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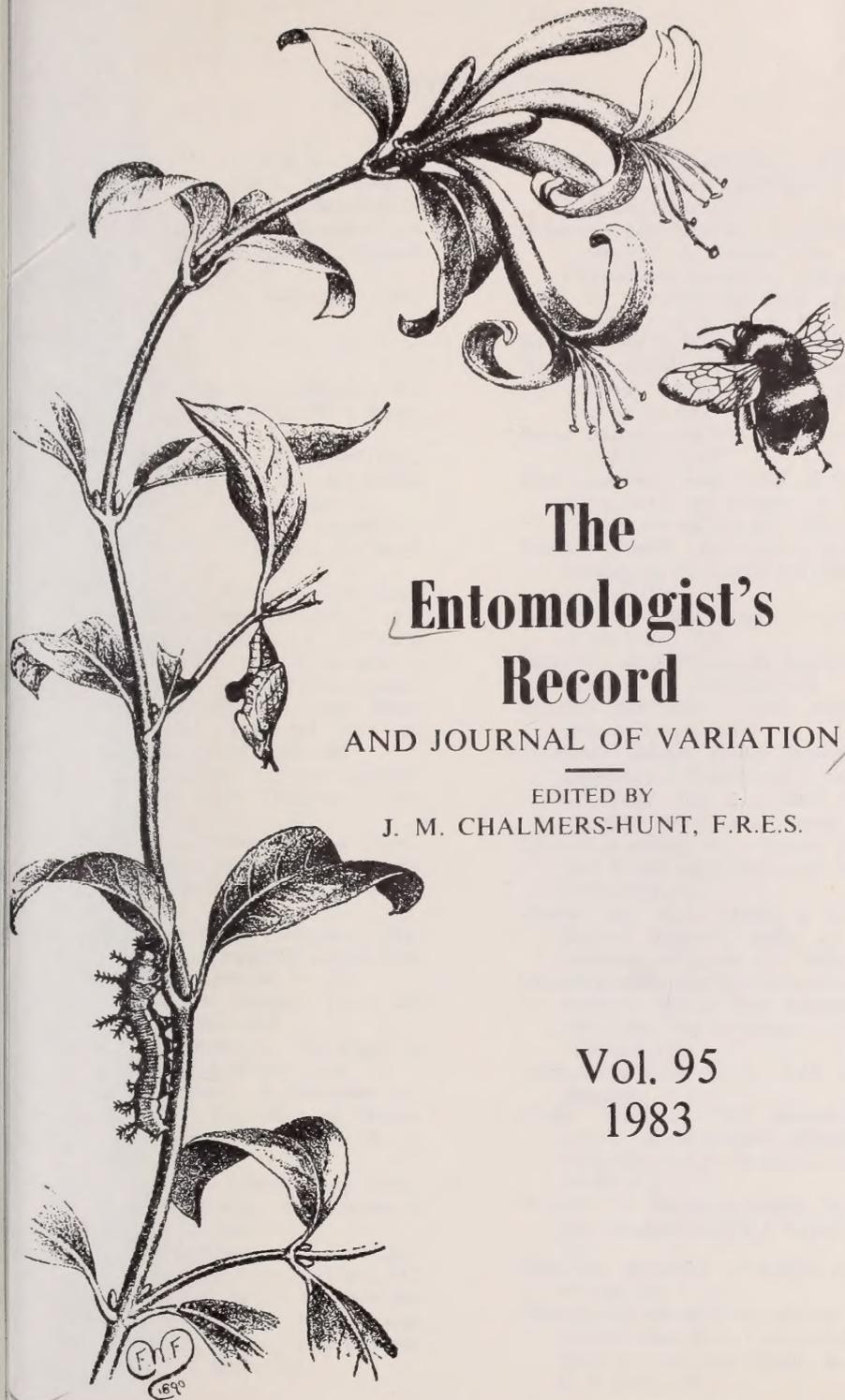
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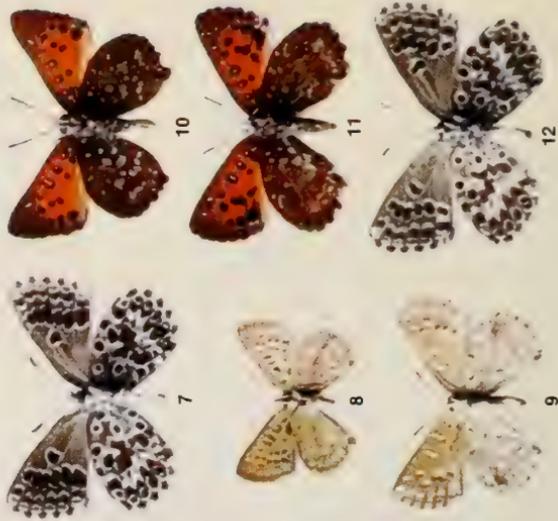
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**Abbot's Wood, East Sussex** Information is requested on butterfly records from the area since 1850. Information is sought on rare and common species for an article in preparation. All data will be acknowledged - M. Hadley, 2 Thompson Street, New Bradwell Nr. Wolverton, Bucks.

