gentilis* Coll. has occurred on a piece of oak branch, while *C. albimana* (Mg.) is sometimes numerous on decaying or fungus-ridden stumps. (*Clusia flava* (Mg.) is fairly general but occurs singly, in strong contrast to the last.)

EPHYDRIDAE

Discomyza incurva (Fall.).— A specimen of this curious little fly, in life rather resembling a bug or beetle, was swept from woody nightshade beside a pond, 12.ix.89. I have met with it in a very different situation (chalk downland — several in one spot) at Otford, W. Kent; the species is presumably a snail parasite.

Limnellia fallax (Cz.).— One swept in a shady place, 13.vii.88. (If any other of the family should be mentioned here it might be *Dichaeta caudata* (Fall.) with its very distinctive male, not rare at the above pond on *Glyceria*.)

DROSOPHILIDAE

Chymomyza fuscimana (Zett.).— On the freshly cut surfaces of logs or stumps, vii-ix; not common, but probably general. I am indebted to Dr I.F.G. McLean for first pointing out to me this small fly, doubtless much overlooked.

CHLOROPIDAE

Chlorops scalaris Mg.— Has twice been swept from grass under trees (dates not to hand); one of the rarer species of the genus, at all events here.

TACHINIDAE

Lophosia fasciata Mg.— An example of this rare and distinctive species bred from a hawthorn shieldbug, *Acanthosoma haemorrhoidale* L., the fly emerging 2.vii.86; the bug beaten from a hedge in a lane, Jackwood area. See Allen, 1987a, where the words "list of" in line nine of the note should be deleted. Seemingly a new host record, and probably the first for W. Kent and the London area.

Macquartia grisea (Fall.).— One basking in evening sunshine on leaf of shrub, 17.v.80. None of this genus is at all common.

Dexiosoma caninum (F.).— Either very local or erratic at Oxleas; very conspicuous as it sits with outspread wings and legs on leaves of bushes etc., vii-viii. Said to be a parasite of cockchafer (*Melolontha*) larvae; but I have never seen this beetle in the district, where it seems replaced by its

smaller relative the summer chafer (*Amphimallon solstitiale*). This is, however, not a woodland beetle but one of open grassland, gardens etc, where *D. caninum* seems not to be found, and no chafer has ever occurred to me either at Oxleas or in a park at Charlton where I have seen the fly, again in a wooded area. Its host in this district thus remains a mystery.

Gymnocheta viridis (Fall.).— This handsome, greenbottle-like species appears erratically; several noted on oak trunks in one area (N.W. sector), June 1986, otherwise odd individuals only, in early spring.

RHINOPHORIDAE

Paykullia maculata (Fall.).— Another distinctive fly which has occurred three or four times, always singly, on tree trunks and by sweeping, August to early October; I have seen it wing-waving like a Tephritid. A woodlouse parasite, uncommon but well distributed in the district.

SCATOPHAGIDAE

Norellia spinipes (Mg.).— A male brushed from oak foliage, western margin of wood, 13.vii.86; another in the same general area (not caught), 6.vii.87. A fairly recent addition to our list, now known from several home counties including W. Kent. There were no daffodils (the larval food) at or near the above site. (The other record for this district is of one from my Charlton garden, 5.iv.86.)

ANTHOMYIIDAE

Chirosia betuleti (Ringd.).— Male swept in the Jackwood area, 29.v.77, doubtless from bracken.

C. histricina (Rond.)— Not uncommon off young shoots of bracken in the eastern sector, late May 1989.

C. (Pycnoglossa) flavipennis (Fall.).— Off bracken; apparently rare; two noted in the Jackwood area, 29.v.77.

Hydrophoria ruralis (Mg.).— Mr D.M. Ackland tells me this is common, so it is worth remarking that it must be extremely local in this district. I have met with it only along a short stretch of woodland path at Oxleas where it was not at all scarce in early August 1988, and nowhere else.

Eustalomyia hilaris (Fall.).— See Smith, 1971, 1989; Chandler, 1976: 17; Allen, *Ent. mon. Mag.* in press. I caught a female settled on top of a post, 13.vi.86; and another on an oak log, 1.viii.88. I have taken it elsewhere in the district (records in press), otherwise it is so far recorded, apparently, only from Middlesex and Berkshire. *E. festiva* (Zett.) and *E. histrio* (Zett.) also occur at Oxleas, where the males of the latter assemble on a small area of a particular oak (Allen, *supra*).

Pegomya nigrisquama Stein.— This dark-looking late autumn species was plentiful about ivy in flower, 29.x.84.

FANNIIDAE

Fannia gotlandica Ringd.— A decidedly scarce fly of which a female was found on the hollow oak rather low down, 5.viii.87.

MUSCIDAE

Alloeostylus simplex (Wied.).— A male at rest on a larch trunk, 3.viii.88. Must be rare in the district; I have found a dead but fresh female being dragged away by ants in Charlton sandpits.

Phaonia exoleta (Mg.).— Two females have been caught on the hollow tree (27.v.88, 1.viii.90), but no male seen. A rare species developing in rotten wood, with one previous Kent record.

P. trigonalis (Mg.).— Scarce; at the Cossus oak, on a sappy patch (see under *Ferdinandea* (Syrphidae)), vii.88, and the hollow oak, vii,90. One of the uncommon sap-feeding *Phaonia* spp., recorded by Fonseca (1968: 22) from only five counties, which, with the closely-allied *P. pratensis* Dsv., is hardly rare in this district; the latter species also doubtless occurs at Oxleas. *P. cincta* (Zett.), another succicole, is common at the hollow oak and wherever suitable habitats occur in the district.

Mydaea detrita Zett.— A male swept in bed of dried-up pond, 18.ix.88. (I have taken it once or twice at Blackheath.)

Helina pertusa Mg.— On tree trunks, including the hollow oak. Said to be uncommon, but general throughout this district.

Coenosia alleni Fons.— A pair basking in evening sunshine on a high hawthorn hedge, 25,v,78. Described from Blackheath and not uncommon hereabouts, but hitherto little recorded, if at all.

Acknowledgements

My best thanks to Messrs P.J. Chandler, E.A. Fonseca, A.C. Pont and Dr J.W. Ismay for their valued determinations of critical specimens.

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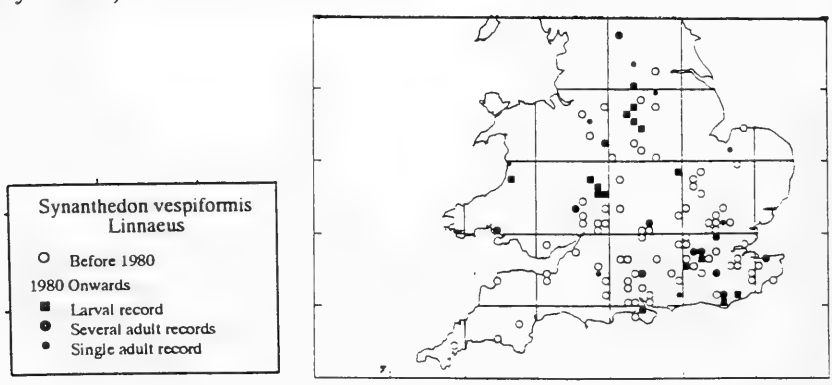
Synanthedon vespiformis Linnaeus, Yellow-legged Clearwing (Lep.: Sesiidae) — first Staffordshire records for 58 years

I have collected four specimens of the Yellow-legged Clearwing moth at Sandon Hall, Staffordshire (SJ 95532853). All specimens were collected in a Malaise trap with black walls and a white roof. Single female specimens were collected on the following dates: 9.vi.92, 13.vi.92 and 20.vi.92, and a single specimen was collected on 8.vii.92. The Malaise trap was sited in a small clearing in deciduous woodland. The species has not been recorded in Staffordshire since 1934 when it was taken at Burntwood by H.L. Burrows. The identification was confirmed by Richard Warren the County Recorder for Staffordshire, voucher specimens have been retained for each of the above records.

The distribution map is a draft version supplied by Paul Waring and produced from the data-base of the National Network for Recording the Rarer British Macro-moths. The map includes the up-to-date information collected by the network of county moth recorders and data kindly supplied by the Biological Records Centre, Monks Wood and the Rothamsted Insect Survey. The project is supported by the Joint Nature Conservation Committee.— MICHAEL C. BRIAN, 1 Trevelyans Green, Trinity Fields, Stafford ST16 1LJ.



COLEOPHORA FOLLICULARIS (VALLOT) (LEPIDOPTERA: COLEOPHORIDAE): CAN ONE SPECIES USE TWO METHODS IN THE CONSTRUCTION OF ITS LARVAL CASE?

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RESEARCH into the early stages of the Coleophoridae undertaken for Volume 3 of *Moths and Butterflies of Great Britain and Ireland* has shown that *Coleophora follicularis* certainly has two races and possibly consists of two species; hereafter in this article the word "race" will be used. There can be no confusion of either with *C. trochilella* (Duponchel), the larva of which is distinct. In *C. follicularis* the head is black or mid-brown according to race, the prothoracic plate blackish brown to black and the body dull green; in *C. trochilella* the head is yellow-brown, the prothoracic plate yellow-brown with the posterior edge darker and the body pale yellowish sometimes with a greenish tinge.

The two races of *C. follicularis* are associated with the two principal foodplants, hemp-agrimony (*Eupatorium cannabinum*) and common fleabane (*Pulicaria dysenterica*). The young plants of the latter appear about a month later than the former and the timing of the two races is affected accordingly. This alone would not be sufficient to cause racial distinction. *C. conyzae* Zeller feeds on ploughman's spikenard (*Inula conyza*) and common fleabane and has adapted its timing to each. On ploughman's spikenard the larva overwinters in its first case, spring feeding starts in April and the next generation enters diapause in August. On common fleabane it overwinters in its second case, recommences feeding in May and the next generation feeds in September. The adults from ploughman's spikenard appear about a fortnight before those from common fleabane. In *C. follicularis* the difference in timing precludes interbreeding between the two races and in some localities at any rate where both foodplants are present, the larvae are found only on one.

The clearest way to express the differences in life history is to compare the races stage by stage.

Ovum. The larvae of both races seem to move away from the oviposition site before starting to feed. In consequence I failed to find the egg of either. On hemp-agrimony feeding begins on the smaller, tender leaves near the top of the plant; on common fleabane the larger, lower leaves are preferred.

Larva. The difference in larval coloration is that on hemp-agrimony the head is black and on common fleabane it is mid-brown. The prothoracic plate is black on the former and blackish brown on the latter, but this difference is too slight to be of diagnostic importance.

On hemp-agrimony feeding starts in mid-July. The larva makes a small blotch mine measuring *c.* 2.5 x 1.0mm which it excises as the foundation of

its case. It then attaches its case to the underside of the leaf and excavates small blotches. Almost at once it starts to extend the anal end of its case with silk and to increase its girth by means of a ventral silken "gusset". After a few days, this process is repeated. Feeding is continued until mid-August when the larva attaches its case to a firm surface for winter diapause. The mouth angle is about 30°.

On common fleabane feeding starts in early September. The larva does not make a blotch mine which is excised, but bores directly into the leaf and cuts a ring of leaf cuticle from the point of entry. Numerous small mines are made and each time a ring is added. At this stage the minute case is attached vertically to the leaf and until the anal end is modified by spinning it consists of a short, straight, open tube; the anal end is then closed by means of a very short silken extension, usually without any defined valves. The larva continues to extend the anterior end of its case with rings, but with this difference. It gradually decreases the mouth angle, causing the oral end to become curved. By the time the "ring" method of case construction has been concluded, a mouth angle of from 0° - 10° has been established. The larva feeds on by making blotches in the leaves, generally from below but sometimes attached to the upper surface, and now enlarges its case in a manner similar to those on hemp-agrimony, i.e. silken extension to the anal end and the insertion of ventral gussets. Soon the leaf rings are severed beneath and are confined to the dorsal surface, where their origin is betrayed by their hairiness.

There is little difference in the method of feeding in spring except in timing; those on hemp-agrimony are fully fed in mid-May, those on common fleabane in mid-June. The feeding blotches on hemp-agrimony are pale with brown centres (absent in autumn), whereas those on common fleabane are unicolorous; however, this may be due to a different characteristic of the foodplant. The mouth angle on the cases on common fleabane continues to be distinctly less than in those on hemp-agrimony. The larvae on common fleabane are gregarious, but there are seldom more than two or three on a plant of hemp-agrimony, and one is more usual.

Imago. Adults reared in 1992 on hemp-agrimony emerged between 13 and 19 June; those on common fleabane between 7th July and 7th August.

I would welcome corroboration, correction, criticism or comments on the contents of this paper as soon as possible, so that the facts can be presented accurately in *Moths and Butterflies of Great Britain and Ireland* Vol. 3.

Immigration records for 1992

In order that accurate reports of lepidoptera immigration can be compiled, will readers send details (species, date, locality, method of capture and any other relevant details) of all 1992 immigration records to B. Skinner, 5 Rawlins Close, South Croydon, Surrey CR2 8JS *by the end of January 1993 at the latest.* Editor

ADDITIONS AND CORRECTIONS TO THE BRITISH LIST OF COLEOPTERA

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PTILIIDAE

Acrotrichis josephi (Matthews, 1872)

This species has a spermatheca which is identical in shape with that of *cognata* (Matthews) (=*platonoffi* Renkonen), but it may be easily distinguished from *cognata* by the absence of a bluish-grey iridescent sheen on the elytra, coarser and more spaced pronotal granulation, finer and more sparsely granulate head, and somewhat longer antennae. On external characters the species thus somewhat resembles *fascicularis* (Herbst), and can only be identified by dissection.

A single female was captured at Aughton Ings, S.E. Yorkshire, 24.vi.1987 by R.J. Marsh (in Manchester Museum). It was found in a small pile of grass mowings at the edge of a land drain. Further extensive sampling in this and adjacent allotment areas by the collector and author has failed to produce more specimens.

Some years ago I described *subcognata* on the basis of New Zealand and North American specimens (Johnson, 1975a). Lots of specimens, all females, were subsequently collected in garden refuse in Auckland, and the species was considered an adventive from north-western USA (Johnson, 1982). My friend Mikael Sörensson has recently examined some of this material and tells me (*in litt.*) that *subcognata* is identical with the types of *josephi,* described from Vancouver (Matthews, 1872).

SCIRTIDAE

Elodes minuta auctt. Brit.

Available British *"Helodes minuta"* from the Manchester Museum were revised by B. Klausnitzer during 1972/73. He identified males as *minuta* (Linnaeus), *pseudominuta* Klausnitzer and *koelleri* Klausnitzer, the last two species being new to Britain although the records were not published. According to the reviser, differences within the *minuta* group are to be found in the males — tergite 8, sternite 8 and aedeagus (Klausnitzer, 1971). A further key to the group was given by Lohse (1979). More recently, changes in nomenclature have been made by Nyholm (1985).

I have examined the remainder of Manchester's material, and identified males on the basis of the protruding parts of tergite 8, as this character is easy to see without dissection. This led to the discovery of a third additional British species, *tricuspis* Nyholm. Localities of all males are given below, those identified by Klausnitzer being asterisked * after the collector's name.

Elodes minuta **(Linnaeus, 1767)**

Ches.: Bollington (J.R. Hardy); Bucklow Hill (H.R.P. Collett*); Dunham Park (C. Johnson). *Cumberl.*: Great Salkeld (H. Britten*). *Derbys.*: Sudbury (C. Johnson). *Hants., N.*: Yateley (E.M. Eustace). *Herefords.*: Treago (R.W. Lloyd*). *Kent*: no locality (W.G. Blatch). *Monmouth*: Skenfrith (R.W. Lloyd*). *Oxon.*: Brasenose (H. Britten*). *Salop*: Drenewydd (J. Hignett). *Staffs*: Burton-on-Trent (W.G. Blatch); Cannock (W.G. Blatch). *Sussex, E.*: Guestling (E.P. Collett*). *Warwicks.*: Sutton Coldfield (W.G. Blatch).

Elodes pseudominuta **Klausnitzer, 1971**

Berks.: Windsor (E.M. Eustace*). *Ches.*: Arden Hall (H. Britten*); Bollington (J.R. Hardy); Goyt Valley (H.R.P. Collett*); Rostherne (H. Britten*). *Cumberl*: Gelt (H. Britten*). *Denbigh*: Colwyn (W. Potter); Llanferres (S. Bowestead). *Lancs, S.*: Ashton Moss (W. Potter); Droylsden (W. Potter). *Skye*: Isle of Rhum, Halival (W.O. Steel). *Staffs.*: Cannock (W.G. Blatch).

Elodes elongata **Tournier, 1868 (= *koelleri* Klausnitzer, 1970)**

Nyholm (1985) has recently shown that the real *elongata* is identical with *koelleri,* differing from previous interpretations. He records the species from Ireland, as well as from other continental localities.

Armagh: Armargh (W.G. Blatch coll.). *Ches.*: Bollington (J.R. Hardy); Dunham Massey (H.R.P. Collett). *Derbys.*: Calke Park (C. Johnson); Miller's Dale (J.K. Taylor*). *Essex, N.*: Walton-on-Naze (C. Johnson. *Herefords.*: Treago (R.W. Lloyd*). *Isle of Wight*: Sandown (R.W. Lloyd). *Kent, W.*: Tonbridge (W.G. Blatch). *Monmouth*: Skenfrith (R.W. Lloyd*). *Oxon*: Thame Park (H. Britten*). *Staffs.*: Cannock (W.G. Blatch).

Elodes tricuspis **Nyholm, 1985 (= *elongata* sensu Klausnitzer)**

This newly-described species is the *"elongata"* of both Klausnitzer (1971) and Lohse (1979). I have seen only two males of this further new British species.

Herefords.: Garron Weir, 10.vi.1945 (R.W. Lloyd). *Notts.*: Sherwood (W.G. Blatch).

DRYOPIDAE

Dryops griseus **auctt. Brit.**

In his Italian revision, Olmi (1976) circled *similaris* Bollow as a British insect, on the basis of specimens from the British Museum (Nat. Hist.). He did not apparently see any of the real *griseus* (Erichson), so his circling of Britain on the map of that species is presumably based on literature records. The name *similaris* has subsequently replaced *griseus* on the British list (Friday, 1988). While revising material in the Manchester

Museum some years ago, I found specimens of both *similaris* and *griseus*. The common *luridus* (Erichson) was often misidentified as *"griseus"*, probably because of the somwhat similar shape when viewed dorsally. *D. luridus* has brown elytra and is smaller, 3.8 - 4.5mm. Both *similaris* and *griseus* have black elytra, *similaris* measuring 4.6 - 5.1mm, and *griseus* at 4.8 - 5.5mm being one of our largest species. The aedeagus of *griseus* in dorsal view is much bigger, broader, blunter apically and more obviously asymetrical than in *similaris,* but it is in the characters of the apical half in ventral view seen with transmitted light at higher magnifications where major distinctions lie, as figured by Steffan (1961) and Olmi (1972, 1976). The parameres of *similaris* possess a sub-apical process above a mosaic of coarse microsculpture on the inner edge near the apex, both these features being absent in *griseus*. It should be noted that the figures given by Steffan (1979) are unfortunately transposed. Records of males seen by me are as follows:

***Dryops griseus* (Erichson, 1847)**

Norfolk, W.: Walton Common, 25.v.1979 (C. Johnson), 5 males. *Yorks, M.W.*: Askham Bog, 25.iv.1952 (S. Shaw), 2 males.

***Dryops similaris* Bollow, 1936**

Hants., S.: Brockenhurst, 1916 (D. Sharp), 1 male; New Forest (T.H. Edmonds), 3 males. *Kent, E.*: Ashford, 28.vi.1902 (E. Gamble), 1 male. *Sussex, E.*: Camber, 28.iv.1901 (H. Britten coll.), 1 male.

Unassociated females which, on the basis of external and ovipositor characters might be *similaris* are from W. Cornwall, S. Devon, Oxon and Salop. A large unassociated female from Oxford, 1934, collected by J.J. Walker, might be *griseus*.

ANOBIIDAE

Ernobius abietis (Fabricius, 1792)

Whether or not *abietis* is a British insect has been the subject of much debate. Sharp (1916) demonstrated that none of the older records from the time of Stephens up to a reputed Scottish specimen taken by Turner and quoted by Fowler (1890) could be referred to the species. A record from the New Forest (Donisthorpe, 1899) was not discussed by Sharp (*loc. cit*). This same record was repeated by Fowler and Donisthorpe (1913) who wrote: "There is, however, a specimen in the late Mr F. Bates' collection, which was sent to him alive by C. Guliver from the New Forest in June 1899, which is undoubtedly this species (*Ent. Record,* 1899, p.340)". Johnson (1966) discussed this record in the absence of any specimens. He felt that there was no justification for including *abietis* in the British List in view of the confusion and uncertainty which the name had caused British coleopterists in the past. There the matter seemed destined to lie.

Recently, while revising *Ernobius* in the B.S. Williams' collection at Liverpool Museum, I was surprised to find a correctly identified *abietis* labelled in Williams' hand "New Forest 6.1899, C. Gulliver". Investigations subsequently revealed that Bates' collection was acquired by B.S. Williams via G.W. Nicholson (Darby, 1981 -), so this specimen is clearly the source of the New Forest record. I have dissected the specimen, a male, and apart from a slight rounding off of the outer part of the median lobe, the aedeagus agrees with that of *abietis*.

E. abietis has been keyed out, described and figured in a number of recent works (Johnson, 1966, 1975b; Lohse, 1969). It breeds in fallen cones of fir or spruce on the continent, and its biology is discussed at length by Trägardh (1924).

CRYPTOPHAGIDAE

Caenoscelis sibirica Reitter, 1889

Due to the very close proximity of the submarginal line to the pronotal sides, and symmetrical antennal segment two, *sibirica* comes closest to *ferruginea* (C.R. Sahlberg). It may be separated from the latter species by its larger size (1.9 - 2.3mm), broader form, more robust build, thicker antennae with broader segment nine, duller dorsum, broader and shorter pronotum and elytra. The distinctive aedeagi of all three known European *Caenoscelis* have been figured by Palm (1943) and Lohse (1967). In these works, the present species is known as *grandis* Thomson and *fleischeri* Reitter respectively, prior to synonymisation with *sibirica* Reitter (Johnson, 1986).

I have seen a single female specimen captured at Huddersfield, S.W. Yorks, 7.ii.1981, by M.L. Denton (in Manchester Museum). It was found under a stone at the edge of woodland. Further assiduous sampling of dead wood by the captor and author failed to produce other specimens. The species is likely to have a northern distribution in the British Isles in view of its boreo-alpine continental distribution pattern, and should be sought around rotten tree stumps and wood in hilly districts.

ENDOMYCHIDAE

Sphaerosoma piliferum auctt. Brit.

Our single British *Sphaerosoma* is not *piliferum* (Müller, 1821), but is *pilosum* (Panzer, 1793). The differences between these two species are given by Vogt (1967). The true *piliferum* can be easily distinguished from *pilosum* by its distinctly smaller size and the much longer and more semi-erect pubescence of the dorsum. On the continent, *pilosum* is the commonest and most widespread species in the genus, *pilifera* being more localised (Vogt, *loc. cit.*). British specimens have been compared with continental specimens of both species as follows:

Sphaerosoma piliferum

France — Aveyron: Cantobre-Nant, 4-17.viii.1988 (C. Johnson), 8 ex.

Sphaerosoma pilosum

France — Aveyron: Cantobre-Nant, 4-17.viii.1988 (C. Johnson), 3 ex; Finistere: Huelgoat, 22.vi.1984 (C. Johnson), 1 ex. Switzerland — Valais: Bourg St Pierre, 24.vi.1976 (C. Johnson), 1 ex.; Genève: Bois de Merdisel, 14.viii.1985 (C. Johnson), 2 ex.

In Britain, *pilosum* seems to range as far north as southern Scotland (Crowson, 1962), but would seem very sporadic away from the south and east of England.

LATRIDIIDAE

Corticaria polypori J. Sahlberg, 1926

Closely allied to *alleni* Johnson due to the body size, form of the eyes and shape of the temples, antennal structure, pronotal shape, colour and male secondary sexual characters on the legs. The elytra are slightly more oval and more coarsely punctured than in British *alleni*. The two species can best be distinguished by the shape of the apical part of the aedeagus in dorsal and lateral aspects (see Johnson, 1974).

I have seen two British specimens as follows: Aviemore, 30.ix.1943 (P. Harwood), 1 female (in Oxford University Museum); Black Wood, Rannoch, 31.v.1988, on gill fungi (A.B. Drane), 1 male.

The species seems to be somewhat rare in northern and central Europe, and Swedish colleagues frequently collect it on the underside of fresh *Fomes fomentarius* bracket fungi on dead birch. It will probably prove to be confined to the Scottish Highlands. *C. alleni* on the other hand is a species of southern/south-eastern England extending north to Sherwood Forest. It occurs under bark or in rotten wood of old broad-leaved trees, especially in areas of oak and beech.

Acknowledgements

My best thanks are due to the following for their kind co-operation: M. Sörensson, for permission to include the name *josephi*; R.J. Marsh and M.L. Denton for their gift of unique specimens to the Manchester Museum, and for arranging fieldwork in Yorkshire; B. Klausnitzer, for identification of *Elodes*; G.N. Foster, for discussion on *Dryops*; S. Judd for the loan of *Ernobius* from the Williams' collection; B. Ehnström for information on Trägardh's paper and *Corticaria*: C. O'Toole and A.B. Drane for the loan of British *Corticaria*.

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Further records of *Udea fulvalis* Guen. from Dorset

My suggestion earlier this year (*Ent. Rec,* **104**: 49) that four specimens of *fulvalis* taken in my garden were from a local colony has now received further suport.

Between 10th and 19th July 1992 a further five specimens have turned up in the garden. Only two entered my Robinson light trap, all the rest were found sitting on lighted windows between 22.00 and 23.00 hours. Attempts to locate any of its known foodplant in the area have so far failed.— E.H. WILD, 7 Abbots Close, Highcliffe, Christchurch, Dorset.

THE SPREAD OF THE DOTTED RUSTIC *RHYACIA SIMULANS* HUFNAGEL (LEP.: NOCTUIDAE) IN BRITAIN, AS REPORTED BY THE NATIONAL NETWORK FOR RECORDING THE RARER BRITISH MACRO-MOTHS

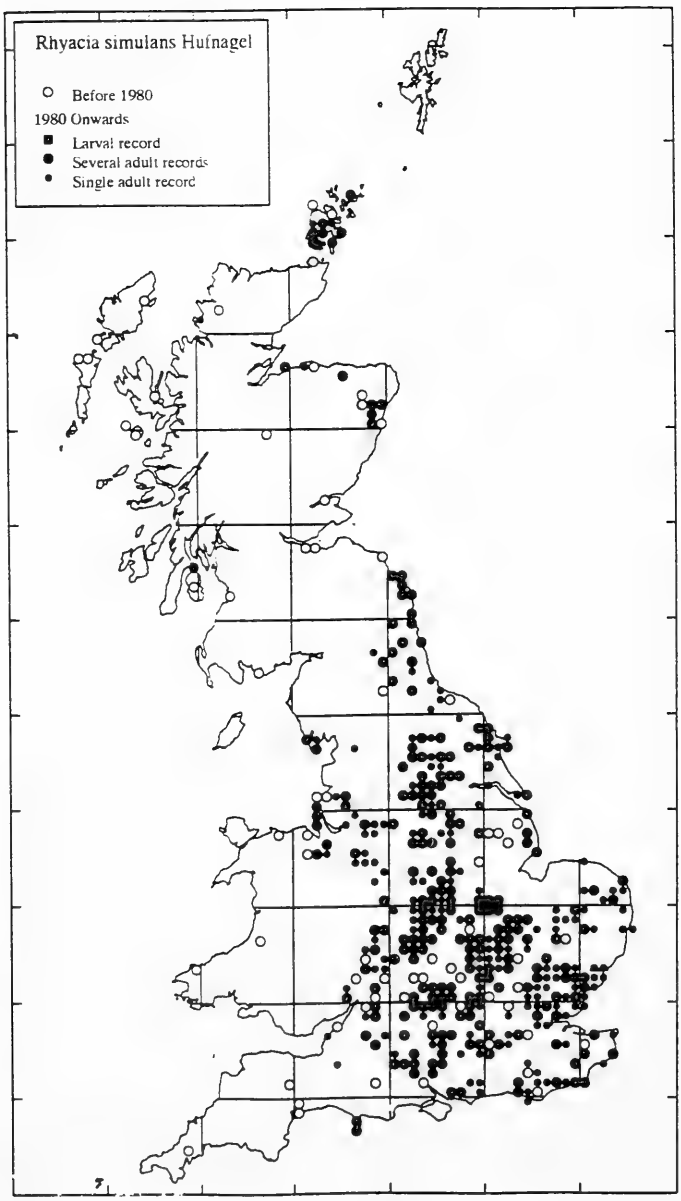
PAUL WARING

Windmill View, 1366 Lincoln Road, Werrington, Peterborough PE4 6LS.

AS REGULAR readers of this journal will know, a national network for recording the rarer British macro-moths was established at the beginning of 1991 for collecting together all the records of selected species from 1980 onwards to enable a national review of their status (*Ent. Rec.* **103**: 193-196). The network was built by linking together all existing county-based recording schemes. Consequently readers who already send their records to a county recorder can rest assured that their results have been incorporated. The first aim of the network is to produce up to date distribution maps for the resident species of macro-moths which are believed to have been recorded from less than 100 of the 10km squares in Britain from 1980 onwards. A list of these rarer species is included at the end of this paper and if you have records of any dating from 1980 onwards that have not already been sent to a county recorder or to the Biological Records Centre, Monks Wood, I would be grateful to receive them, preferably via the county recorder, so that they can be included in the distribution maps. All records from the Rothamsted Insect Survey have already been included. Post-1979 records published in the *Ent. Rec., Ent. Gaz.,* and *British Journal of Entomology and Natural History* have also been included, where sufficient details are given to enable mapping on a 10km square basis, excluding only the records listed as immigrants or vagrants in the annual reviews of immigration published by Messrs Bretherton and Chalmers-Hunt in this journal. A directory listing the addresses of county recorders and local biological recording centres throughout Britain is available free by sending to me an A4 (12 x 8½″) stamped (28p) addressed envelope. The maps and the results of the review are to be published by the Joint Nature Conservation Committee (JNCC) in the form of an Atlas in 1993. The JNCC is the government nature conservation agency responsible for national and international issues.

The need to review the distribution and status of moth species on a frequent basis and to keep the national data-base up to date is well illustrated by the example of *R. simulans*. The most recent distribution map for this species was published by Heath and Emmet (*Moths and Butterflies of Great Britain and Ireland* Vol. 9, 1979, reprinted 1983). On the basis of the map *R. simulans* occurs in less than one hundred 10km squares and was therefore categorised by the former Nature Conservancy Council as a nationally notable species (Hadley, *A national review of the British Macro-lepidoptera,* 1984, unpublished). Since the map was prepared the species has undergone a genuine and well-documented expansion in range with

reports from many new areas (e.g. *Ent. Rec.* **90**: 210, 324; **91**: 136-137, 260, 316; **92**: 193, 242, 250, 279; **93**: 35, 125; **94**: 163, 200, 207-208, 237; **95**: 67, 87-88, 117; **96**: 285-286, **99**: 111-114, **102**: 285-286). The accompanying map summarises the data on *R. simulans* collected recently by the national network. The filled in black dots are records from 1980 onwards, not post-1960 as in the Heath and Emmet map. The national data-base now contains 839 records for the species which has been recorded from nearly four hundred 10km squares in the years from 1980 to 1991 inclusive. The first drafts of similarly up to date distribution maps are now ready for all the species listed below but because of recent advances in computer



0160 Phragmataecia castaneae
0162 Cossus cossus
0163 Adscita statices
0164 Adscita geryon
0165 Adscita globulariae
0166 Zygaena exulans
0167 Zygaena loti
0168 Zygaena viciae
0172 Zygaena purpuralis
0173 Apoda limacodes
0174 Heterogenea asella
0370 Sesia apiformis
0371 Sesia bembeciformis
0372 Paranthrene tabaniformis
0373 Synanthedon tipuliformis
0374 Synanthedon vespiformis
0375 Synanthedon spheciformis
0376 Synanthedon scoliaeformis
0377 Synanthedon flaviventris
0378 Synanthedon anthraciniformis
0379 Synanthedon myopaeformis
0380 Synanthedon formicaeformis
0381 Synanthedon culiciformis
0382 Bembecia scopigera
0383 Bembecia muscaeformis
0384 Bembecia chrysidiformis
1633 Eriogaster lanestris
1635 Malacosoma castrensis
1636 Lasiocampa trifolii
1641 Phyllodesma ilicifolia
1644 Endromis versicolora
1647 Drepana cultraria
1650 Sabra harpagula
1655 Tethea or
1656 Tetheella fluctuosa
1662 Archiearis notha
1664 Aplasta ononaria
1668 Thetidia smaragdaria
1670 Chlorissa viridata
1672 Thalera fimbrialis
1675 Cyclophora pendularia
1676 Cyclophora annulata
1679 Cyclophora porata
1683 Scopula immorata
1684 Scopula nigropunctata
1687 Scopula ornata
1688 Scopula rubiginata
1691 Scopula emutaria
1696 Idaea ochrata
1698 Idaea muricata
1699 Idaea vulpinaria
1701 Idaea sylvestgraria
1704 Idaea dilutaria
1706 Idaea humiliata
1710 Idaea contiguaria
1714 Idaea degeneraria
1718 Mesotype virgata
1721 Xanthorhoe biriviata
1731 Scoptopteryx bipunctaria
1735 Catarhoe rubidata
1741 Costaconvexa polygrammata
1743 Entephria flavicinctata
1751 Lampropteryx otregiata
1763 Chloroclysta concinnata
1770 Thera cognata
1771 Thera juniperata
1772 Eystroma reticulatum
1774 Colostygia olivata
1779 Hydriomena ruberata
1780 Coenocalpe lapidata
1785 Pareulype berberata
1786 Sparganis luctuata
1787 Rheumaptera hastata
1788 Rheumaptera cervinalis
1791 Philereme vetulata
1793 Euphyia biangulata
1798 Epirrita filigrammaria
1801 Perizoma taeniatum
1805 Perizoma minorata ericitata
1806 Perizoma blandiata
1810 Perizoma sagittata
1812 Eupithecia inturbata
1814 Eupithecia plumbeolata
1815 Eupithecia abietaria
1818 Eupithecia irriguata
1820 Eupithecia insigniata
1821 Eupithecia valerianata
1822 Eupithecia pygmaeata
1823 Eupithecia venosata
1824 Eupithecia egenaria
1826 Eupithecia trisignaria
1833 Eupithecia expallidata
1836 Eupithecia denotata
1840 Eupithecia subumbrata
1841 Eupithecia millefoliata
1843 Eupithecia distinctaria
1844 Eupithecia indigata
1845 Eupithecia pimpinellata
1847 Eupithecia extensaria
1851 Eupithecia virgaureata
1853 Eupithecia dodoneata
1859 Chloroclystis chloerata
1861 Chloroclystis debiliata
1863 Anticollix sparsata
1865 Chesias rufata
1866 Carsia sororiata
1871 Lithostege griseata
1872 Discoloxia blomeri
1877 Hydrelia sylvata
1878 Minoa murinata
1880 Tricopteryx polycommata
1889 Semiothisa notata
1895 Semiothisa carbonaria
1896 Semiothisa brunneata
1899 Isturgia limbaria
1901 Cepphis advenaria
1905 Pachycnemia hippocastanari
1908 Epione paralellaria
1911 Ennomos autumnaria
1928 Lycia zonaria
1929 Lycia lapponaria
1937a P.secundaria
1938 Selidosema brunnearia
1939 Cleora cinctaria
1940 Deileptenia ribeata
1942 Alcis jubata
1943 Boarmia roboraria
1945 Cleorodes lichenaria
1946 Fagivorina arenaria
1949 Ectropis consonaria
1950 Ectropis extersaria
1959 Aleucis distinctata
1963 Gnophos obfuscatus
1965 Psodos coracina
1966 Siona lineata
1967 Aspitates gilvaria
1969 Dyscia fagaria
1970 Perconia strigillaria
1982 Hemaris tityus
1983 Hemaris fuciformis
1996 Furcula bicuspis
2009 Ptilodontella cucullina
2012 Leucodonta bicoloria
2013 Ptilophora plumigera
2017 Clostera pigra
2018 Clostera anachoreta
2024 Laelia coenosa
2025 Orgyia recens
2027 Digallomera fascelina
2034 Lymantria dispar
2036 Setina irrorella
2039 Atolmis rubricollis
2041 Pelosia muscerda
2042 Pelosia obtusa
2043 Eilema sororcula
2045 Eilema caniola
2046 Eilema pygmaeola
2048 Eilema sericea
2053 Coscinia cribraria
2056 Parasemia plantaginis
2062 Spilosoma urticae
2067 Euplagia quadripunctaria
2068 Callimorpha dominula
2075 Meganola strigula
2076 Meganola albula
2079 Nola aerugula
2080 Euxoa obelisca
2083 Euxoa cursoria
2084 Agrotis cinerea
2090 Agrotis trux
2093 Agrotis ripae
2099 Ochropleura praecox
2103 Eugnorisma depuncta
2105 Rhyacia simulans
2108 Noctua orbona
2115 Eugraphe subrosea
2116 Paradiarsia sobrina
2125 Xestia alpicola
2129 Xestia ashworthii
2131 Xestia rhomboidea
2140 Cerastis leucographa
2143 Anarta cordigera
2144 Anarta melanopa
2148 Polia bombycina
2149 Polia hepatica
2151 Pachetra sagittigera
2152 Sideridis albicolon
2153 Heliophobus reticulata
2156 Lacanobia contigua
2165 Hecatera dysodea
2168 Hadena irregularis
2169 Hadena luteago barrettii
2172 Hadena albimacula
2174 Hadena caesia
2175 Eriopygodes imbecilla
2181 Egria conspicillaris
2185 Orthosia populeti
2191 Mythimna turca
2200 Mythimna favicolor
2201 Mythimna litoralis
2202 Mythimna l-album
2204 Mythimna obsoleta
2206 Mythimna putrescens
2209 Senta flammea
2211 Cucullia absinthii
2217 Cucullia asteris
2218 Cucullia gnaphalii
2219 Cucullia lychnitis
2223 Calophasia lunula
2226 Leucochlaena oditis
2228 Brachionycha nubeculosa
2229 Dasypolia templi
2230 Aporophyla australis
2233 Lithomoia solidaginis
2236 Lithophane socia
2238 Lithophane furcifera
2242 Xylena exsoleta
2253 Polymixis xanthomista
2257 Jodia croceago
2260 Conistra rubiginea
2261 Conistra erythrocephala
2275 Xanthia gilvago
2276 Xanthia ocellaris
2277 Moma alpium
2285 Acronicta strigosa
2288 Acronicta euphorbiae
2290 Simyra albovenosa
2295 Cryphia muralis
2304 Trachea atriplicis
2311 Ipimorpha retusa
2313 Enargia paleacea
2315 Dicycla oo
2316 Cosmia affinis
2317 Cosmia diffinis
2320 Hyppa rectilinea
2323 Apamea sublustris
2325 Apamea oblonga
2332 Apamea pabulatricula
2344 Photedes captiuncula
2346 Photedes morrisii morrisii
2346 P.m.bondii
2347 Photedes extrema
2348 Photedes elymi
2349 Photedes fluxa
2351 Photedes brevilinea
2354 Luperina nickerlii leechi
2354 L.n.gueneei
2354 L.n.nickerlii
2362 Hydraecia petasitis
2363 Hydraecia osseola
2365 Gortyna borelii
2370 Archanara geminipuncta
2371 Archanara dissoluta
2372 Archanara neurica
2373 Archanara sparganii
2374 Archanara algae
2376 Sedina buettneri
2378 Oria musculosa
2391 Chilodes maritimus
2392 Athetis pallustris
2393 Acosmetia caliginosa
2396 Elaphria venustula
2401 Heliothis viriplaca
2402 Heliothis maritima
2412 Eustrotia uncula
2413 Deltote bankiana
2414 Emmelia trabealis
2418 Earias clorana
2435 Diachrysia chryson
2440 Plusia putnami
2447 Syngrapha interrogationis
2454 Catocala promissa
2455 Catocala sponsa
2465 Tyta luctuosa
2467 Lygephila craccae
2472 Colobochyla salicalis
2475 Parascotia fuliginaria

2476 Hypena crassalis
2478 Hypena obsitalis
2480 Hypena rostralis
2482 Schrankia taenialis
2483 Schrankia intermedialis
2485 Hypenodes turfosalis
2488 Herminia strigilata
2491 Herminia tarsicrinalis
2493 Macrochilo cribrumalis
2494 Paracolax derivalis
2495 Trisateles emortualis

1694 Scopula ternata
1924 Angerona prunaria
1968 Aspitates ochrearia
2137 Eurois occulta (dark,northern form)
2184 Orthosia opima
2262a Agrochola haematicea
2379 Coenobia rufa
2324 Apamea exulis/maillardi

technology it is easy to add any additional records and keep the maps up-dated. Any records for inclusion in the Atlas should reach me by Christmas 1992. Once the Atlas is completed we cannot be complacent and it is hoped that the data-base can be regularly up-dated thereafter. There are already reports from some recorders that *R. simulans* may be on the decline in some areas. Although it does not currently qualify for inclusion in the Atlas it is clearly one of the species moth recorders would be well-advised to keep an eye on during the 1990s.

Acknowledgements

I would like to thank all the recorders who have sent information into the network already. I would like to thank the Biological Records Centre, Monks Wood, the Rothamsted Insect Survey and the Scottish Insect Record Index (SIRI) for supplying data to the project and the Joint Nature Conservation Committee for their continuing support. In particular I thank Dr Stuart Ball for his work on the computer system used to handle the data. The distribution map was produced using the DMAP package developed by Dr Alan Morton at Imperial College, London.

The species for which post-1979 records are being collected for the Atlas Project are listed on pp.313-314 above.

***Eupithecia* spp. (Lep.: Geometridae) larvae removing frass.**

In summer 1989 I bred the Satyr Pug, *Eupithecia satyrata satyrata* Hübner, from eggs laid by a female captured in Sussex. While observing the larvae feeding on flowers of various yellow Compositae, I was surprised to see them bend sideways in a horseshoe shape and pick up in their jaws each pellet of frass as they produced it. They then straightened up and dropped the frass, which invariably fell clear of the foodplant. This behaviour was most pronounced in the middle instars.

Captive larvae of the Golden-rod Pug, *E. virgaureata* Doubleday, behaved in a similar way, but those of the Ash Pug, *E. fraxinata* Crewe, showed no apparent interest in their frass. Perhaps species which feed on flowerheads need to be particularly careful about hygiene to avoid attracting diseases, parasites or predators. G.M. Haggett (pers. comm.) kindly informs me that the habit of removing frass is widespread in the Geometridae, but that he could not recall seeing it in *Eupithecia*.— ROY LEVERTON, Whitewells, Ordiquhill, Cornhill, Banffshire AB45 2HS.

ADDITIONAL NOTES ON ABERRATIONS OF THE MEADOW BROWN (*MANIOLA JURTINA* L.) FROM NORTH DORSET

RUPERT D.G. BARRINGTON

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THE PRESENT notes continue previous observations in a hay meadow colony of *M. jurtina* which have dated from 1981 - 1991. The seasons of 1981 - 1989 were described in three previous articles (*Ent. Rec.* **96**: 259-263, **99**: 97-102 and **103**: 5-15) and the following covers 1990 and 1991. Also some records from a new Downland locality for *jurtina* in Dorset are given.

Hay meadow locality at Shaftesbury — 1990

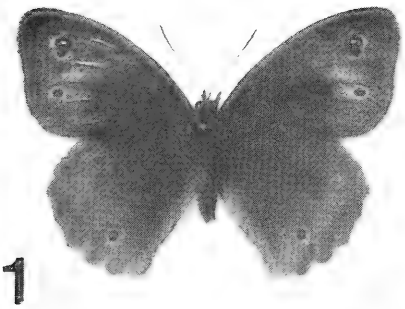
The unusual heat of the summer brought *jurtina* out about ten days early in the meadows where they were present in tremendous numbers. Only four half-days were available to study the area, work commitments taking up most of the season.

On 17th June males were abundant in warm, cloudy conditions, but only the first few, very fresh, females were emerging. In such weather the butterflies are less frenetic than on sunny days and many were feeding from knapweed and water dropwort. A mint male *subtus-albida* Silb. (fig. 7) was spotted some distance away on dropwort, its white forewings marking its position like a beacon amongst the abundant type males. This is a scarce form, particularly in the female (one female to seven males to date in this locality). The coloration of this aberration is fairly constant, ranging from creamy white to paper white. The forewing fulvous in *jurtina* varies in tone enormously from type through every shade of orange, yellow and cream to *subtus-albida*. A series of these varieties shows that they all grade into one another with the exception of *subtus-albida* which appears to be a separate aberration and it probably not genetically connected to the other pale forms.

A female *addenda* Mosley (two extra spots on the upperside of each forewing) and some male *partimtransformis* Leeds were also taken from knapweed.

The 24th June was a windy day with sunny spells. Few *jurtina* were up on the flowers but they poured out of the grass as I walked through. The only aberrations of note were a fresh male *posttransformis* Leeds (white hindwings) and a female *antiaurolancea* Leeds with the forewing fulvous broken up by darkening along the veins. Large numbers of *Inachis io* L. larvae were feeding on nettles in the hedge.

The 30th June was also windy but cool. Assessing numbers by simple observation is difficult but 1985 had clearly been the previous highest population density I had observed in this locality. With only memory to go on I doubt that I have ever seen *jurtina* as abundant as in 1990. Again, few were on the flowers, but they rose out of the grass around me in numbers that had to be seen to be believed. A male *atrescens* Leeds with black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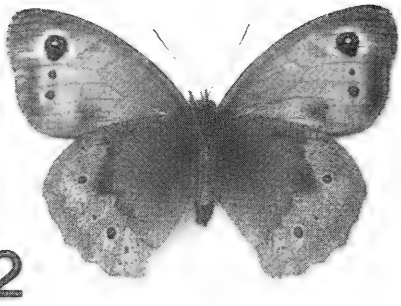
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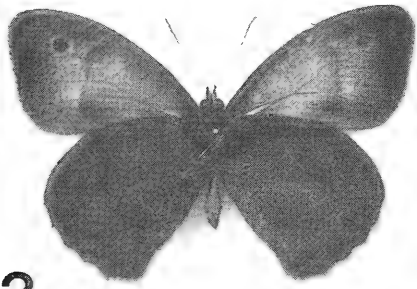
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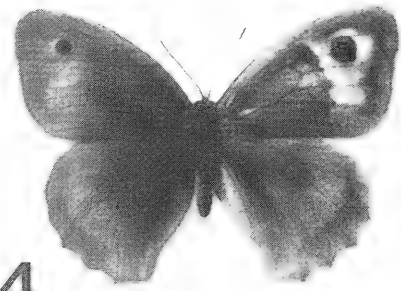
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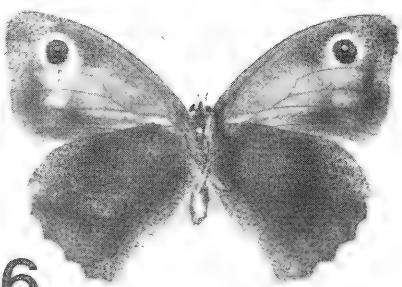
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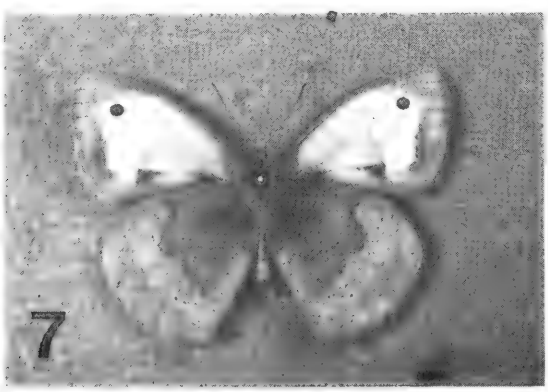
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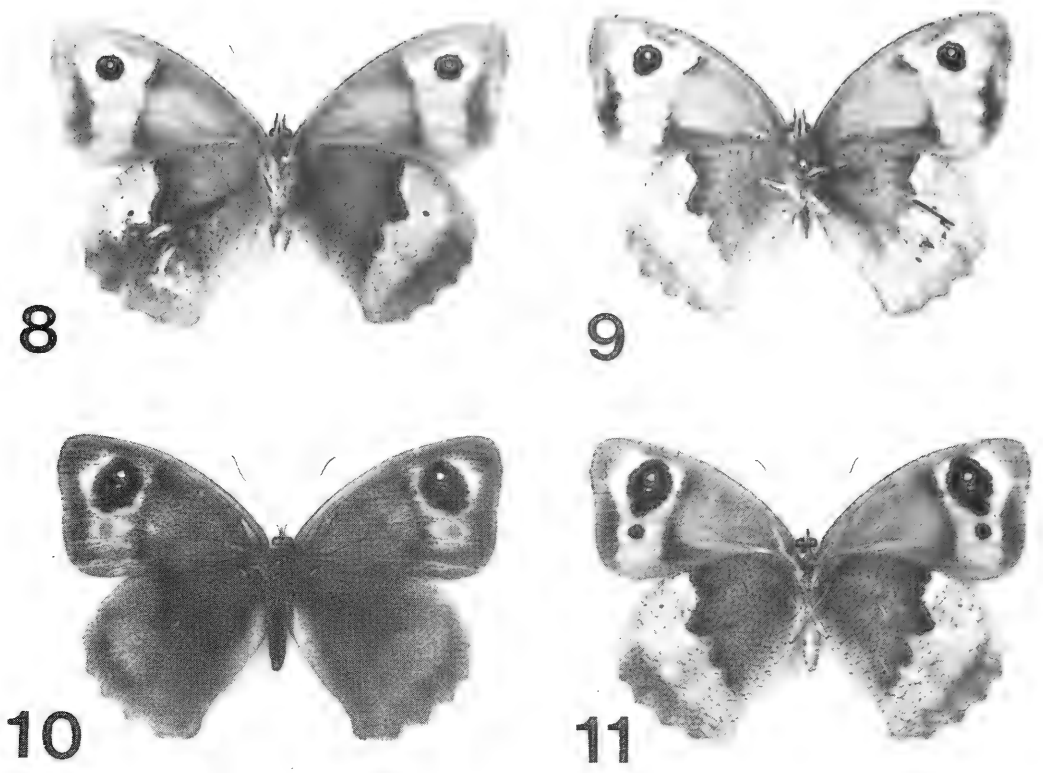

Aberrations of *Maniola jurtina* L. Fig. 1. ab. *excessa* Leeds, male upperside. Stour Row 6.7.1991; Fig. 2. ab. *excessa* Leeds, male underside. Stour Row 6.7.1991; Fig. 3 ab. *atrescens* male underside. Stour Row, 30.6.1990; Fig. 4 bilateral gynandromorph, upperside. Stour Row 6.7.1991; Fig. 5 bilateral gynandromorph + ab *addenda* Mosley. Underside. Stour Row 6.7.1991; Fig. 6 unnamed aberration, female underside. Dorset Downs 7.8.1990; Fig. 7 ab *subtus-albida* Silb. male underside. Stour Row 17.6.1990; Fig. 8 homoeosis. Female underside. Stour Row, 7.7.1991; Fig. 9 ab *irregularia* Leeds. Female underside. Dorset Downs 25.8.1991; Fig. 10 ab *crassipuncta* Leeds. Female upperside. Dorset Downs 25.8.1991; Fig. 11 ab *crassipuncta* Leeds + *addenda* Mosley. Female underside. Dorset Downs 25.8.1991. All specimens R.D.G.B.

hindwings (one crumpled) was released and another, perfect example kept (fig. 3). This aberration, like melanics in other species, is very striking in flight, the intense colour standing out strongly. Other minor aberrations were noted but not kept.

The final day in the fields was 7th July — bright and warm. A very extreme and fresh male *atrescens* with one hindwing badly deformed was released as was a worn male *subtus-albida*. A female *postmultifidus* Lipscomb was taken from thistles and another extreme example, heavily

torn, was closely observed. Other aberrations included a female upperside *addenda,* two female *commaculo* Leeds (having a marbled effect on the upper surface, probably a scale defect and not an uncommon form in the fields), a female *pallens* Thierry-Mieg (fulvous reduced to yellow) and a female *parvipuncta* Leeds.

1991

The spring and early summer, unlike the preceding two years, was appalling, but *jurtina* emerged in abundance, probably no less than in 1990. On 6th July the third *jurtina* seen was a *pallens* (a yellower and less striking form than *subtus-albida*). Two hours later I walked ten feet to net what appeared to be a female underside *addenda* from thistles. On flipping it open in the net it proved to be a perfect bilateral gynandromorph with the *addenda* characteristics on the underside of the female half only (figs. 4 and 5). A unique aberration. Moving to a patch of dropwort, a male beside me closed its wings and gave a hint of extra upperside spotting. It was an example of the very rare male *excessa* (fig. 1 and 2). It is uncommon in the female and usually only the most minor expressions are found in the male.

The following day, warm with sunny spells, two female *commaculo* were quickly seen, followed by as extreme an example of homoeosis as I have seen in this species, having a large splash of upperside ground colour on the underside of the right hindwing (fig. 8). With its wings closed on a flower it simply appeared to be badly torn.

The 13th July was cool and *jurtina* very jumpy. It is a surprisingly fast flier, and an erratic one (probably as a defence against bird attack) and very difficult to net on the wind. A new aberration of the female was taken from thistles. The underside is strong *rufa* Leeds with all fulvous of a red-brown shade and the ground colour very dark. This in itself is an unusual form but not excessively rare. However, the fulvous bands of the upperside forewings are of a beautiful chestnut colour, a different colour (and much darker) than any *rufa* of my experience, of which it might be an extreme expression, although I suspect it is a separate aberration. A female showing homoeosis (a long streak of forewing orange across the underside of the right hindwing) was taken from knapweed. The following day yielded a good female *rufa,* a female *addenda* and several *partimtransformis.*

The downland locality

This area was found in August 1991 by Ross Young. The butterflies occur on one side of a large valley in which Ross had not previously noted *jurtina* as being especially abundant and so had not spent time working it. In early August, on the advice of a non-entomological friend who described butterflies in an abundance he had not seen since his childhood, Ross went to investigate. *Jurtina* were in huge numbers concentrated on ragwort flowers along the bottom of the valley with up to 50 butterflies per square metre. He took a fine female *crassipuncta* Leeds in mint condition. I

arrived home from abroad two weeks later and was shown the site. The ragwort was now going over and the butterflies, down to about two-thirds their original numbers, and many becoming worn, had spread to the scabious flowers on the south facing slope. The weekend of 24th/25th August was spent here in perfect conditions — warm, sunny and still . On 24th, what looked at a distance to be a worn typical male was in fact an albino of the grey form, *grisea-argentacea* Ober. The following day was spent scouring one large scabious patch alive with Meadow Browns. A white insect looking much like *Pieris rapae* L. but flying distinctly like *jurtina* landed a short distance away. As suspected, a male white albino, *cinerea* Cosm. A little later a flip up of the wings of a feeding female was enough to indicate an extreme *crassipuncta,* also with the *addenda* characteristic on the underside (figs. 10 and 11), and from a nearby flower a curious form of *irregularia* Leeds was taken, having a streak of black with other dark spots and a suffusion of pale scales on the underside of the left hindwing (fig. 9).

Record of a rare aberration

In 1988 (*Ent. Rec.* **100**: 105-108) I described a very rare aberration of *jurtina* which appears to lack the central band of the underside of the hindwings and suggested that it may be an extreme form of *postmultifidus.* Two specimens were illustrated, both female, believed to be the only known examples of the form. A third female was captured on the downs in central Dorset on 7th August 1990 (fig. 6). The area has a large population of *jurtina* but has only produced one other aberration, despite careful study — a perfect male *anommata* Verity taken by Ross Young on the preceding day.

Hazards of butterfly collecting. Bulgaria, 1976 — *The Pig is at the Door*

Bulgaria is a warmly welcoming country, so welcoming, in fact, that it poses problems for a visiting entomologist who has not developed robust techniques for refusing well-meant hospitality in an inoffensive manner.

Our first exposure to this particular hazard came shortly after our arrival in the country. We were trying to force our way along an atrocious mud road in the Pirin Mountains, linking little mountain villages of such abject poverty that it was difficult to believe this was Europe. We had to team up with another car to push our ancient beetle (it turned 100,000km on this trip) and their Polska Fiat through the worst patches.

Shared hardships produce instant friendships, and we were invited for dinner . . . once . . . twice . . . three times. Dinner was already on the table, we could sleep there, we could go butterfly collecting first thing in the morning. We finally succumbed.

We were to meet other modes of recruitment later on. The bottle of wine appearing at our table, courtesy of table 12. The school teacher who wants

you to see the insect collection (insect turning out to be just that — one insect). The engineer who had worked in Algeria and wanted to trade racist remarks, having seen the Lebanese licence plates on our VW.

Once an invitation had been accepted, there was a standard pattern. Dinner was far from ready. Someone actually had to be detached to scour the village for good quality meat. Frantic telephoning or messengers invited relatives and friends to come and inspect "their" westerners; in those days Todor Zhivkov still ran a Stalinist regime, and foreigners were mainly kept in well-manicured reserves on the Black Sea coast. Work next day was cancelled. The stocks of booze were tripled, and the hatches were battened for a night of serious drinking. Soon twenty to thirty people were assembled.

The medium of communication in broken English, mangled German, fractured French, my wife's hazy recollections of university Russian, occasional Arabic phrases (indicating memory overload), and a considerable amount of body language, the simplest of which gestures is the old Slav tradition of drinking toasts to anything (butterflies, peace, Volkswagons, friendship, Denmark, Queen Elizabeth, tomorrow — but *not,* significantly, Todor Zhivkov or the Bulgarian Communist Party).

By midnight only the closest friends and relatives remain, and dinner can begin. It is excellent by Bulgarian restaurant standards, no difficult task. After dinner, wine, coffee, and cognac, it is two o'clock, and so much booze has been consumed that the language barrier has broken down completely, an advantage somewhat counterbalanced by the fact that language is gradually ceasing to be an effective medium of communication.

By three o'clock we are shown how to step over the enormous sow which insists on sleeping in front of the door to the outdoor toilet, and can finally go to bed.

The next morning, bleary-eyed and hung-over, we are informed that a dozen people, who missed last night's fun, are coming for lunch. Wriggling out of commitments, not of one's own making, prove impossible. In the afternoon you finally go in pursuit of butterflies which, by now, have wisely decided to bed down for the night, especially since an extra hour is wasted at the local police station to avoid upsetting the central police computer in Sofia (two married Danes with different surnames, one domiciled in London, the other in Copenhagen, with a London address, travelling on their own was already sufficient to make the computer, and assorted hotel receptionists reporting to it, victims of incipient nervous breakdowns).

It would, at least at the time, have been perfectly possible to spend a cost-free month touring rural Bulgaria in an alcoholic stupor, but that would not result in many butterflies. And by European standards Bulgaria is something of an entomological paradise, with a varied ecology and large tracts of unspoilt countryside. We got more than 120 species in a month, from the high altitude Mountain Ringlets (*Erebia*) and Apollos

(*Parnassius*), to the wonderful Festoons (*Allancastria cerisyi* and *Zerunthia polyxena*) of the warm gorges around Asenovgrad.

We did from time to time succumb to hospitality, insisting that we needed to go early to bed and get up even earlier, and promising ourselves to go steady on the drinks. This was severely to underestimate the degree of moral blackmail to which you would later be subjected. And — since dinner isn't ready anyway — could you really refuse to be the final and irrevocable adjudicator of whether *their* home-made *slivovitz* is not better than the deplorable stuff they make in the next village . . . and the nexst . . . and the nechsth?— T.B. LARSEN, 358 Coldharbour Road, London SW9 8PL.

Lithophane socia (Hufn.) (Lep.: Noctuidae) in N.W. Kent

On 4th May 1989, a male was found at my garden light. Chalmers-Hunt (*Butterflies and Moths of Kent,* 1968) gives no previous record for the area, one of the best worked in Britain. The moth's presence further east at Greenhithe probably for the late nineteenth century is noted without detail by Chalmers-Hunt, and is from the diaries of E. Farne; curiously no similar reference is made for *L. semibrunnea* Haw., a species easily confused with *socia* and which was present at Greenhithe at that time. In the British Isles this species is primarily a south-western one, although since 1920 it has been observed a number of times in the Kentish Weald.

The present record is additionally interesting in view of the apparent return to N.W. Kent of its congeners *L. semibrunnea* (1979) and *L. ornitopus* Hufn. (1980), while *L. leautieri* Boisd. first noted here in 1984 is now exceedingly common.— B.K. WEST, 36 Briar Road, Dartford, Kent DA5 2HN.

***Omalium rugulipenne* Rye (Col.: Staphylinidae) in North Devon**

I met with this very local species under seaweed (its invariable habitat) at Saunton Sands at the edge of Braunton Burrows, North Devon, on 16th May 1946. At the time I doubtless assumed that it was well enough known from that general area — as regards England, Joy (1932, *Pract. Handbk. Brit. Beetles* **1**: 102) does not localise it — but it now appears that this is far too wide an estimate of its English distribution. Fowler (1888, *Col. Brit. Isl.* **2**: 412-3) gives it as a species of our more northern coasts, with its headquarters in the Cheshire/Lancashire area, and as "also abundant" at Hartlepool.

There are records for Wales, Scotland and Ireland, but I have seen none for S.W. England. At present it would seem that the Devon record above is the most southerly in Britain; it has, however, occurred on the other side of the Bristol Channel at Newton Nottage, Glamorgan (Rye, 1872, *Ent. mon. Mag.* **8**: 204) — a record overlooked by Fowler.

To judge by its apparent absence from the south-east, Rye's belief that his type specimen of *rugulipenne* came from Gravesend, N.W. Kent (Fowler, *loc. cit.*) was probably mistaken.— A.A. ALLEN, 49 Montcalm Road, Charlton, London SE7 8QG.

[I took a specimen of *O. rugulipenne* at Studland, Dorset in October 1978.—J.A.O.]

Hazards of a garden moth trap

Like many readers, I enjoy Torben Larsen's regular series, *Hazards of butterfly collecting,* and occasionally wish for the opportunity to be exposed to such exotic adventures. The garden moth trap offers vanishingly few opportunities for hazard or danger — one could trip over the cable I suppose, or risk cardiac irregularities on seeing the trap seething with *nerii, biloba* and the like.

During the late summer and autumn — at least in my garden — the common wasp (*Vespula vulgaris*) is a nuisance. During the day the trap is seen as a well-stocked larder, and a regular stream of wasps visit in search of a plump *comes,* which is expertly dispatched and butchered, leaving only the wings behind. Covering the trap with a sheet is helpful, but resourceful wasps have been known to crawl underneath and enter by one of the drainage holes!

On the morning of 19th August 1992, following a warm and humid night, expectations were high. A sleek *Rhodometra sacraria* on the outside of the trap whetted the appetite, but inside . . . between 200 and 300 wasps, and about the same number of moths. About 50 or so were clustered underneath the bulb holder with further groups sitting together, head upwards, in the depressions of the egg-trays used in the trap.

This was one of the very few occasions when I have lost interest in a trap full of moths, although I do recall being similarly nervous some years ago, on receiving tangible evidence that I had set up my portable m.v. trap underneath a hornets' nest in the New Forest.

Interestingly, all of the moths were intact, suggesting the wasps had not entered the trap on a hunting foray. This problem has continued, although on a smaller scale, until the time of writing in mid-September; warm or cloudy nights always produce between about ten and fifty wasps in the morning. Adjusting the trap timer so that the light came on after dark and extinguished before dawn had no effect, suggesting the wasps' flight was truly nocturnal. The host nest is some 15 metres away, and invisible from the trap site. Does this mean that wasps regularly fly and navigate successfully at night? I would welcome comment from those more expert than I.— PAUL SOKOLOFF, 4 Steep Close, Orpington, Kent.

Eupithecia sinuosaria Eversmann (Lep.: Geometridae) in Hertfordshire. The second British record

A single male of *Eupithecia sinuosaria* was caught in a Rothamsted Insect Survey light trap situated ten metres within deciduous woodland adjacent to arable fields on the Rothamsted Estate (Site no. 609 (Knott Wood, II) O.S. grid ref. TL 114 132) during the period 19 - 21.vi.1992. The trap operates as part of the Rothamsted farmland light trap network (Woiwod *et al,* 1990). So far as we are aware, this is the second record of *E. sinuosaria* in the British Isles, the first having been caught in Somerset on 13.vi.1992 (Slade & Agassiz, 1992). These records are probably the result of immigration, but the possibility that the species is a recent colonist cannot be ruled out. Weigt (1990) states that the larvae feed on the flowers and fruits of *Chenopodium album* and other congeneric species as well as those of *Atriplex* during July and August. *Chenopodium album* grows commonly in the vicinity of the trap which caught the moth but a search for larvae on 26.viii.1992 was unsuccessful.

As well as the references cited by Slade & Agassiz (*loc. cit.*), the reader is referred to Weigt (*loc. cit.*) who gives a very detailed account of this species as well as excellent colour photographs of each of the life stages.

Thanks are extended to I. Woiwod, J. Bater and M. Feather for their assistance in searching for the larvae of this species. We are also grateful to M. Feather for his daily collection of the light trap samples.

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References. Slade, B.E. and Agassiz, D.J.L. *Eupithecia sinuosaria* Eversmann (Lep.: Geometridae) new to the British Isles. *Entomologist's Rec. J. Var.* **104**: 287-288. Weigt, H.-J., 1990. Die Blütenspanner Mitteleuropas (Lep.: Eupitheciini) Teil 3. - *Eupithecia sinuosaria* bis *pernotata.* Dortmunder Beiträge Landeskunde **24**: 5-100. Woiwod, I.P., Riley, A.M. and Townsend, M.C., 1990. The Rothamsted farmland trap network. *Entomologist's Rec. J. Var.* **102**: 200-201.

MARTIN C. TOWNSEND, and ADRIAN M. RILEY, AFRC Farmland Ecology Group, Dept. Entomology and Nematology, Rothamsted Experimental Station, Harpenden, Herts AL5 2JQ.

***Phyllodecta vulgatissima* L. (Col.: Chrysomelidae) on the rampage**

Driving along a road near Carron, Banffshire on 15th July 1992, we noticed a number of mature sallow trees (*Salix caprea* L.) whose leaves from top to bottom had turned brown as if the tree had died in full leaf. We stopped the car and saw that the trees looked dead because the substance of their leaves had been eaten from underneath leaving only the veins and the upper epidermis which had turned brown. It did not take long to find the cause — chrysomelid larvae, sometimes three to a leaf, were present in force. I kept some to rear and found that the culprits were larvae of *Phyllodecta vulgatissima.* Later, we saw a number of other sallow trees affected by the same process but not to the same extent.

It was striking to note how severely the first trees we saw had been attacked. In some, 6 - 8m tall, over 90% of leaves were affected. The larvae had invariably been eating from below in exactly the same way as I have reported with larvae of *P. polaris* Schneider, eating the leaves of *Salix herbacea* L. (Owen, 1988, *Ent. Rec.* **100**: 91). Usually, they had eaten their way over the whole surface of the leaf before moving on to the next one. It would be interesting to learn whether this physiological "defoliation" had any long term effect on the most affected trees. I suspect not, for it seems very unlikely that similar attacks had not occurred in past years and there were no dead of even stunted sallow trees nearby.— J.A. OWEN, 8 Kingsdown Road, Epsom, Surrey KT17 3PU.

[Note: Similar extensive damage to *Salix caprea* was noted in August 1992 in coastal regions of Co. Kerry and Co. Clare, Ireland. In some places hundreds of bushes were affected. I assumed the damage had been caused by a *Phyllodecta* species. Prof. Owen's description above matches my notes exactly!—PAS.]

***Pyrausta aurata* Scop. (Lep.: Pyralidae) on *Thymus* species**

Of the three obvious works available to me (Beirne, 1952; Goater, 1986; Emmet, 1988) only the first mentions *Thymus* as a foodplant for *P. aurata,* of which there is a thriving if small colony in my garden. Species of *Mentha, Origanum, Nepeta* and *Salvia* (other quoted foodplants) all occur close by, as do good quantities of *Thymus vulgaris* (Culinary Thyme) and *T. polytrichus* (= *T. drucei*) (Wild Thyme), but the moth is clearly associated with only the two thymes. The first generation (May and June) pays much attention to *T. vulgaris,* the second (July and August) to *T. polytrichus,* in line with the differing flowering seasons of the two species. The moths are very active in hot sunshine, but also come to tungsten and m.v. light. However, the second generation moths clearly favour *T. vulgaris* as well as the native species. A sprig of Culinary Thyme was brought indoors on 13th February 1992, and on the 23rd an imago was found in the kitchen. Examination of the thyme showed a loose cocoon and empty pupa case in a flower head.— CLIVE STACE, Cringlee, Claybrooke Road, Ullesthorpe, Lutterworth, Leics LE17 5AB.

Eupithecia dodoneata Guen. (Lep.: Geometridae) in N.W. Kent

Two males of this *Bledius* flew to my m.v. lamp here on the night of 8th August 1992 — a highly unexpected visit. The species is one of our less common of the genus and very local. Fowler (1888, *Col. Brit. Isl.* **2**: 367) gives a few localities on the east coast from Kent to Lincolnshire, and the Manchester district; Fowler & Donisthorpe (1913, *ibid.* **6**: 239) add others in the Isle of Wight, also Rye, and Wells (Norfolk). It is however, very possible that the last two really refer to *B. diota* Sch., now known to occur at both places and earlier confused under *B. bicornis* (though amply distinct); but my friend Prof. Owen tells me he has taken *bicornis* at Wells. The present capture will surely constitute a new record for West Kent, not to mention the London area. I had never before met with the species, but have examples from Christchurch, Dorset (P. Harwood).

One specimen at light here would have been surprising enough, while two is a good deal more so since they must have followed almost identical flight-paths from wherever they originated. Earlier in the summer several *B. germanicus* Wagn. came to the lamp, as others had in two previous years (though not last year, 1991). Almost certainly these Bledii have a common origin; the two species could well occupy the same habitat, but are normally maritime or estuarine only. However, I know of no suitable site in the district and the source of the beetles, as of some others similarly taken, remains a mystery.

The late W.O. Steel, who studied the genus for some years but unhappily did not live to publish his results, told me that the two very closely similar species *B. spectabilis* Kr. and *B. germanicus* Wagn. have distinctly different habitats; the former living on the shore not far above high tide-mark, the latter not so near the sea along sandy undercliffs or in the muddy banks of brackish dikes etc. — which accords well with my experience as far as it goes.— A.A. ALLEN, 49 Montcalm Road, Charlton, London SE7 8QG.

EupIthecia dodoneata Guen. (Lep.: Geometridae) in N.W. Kent

On 14th May 1992 a specimen was taken at my garden m.v. light, and was followed by others on 18th, 19th, 22nd, 23rd and 24th May; J.M. Chalmers-Hunt kindly confirmed their identity. In his *Butterflies and Moths of Kent,* 1981, he comments that *dodoneata* is "apparently extinct in Division 1 (N.W. Kent), though formerly abundant there". With the exception of a record by L.T. Ford for Bexley in 1914 all the numerous records for the area refer to the Metropolitan district between 1860 and 1895. Curiously, with the exception of a specimen taken at West Wickham in 1861 this species seems not to have been noted in such well-worked woodlands further away into Kent as Darenth Wood, Chattenden and Cobham Woods, nor in the woodlands around Dartford.

I suspect that *E. dodoneata* has been present, but remained undetected in the Dartford area since the mid-nineteenth century, perhaps not surprising since the local woodland has remained strictly private until the second world war.— B.K. WEST, 36 Briar Road, Dartford, Kent DA5 2HN.

Lucanids in the garden

When we came to Epsom in 1970, we saw stag beetles (*Lucanus cervus* L.) in the garden most summers. We found a local source one morning — a long dead pear tree which supported one end of our clothes line. Stag beetle larvae had totally consumed the roots and the tree had fallen across the lawn. The following winter, we dug up a few adults from the soil where the roots had been. The beetles were less plentiful after this but we still saw them in the garden most summers.

When the hurricane of October 1987 blew down a large lime tree in our street, I got out our wheel barrow and rescued some of the trunk which had been cut into convenient sections by men from the council. I thought they would make simple garden seats and placed them on the ground with the cut surfaces horizontal. I didn't get the position in the garden quite right the first time and, when I moved them to a shady position at the back of the garden a year later, I found under one of them three dead female stag beetles.

From time to time since then I have looked under the logs. For the first few years there were no further signs of *Lucanus* though there were adults of *Dorcus* there on a number of occasions. In 1991, however, there was some "sawdust" under some of the logs and, in July 1992, I saw beneath a log two full grown *Lucanus* larvae burrowing into the earth presumably to pupate. They had gone by the time my friend Richard Lyszkowski came on a visit some weeks later but a cut into the log revealed another full grown *Lucanus larva* and two adult *Dorcus*. Digging a little deeper into the wood, we exposed an adult *Sinodendron* together with a larva. This was my first sighting of the latter species in the garden though it is well established in north-west Surrey. There were, thus, all three British lucanids breeding in the same log in a suburban garden in an almost totally built-up suburb.

None of the three lucanids is considered in any way endangered in Britain but the position of *Lucanus* in Europe as a whole gives some cause for alarm and the species is listed as requiring special consideration in Appendix III of the Bern Convention (the Convention of European Wildlife and Natural Habitat). The apparent ease with which *Lucanus* colonised the sections of tree trunk placed on the ground in our garden suggests a cheap and easy means of promoting the welfare of this species. One would not be restricted to using sections of lime trunk for the beetle is known to develop in various trees including beech and elm. The sections of trunk in this instance were approximately 0.5m in diameter and 0.4m thick but larger sections would possibly provide longer lasting breeding sites.— J.A. OWEN, 8 Kingsdown Road, Epsom, Surrey KT17 3PU.

Higher and earlier

One way in which even the most casual recorder can usefully amuse himself is by confounding some of the information provided in the reference works. The following butterfly records might be of some interest; they are

of occurrences at an earlier date or at a higher altitude than normally quoted.

1. Several species were seen in abundance on Picacho de Veleta, Sierra Nevada, Spain, on 14th and 15th July 1981, at altitudes above those given in Higgins & Riley (1980) *A field guide to the butterflies of Britain and Europe,* Collins (latter's height limits given in parentheses).

Cardinal (*P. pandora*) 2500m (1200m); Grayling (*H. semele cadmus*) 3300m (1500m or more); Rock Grayling (*H. alcyone*) 3300m (1500m or more); Spotted Fritillary (*M. didyma meridionalis*) 3300m (over 1800m).; Nevada Blue (*P. golgus*) 2500m (2400m); Purple-shot Copper (*H. alciphron gordius*) 3300m (1800m); Green-underside Blue (*G. Alexis*) 3300m (1200m).

2. Higgins & Riley (1980) give periods of flight for the two broods of Map Butterfly (*A. levana*) as May-June and August-September. At a locality near Soissons, Aisne, France, second brood butterflies were flying on 12th July 1971 and (in copula) on 13th July 1973. In late July 1979 at the same site the butterflies were showing signs of wear.

3.Higgins & Riley (1980) give flight periods for Spanish Gatekeeper (*P. cecilia*) and Silver-studded Blue (*P. argus*) as May onwards. In 1981 near Torremolinos, S. Spain, the former was flying on 7th April and the latter on 6th April.— CLIVE STACE, Cringlee, Claybrooke Road, Ullesthorpe, Lutterworth, Leics LE17 5AB.

Recent records of the Purple Emperor (*Apatura iris* Linn.) from the Tunbridge Wells, Kent area

As can be seen from J.M. Chalmers-Hunt's *Butterflies and Moths of Kent* and Colin Pratt's *History of the Butterflies and Moths of Sussex,* records of this species from West Kent and East Sussex have been very scarce in the present century, and in recent times there has been an absence of published records. However, on 17th July 1984 a specimen was recorded in the garden of an isolated house on high ground overlooking woodland near Penshurst, Kent. On 25th July a second specimen was seen in the same spot; it was photographed and its identity confirmed by Mr A.C. Redgrave.

I have also seen a specimen captured by Major H.L. Bennett on 30th July 1977 along a road in the Broadwater Forest area between Tunbridge Wells and Frant, Sussex. Interestingly, E.D. Morgan in his manuscript *Lepidoptera of the Tunbridge Wells District* (dated 1946) records *A. iris* from "Frant woods", which must refer to the eastern part of the Broadwater Forest complex. Morgan's information came from A.D. Reed, one of his contemporary correspondents who lived at Montacute Cottage on the Sussex border, close to the site of the 1977 record. Broadwater Forest, although extensively planted with conifers, still supports colonies of such traditional woodland species as *Ladoga camilla, Quercusia quercus* and *Boloria selene,* and so is doubtless capable of supporting a small relict population of *A. iris.*

Finally, I am informed by Eric Philp of Maidstone Museum that a Purple Emperor was recorded in a garden in Tunbridge Wells town on 1st August 1987. There is therefore strong evidence of a continuing breeding colony in this district.— IAN C. BEAVIS, 104 St James' Road, Tunbridge Wells, Kent TN1 2HH.

Another new foodplant for the Holly Blue (*Celastrina argiolus* (L.))

Whilst gathering raspberries (*Rubus idaeus* L.) in my garden at Great Oakley, N. Essex (TM2028), during the second week of June 1992, I found a green larva with its foreparts buried in the flesh of one of the fruits.

On being placed with the raspberry in a container, the larva continued to feed for three or four days before pupating. On 9.vii.1992 a perfect male *Celastrina argiolus* emerged from the pupa. Its wingspan measured approximately 32mm, at the upper end of the range given by Emmet and Heath (*The Moths and Butterflies of Great Britain and Ireland* **7**(1): 169. Harley, 1989).

There were none of the more usual foodplants in the vicinity of the raspberry canes, making it unlikely that the larva had strayed onto the fruit and the production of frass suggests that it was actively feeding on the raspberry.

I can find no mention of this pabulum in the literature, but the closely related *Rubus fruticosus* is given as a foodplant for *argiolus* by Stokoe and Stovin (*The Caterpillars of the British Butterflies*. Warne, 1944).

It is interesting to note that *Rubus* is a member of the Rosaceae, as is *Pyracantha* on which there have been several recent reports of feeding *argiolus* larvae in the literature.— JERRY BOWDREY, Colchester Museums, 14 Ryegate Road, Colchester CO1 1YG.

Two more notable Tephritids (Dipt.: Trypetidae) on Woolwich Common, S.E. London

In 1982 I reported (*Ent. Rec.* **94**: 10) two uncommon species of this family from the above locality (within ten minutes' walk from my house), namely *Orellia falcata* (Scop.) and *Dithryca guttularis* (Mg.). I now add another two, neither of which I have seen before in the London suburban area where indeed records of them seem very few. On 9th August 1992 I was most agreeably surprised to detect amongst the foliage of common ragwort (*Senecio jacobaea*) a female of our largest Tephritid, *Icterica westermanni* (Mg.) — a very local and distinctive fly. Niblett (1956: p.86) lists only seven localities for the London area (i.e. within 20 miles of St Paul's), whereas a more or less common species would rate something like twenty; they are for Surrey and Middlesex only. The fly is associated with species of *Senecio,* especially *S. erucifolius* which is scarce on Woolwich Common; as indeed *I. westermanni* must be to have escaped previous notice. It seems unlikely to be a recent colonist unless the species is on the increase. It will be interesting to see whether further specimens turn up.

On the same afternoon while sweeping young larch I secured a pair of *Tephritis formosa* (Lw.) — an instantly recognizable species, with heavily marked wings, affecting *Sonchus* spp. and *Hypochaeris*; but very local at least near the metropolis, despite the ubiquity of its hosts. Niblett (p. 87) gives a Hertfordshire record only.

Reference: Niblett, M., 1956, *The Flies of the London Area,* **3**: Trypetidae, *London Naturalist,* 1955: 82-88. See also White, I.M., 1988. Tephritid Flies, *Handbk. Ident. Br. Insects,* **10**(5a), London.— A.A. ALLEN, 49 Montcalm Road, Charlton, London SE7 8QG.

***Hydriomena impluviata* D. & S. (Lep.: Geometridae): an extraordinarily rapid decline in melanism**

Most years since 1969 this species has been noted at my garden m.v. light in small numbers of less than a dozen, and until 1989 all specimens were of the melanic form *obsoletaria* Schille. Chalmers-Hunt (*Butterflies and Moths of Kent,* 1981) has only one reference to ab. *obsoletaria,* stating that at West Wickham at least 50% of the *H. impluviata* are of this form.

In 1989 one specimen of five noted was of the normal grey, banded form; a slightly larger sample in 1990 produced a further non-melanic specimen. The species was not noted at the light in 1991, but in 1992 fifteen appeared, all of the typical grey, banded form — no melanics! Perhaps this experience represents a warning that in the near future some familiar forms of moths which we have taken for granted may disappear quite quickly, or at best remain as rare aberrations.— B.K. WEST, 36 Briar Road, Dartford, Kent DA5 2HN.

Emergence dates of Stag beetles (*Lucanus cervus* L.) in Surrey

Recent notes on the early emergence of Stag beetles (Morris, 1991; Bowdrey, 1991) have prompted me to check my own observations, recorded in a West Molesey garden for most years since 1975, and also to bring to attention the report of two exceptionally early emergences in Surrey in the first half of the last century.

The early emergence reported in South London by Morris (6th May) and in Colchester by Bowdrey (first half of May) in 1990 was not mirrored in Molesey, where specimens were first seen on 10th June. However, in 1989 a male was out on 14th May, the earliest date I have recorded since 1975, and in the current season several beetles were in evidence on 31st May. Most of the records for West Molesey have been between 10th - 20th June, with 23rd June in 1981 and 29th June in 1977. Males have almost always been first to appear, as also noted by Clark (1964), and I have often wondered how the sexes successfully get together; females appear later, and often continue well into July when males are no longer in evidence. This year, however, both sexes were observed on 31st May, and one pair was noted *in cop.* It is interesting to speculate whether it is the warmer weather of recent years, or some other factor, which is responsible for the earlier peak

emergence dates, at least since 1975, than those in July reported by Clark (1964).

Bowdrey reports a museum record of an April emergence at Stratford in 1974, which is certainly an extreme date. Even earlier emergences were reported at Cobham, Surrey in the first half of last century by Caroline Molesworth, who kept a diary from 1823 - 1876, providing detailed and continuous observations on meteorological and phenological phenomena between 1825 and 1850. Phenological observations from these diaries are summarised by Romerod (1880). There are many interesting records and observations contained in these pages, two of which are particularly relevant here; for 21st March 1829 "Stag Beetle out", and for 21st March 1830 "Female Stag Beetle seen". How such early emergences are to he accounted for I do not inow. There would seem to be no reason to doubt that the records are anything but correct and genuine. Stag beetles are mentioned elsewhere in the Journal only twice, when normal emergences, on 15th June 1836 and 10th June 1841, are reported.

References: Bowdrey, J.P., 1991. Early Stag Beetles (*Lucanus cervus* L.) in Colchester. *Ent. Rec.* **103**: 300. Clark, J.T., 1964. The Stag Beetle in North-east Essex. *Essex Naturalist* **31**(3): 167-172. Morris, R.K.A., 1991. An exceptionally early date for the Stag Beetle *Lucanus cervus*. *Ent. Rec.* **103**: 106. Ormerod, E.A., 1880. *The Cobham Journals*. London: Edward Stanford.—
B.M. SPOONER, 31 Balmoral Crescent, West Molesey, Surrey KT8 1QA.

Euproctis chrysorrhoea L. (Lep.: Lymantriidae); larval infestation in the Kentish Weald

Infestation of larvae of this species tend to be coastal or estuarine, and distinctly local. On 8th May 1992, I was surprised to find many small trees and shrubs in the immediate vicinity of Paddock Wood station in the heart of the Weald being defoliated by *chrysorrhoea* larvae. Many hawthorns were completely defoliated and larval nests were also noticed on blackthorn, wild rose, pear, damson, bramble (Rosaceae), sallow (Salicaceae) — small bushes not large ones, beech and oak (Fagaceae); unmolested were lilac and ash (Oleaceae), maple (Aceraceae), birch (Betulaceae), elder (Caprifoliaceae) and *Buddleia davidii* (Buddlejaceae). However of these latter I have encountered *chrysorrhoea* larvae upon them elsewhere — Buddleia at Barking, Essex in 1977 and maple and elder at Gravesend in 1990, although all of them seem generally to be avoided.

Chalmers-Hunt (*Butterflies and Moths of Kent,* 1968) gives a detailed and interesting account of the history of this moth in the county, and this illustrates the species' prediliction for coastal and estuarine sites for infestation, and the only reference to a truly inland location is for Wye at the foot of the North Downs escarpment in east Kent in 1901 where apple and pear trees were defoliated.— B.K. WEST, 36 Briar Road, Dartford, Kent DA5 2HN.

An interesting colony of Vapourer moths in West Penwith, Cornwall

On 2nd September 1991, I was having a picnic lunch with Chris Haes on the West Penwith moors above Zennor in west Cornwall when Chris noticed a caterpillar walking quickly across the track at our feet. The caterpillar (obviously a Vapourer) was almost entirely yellow, with yellow tussocks and yellow fringes, the only other noticeable colour being black — black on the body and long black hairs projecting forward from the head. There was no red at all on the body, the red being replaced with yellow.

Over the next few days, we saw several larvae (all similarly coloured) walking rapidly at the edge of the western heath that covers these moors. The larvae were obviously looking for pupation sites. I took two, one of which pupated almost immediately and one week later a female Vapourer moth emerged. The other failed to pupate and a small Braconid fly emerged, identified and commented upon by Dr Mark Shaw as *Aleiodes alternatar* Nees (=*geniculatar*), fairly common nationally, but interesting as being an exceptionally dark form (almost as dark as the form in southern Spain). Mark tells me that the Vapourer larva is only attacked by this Braconid fly when feeding on low plants such as ling, which is presumably one of the main foodplants for the Vapourer in this heathland colony.

I understand that occasional colour forms of Vapourer larvae occur within normal-coloured broods, but all the larvae seen were yellow and black, not yellow, black and red. This moorland colony may be isolated from other colonies (the Vapourer is not common in Cornwall) and may have a unique colour form. The adults were coloured as usual and on 25th September we saw several males flying in the sunshine nearby at Amalveor Downs above Zennor.— ADRIAN SPALDING, Tregarne, Cusgarne, Truro, Cornwall.

The Lyme Grass Moth: *Photedes elymi* Treitschke (Lep.: Noctuidae) in Kent

Mr Sean Clancy showed me a fine example of this local noctuid, taken at light at Dungeness, Kent on 30th June 1992. Furthermore, a second *P. elymi* occurred to him there at light on 8th August 1992. So far as I am aware this is the first record of *elymi* for Kent. Philp (1982, *Atlas of the Kent Flora,* 174) cites only one station for the foodplant *Leymus arenarius* in Kent, at Sandwich Bay, some 30 miles distant from Dungeness as the crow flies. On the Sussex side, however, *elymi* has been known to be resident for some years at Camber only nine miles away.— J.M. CHALMERS-HUNT, 1 Hardcourts Close, West Wickham, Kent.

***Adela reaumurella* L. (Lep.: Incurvariidae): A suspected second generation specimen in the wild**

This species normally produces one generation a year, the moth appearing in May-June. However, a female in fine condition came to light here at West Wickham, on 8th August 1992, a second generation one suspects.— J.M. CHALMERS-HUNT, 1 Hardcourts Close, West Wickham, Kent.

The Jersey Tiger (*Euplagia quadripunctaria* Poda) in Dorset

I would like to place on record the existence of a Dorset colony of the Jersey Tiger (*Euplagia quadripunctaria*). Historically this species is known only from Devon where it inhabits a mainly coastal distribution with Seaton its most easterly known site. Occasional specimens outside this area are considered migrants.

On the morning of 31st July 1992 I was working near Burton-Bradstock, when I saw a specimen resting on a gatepost. Having never encountered this species before, panic ensued: I don't know who panicked more, but the moth won and soon vanished. After ten minutes of fruitless search I drove off and was reversing into a cul-de-sac when I saw what I thought was a Clouded Yellow (*Colias croceus*) which were frequent at this time. It flew within two feet of my open window when I recognised it as a Jersey Tiger ab. *lutescens* Staudinger. More panic as I leapt from my truck, spring frame in hand and chased it until it landed typically out of reach on top of a hedge. There followed one jump and one miss — it sailed into an allotment and disappeared. After the initial disappointment of my double miss I was struck by the idea that perhaps I had found a colony — two vagrants within one hundred yards seemed unlikely, so I made plans to return later that day.

On returning I started to beat some bushes near an allotment and one was soon flushed and finally caught, but this one had orange hindwings and so represented a third and different specimen. Ten minutes later I saw another — this time feeding on Buddleia. This one was soon caught and was the typical red form. So, in two twenty-minute periods I had encountered four specimens and they had included three colour forms.

With the weekend approaching I thought a further search was needed to determine the size and strength of the colony, but true to form, the weekend was a washout as clouds and rain appeared to chase me all around Dorset; hence my next observation took place exactly one week from my first capture — but that day (7th August) was cloudy and I was not hopeful. However, I soon encountered two more specimens, one the red form and the other orange, one of which was some distance from the original site. That day concluded my records of this species, the weather being rough from then on.

All things considered it is reasonable to assume that a strong colony is present and I would expect to find it anywhere between Burton-Bradstock and Shipton Gorge.— M.J. PARKER, 9 East Wyld Road, Weymouth, Dorset DT4 0RP.

***Colias croceus* on Canna.**

For the first time since September 1947 the Clouded Yellow has been seen on the Isle of Canna.

This time the first sightings were on 29th May, when Mr Robert Swann, an ornithologist who has been bringing parties of students to Canna for a number of years, brought me a female. Between then and 19th August,

when a pair *in cop.* were brought to me by a Canna lady who is interested, *C. croceus* has been seen here at least a dozen times. The pair taken *in cop.* was liberated.

From 16th May to 12th June Canna enjoyed a most remarkable spell of hot dry weather, and the Red Admiral (*Vanessa atalanta*) which was first seen on 16th May, bred successfully, as could soon be seen on the nettles which are preserved outside the garden. At present (23rd August) about 20 specimens can be counted on the four buddleias in the garden on any fine day; but so far I have seen only one *Aglais urticae,* which I liberated from the chapel on 10th May.— J.L. CAMPBELL, Canna House, Isle of Canna PH44 4RS.

***Dolichocephala ocellata* (Costa) (Dipt.: Empididae) new to Kent and the London suburbs**

This is by far the rarest of its genus of three British species of delicate little flies with spotted wings (hyaline spots on a darker ground) and there appear to be but few records; it has been given RDB3 status. I know of it as published from Oxon, East Sussex, Isle of Wight, Dorset and Devon. I used to take it very occasionally at the edge of a small artificial pond in my former garden at Blackheath, always single at long intervals, between 1961 and 1970. This should constitute the first record for Kent and for the metropolitan area, and probably also the first for a not strictly natural habitat; the pond having been dug out in October 1958 on a rough lawn. On 15.vi.1974 I swept a specimen of *D. ocellata* by a dyke on Lewes Marshes, East Sussex, when with my friend Mr P.J. Hodge, but there are one or two previous records for the vice-county. (See Collin, 1961, *British Flies* 6 (Empididae) **3**: 733, Cambridge).— A.A. ALLEN, 49 Montcalm Road, Charlton, London SE7 8QG.

Activity cycles amongst French butterflies

Whilst enjoying a recent holiday in France I noticed a curious rhythm of activity in the fields. Arriving complete with camera and field guides, there was not a butterfly to be seen. Then, without obvious explanation, the field would become alive with butterflies. In one locality, the blues would commence patrolling, pausing only to nectar on available vetches. This seemed to stimulate the browns and then the fritillaries into flight. Then, just as suddenly, the butterflies would retire to the grasses and activity would cease. Over a two-week period of observation, a fairly regular pattern emerged.

During a separate visit to central France, I was fortunate in having a large hayfield adjacent to my accommodation. I was surprised to note that a similar pattern emerged. An approximate 20 minute period of activity would begin with the meadow browns, followed shortly by skippers, marbled white and blues. Levels of activity were low around midday with few or no butterflies until about 13.30. A period of activity followed until

about 14.00, then little flight until around 14.30. The general pattern was 20 - 30 minutes of activity followed by a quiet period broken only by an occasional cruising marbled white or red admiral.

Several possible explanations suggest themselves — perhaps primary response is to the availability of nectar sources — the intervals allowing replenishment; perhaps the hot sunshine allows only limited periods of exertion — although the pattern did continue into the cooler evening. Looking in more detail into what the butterflies were up to suggested that most of the time was taken with feeding, with nuptial chases being more frequent towards the latter half of the day. The tentative conclusion would be that the butterflies were responding to the need to feed, and the availability of nectar. Has anyone else similar observations, or explanations?— E.M. RAYNOR, 15 Nash Meadow, South Warnborough, Hants RG25 1RJ.

Colydium elongatum (Fabricius) (Col.: Colydiidae) in West Surrey

A single specimen of *Colydium elongatum* was found in my garden on 28.v.1991; the locality is nearly two miles south of Farnham railway station (SU 840438) in Surrey, and very close to the eastern Hampshire boundary and to Alice Holt Forest. The insect was under the bark of a beech tree which had been blown down in the storm of 16th October 1987; it was part hidden in accumulated bark debris and frass (probably from woodlice), and it was also noticed that the ridges of its elytra had a degree of resemblance to the small close ridges which form on the inside surface of beech bark. Under adjacent bark of the same tree, a specimen was noted of *Platypus cylindricus,* on which *C. elongatum* is widely accepted to prey, together with several other species such as *Ditoma crennata* and *Rhizophagus bipustulatus.*

Colydium elongatum has long been regarded, in Great Britain, as confined to the New Forest; and it continues to occur there — for example, a specimen taken on a fallen beech tree, 14.v.1988, at Frame Heath (A.J. Halstead, 1989: *Brit. J. Ent. Nat. Hist.* **2**: 48). A paper (I.S. Menzies, D.R. Nash & J.A. Owen, 1991: *Entomologist's Rec. J. Var.* **103**: 61-62) summarises in detail the recent appearances elsewhere in England, and mention will be made here only of two further published records. The paper quoted lists two records from Windsor Great Park, to which may be added a specimen from under oak bark, 21.vi.1990 (D. Copestake, 1991: *Brit. J. Ent. Hist.* **4**: 39). More interesing, in that it is a distinctly new area, is a single specimen, 21.v.1989, from an oak log-pile in Pamber Forest, Hampshire close to the Berkshire coundary (A.J. Halstead, 1990, *Brit. J. Ent. Nat. Hist.* **4**: 86).

No further specimens have been noted in my locality to date (ix.1992).

If these new localities represent a recent spread of the species, it would be interesting to have some evidence of the mechanics of its dispersal. In my

brief experience of a living specimen, it seemed very lethargic, and certainly had no tendency to spread a wing; has it ever been noted in flight, or appeared at a light sheet? Most of the localities are long-established forest (often smaller than they once were), and as such are popular study areas to entomologists who should have found it earlier if it were there. That this spread has been recent seems the more plausible, but the matter is far from resolved.—W.R.B. HYND, "Frensham Grove", Frensham Vale, Lower Bourne, Farnham, Surrey GU10 3HT.

Host Plants of British Beetles: a list of Recorded Associations by **J.A. Bullock,** 24pp. AES Publications. 1992. ISBN 900054 56 5. £1.85.

This booklet is essentially a rehash of the beetle - plant associations listed by Mr Philp in the recent AES publication *A Coleopterist's Handbook* but arranged alphabetically by plants instead of taxonomically by beetles. The list covers about 75% of the British phytophagus beetle species. Those excluded are to some extent polyphagous species but some beetles with clearly defined host plants have been omitted for no obvious reason, e.g. *Cryptocephalus biguttatus (Erica tetralix), Chrysolina latecincta (Plantago maritima)* and *Dryophthorus corticalis (Quercus robur).* In his review (*Antenna* **15** (4)), the author of this booklet took the editor of the *Handbook* to task for omitting reference to Lycids — "What have my personal pets, the Lycidae done to be ignored?". He must, however, have changed his affinities for the Lycids are again ignored.

Some of the beetle species listed are dependant on secondary hosts such as higher fungi but the coverage is poor and the secondary nature of the host is not always made clear. Thus, *Abdera flexuosa* is listed as a direct associate of *Alnus glutinosa* and *Salix* spp. but the beetle actually lives and develops in the fungus *Polyporus radiatus* growing on these trees. Some beetles are associated with plants for shelter or the "hunting grounds" they provide for predatory species. A few such are included marked "under bark" or in "dead wood" but the majority of beetles which occur characteristically in these situations are not mentioned. It would probably have been better to omit all species not strictly phytophagous; including only a few is misleading.

Because of the use of family and generic names, the coverage of plants is nominally better than the coverage of beetles. One would expect, however, to find mention of *Ilex* — a well documented host of *Mesites tardii.* Some cultivated plants are included but others such as *Althaea rosea (Apion radiolus)* or *Primula* spp. *(Otiorhyncus porcatus)* are missing.

It would have been better if the author had provided authorities for beetle and plant names. Without these, readers some years hence, or in a different overseas culture right now, may have difficulty in knowing what

species is meant. He states that, where he has used beetle names different to those in Mr Philp's list, he has given the latter in parentheses but he has not always done this. He has labelled the entry for some species "Scotland only" but others exclusively Scottish are not so labelled. (Anyway, if the label "Scotland only" is to be used for some species, why not "England only" where this is appropriate, or even, *pace cerealis,* "Wales only"?). Some species which have not occurred in Britain this century are labelled "extinct?" but others, which left the British scene a long time ago are not. Lastly the author draws attention to two spelling mistakes in Mr Philp's chapter; my list of spelling mistakes from this booklet reached double figures.

This booklet contains a great deal of information but the coverage in many respects is too patchy and the contents are not sufficiently reliable for it to qualify for unreserved recommendation. Perhaps, after a rest, the author could produce a improved, revised version. John Owen

E.H. Wild, 1920 - 1992

It is with great sadness that we learn of the recent death of Ted Wild at the age of 72. He had a keen interest in lepidoptera, and as well as collecting moths he accumulated a considerable repertoire of stories and anecdotes on entomology and entomologists. His enthusiasm and humour won him many friends, and readers may recall his short series of contributions in the *Record* on "mothmanship" (*Ent. Rec.* **101**: 175-176; 239-240; **102**: 171-172).

During the 1970s he volunteered his help to the *Record,* and dealt with advertisements, exchanges etc. In the late 1970s he turned his attention to the microlepidoptera and in 1980, after retiring from his teaching post, moved to Dorset. Soon afterwards, he captured a short series of *Elachista littoricola,* a species that turned out to be new to Britain (*Ent. Rec.* **95**: 65). Although failing eyesight removed his ability to set moths in later years, he never lost his enthusiasm and excitement for the subject. In this issue we publish a note from him of *Udea fulvalis* — in his letter accompanying the note he asks ". . . can you squeeze this in pronto whilst the news is still hot? . . ." Ted will be greatly missed. Paul Sokoloff

Subscriptions 1993

A subscription invoice for volume 105 (1993) is enclosed with this edition. We regret that subscriptions have been raised — the first increase in six years. The *Record* is run entirely on a voluntary basis — none of those helping in its production receive any remuneration, and the magazine has no sponsors or benefactors (although we are open to offers!).

All our material and all our income comes from subscribers, and we hope you will continue to support the *Record* with papers, notes, observations and, of course, your subscription. Paul Sokoloff, Editor.

Contents — *continued from back cover*

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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