**Mrs. Mandy Watson**, widow of the late Bob Watson, will be carrying on at her new address the customary annual invitation under the aegis of the British Entomological and Natural History Society. The week-end of Saturday and Sunday, 26th and 27th March has been chosen for the 1983 occasion. She would be pleased to offer B&B and a meal to visiting entomologists passing through and doesn't mind "waiting to dish up while the setting is done" - Mrs. Watson, "Jacobaeae", 23 Watton Road, Holbury, Southampton, Hants (or Phone Fawley 893704).





THREE NEW LYCAENID BUTTERFLIES FROM THE  
SOUTH WESTERN CAPE PROVINCE

By C. G. C. DICKSON, M.Sc.\*

*(Concluded from Vol. 94 page 224)*A new *Crudaria* Wallengren.

A species with a small male with a noticeably dark upperside was found by Mr. C. W. Wykeham when it was flying amongst, though much scarcer than, *Crudaria* ? *leroma* Wallengren (probably not the nominate form of this insect, though considered in the meantime to be, perhaps, conspecific with it), at Fraserburg in the Great Karroo of the Western Cape Province, on 5th January, 1982. On a later visit, on 12th February, Mr. Wykeham only succeeded in securing a female of the first named butterfly, although *C. leroma* (or the above taxon which is at least allied to it), was encountered in fair numbers. Even the latter species was decidedly localised. A description of the newly discovered insect follows hereunder.

*Crudaria wykehami* spec. nov.

The forewings of the male are rounded distally, almost as in the female, and the ground-colour of the upperside is, in the male, fairly deep fuscous-brown.

**Male (Upperside).**

All wings with a slight bronzy sheen in certain lights; and edged marginally with blackish-brown. Veining as a whole more darkly scaled than the main wing-surface. Forewing with an ill-defined, dark discocellular marking; hindwing with a small, short and blunt, anal-angular projection, and with a minute light grey spot with some slight, dark adjoining scaling more or less within the projection. There is only a very slight indication of what might be regarded as a tail at the anal-angle in contrast to the situation pertaining in *C. leroma*. Cilia of all wings light cream-coloured, with some dark intrusion in places; mainly dark at the anal-angle.

## LEGEND TO PLATE I

*Lepidochrypsos pringlei* spec. nov.: fig. 1. ♂ holotype (upperside); fig. 7 ♂ holotype (underside). *Crudaria wykehami* spec. nov.: fig. 2. ♂ holotype (upperside); fig. 3. ♀ allotype (upperside); fig. 8. ♂ holotype (underside); fig. 9. ♀ allotype (underside). *Aloeides carolynnae* spec. nov.: fig. 4. ♂ holotype (upperside); fig. 5. ♀ allotype (upperside); fig. 10. ♂ holotype (underside); fig. 11. ♀ allotype (underside). *Lepidochrypsos* sp. (description awaiting publication): fig. 6. ♂ (upperside); fig. 12 ♂ (underside). Hab. — Kammanassie Mtns., S. W. Cape Province, 3.ii.1979 (Dr. J. B. Ball).

Figures slightly below natural size. Note: In figs. 4 & 5 the ground-colour is represented as a little more reddish than in nature. (Colour reproduction by Unifoto (Pty.), Ltd., Cape Town.)

\* "Blencathra", Cambridge Avenue, St Michael's Estate, Cape Town.

**Underside.**

**Forewing.** Ground-colour light fawny-grey. Basic pattern of partly metallic, incompletely black-bordered spots, that of *leroma*, the discal series being, as a whole, parallel with the distal margin and definitely not obliquely placed as in at least some forms of *leroma*, including the Fraserburg one. In one paratype the four lower discal spots are not, or are only very incompletely, black-bordered inwardly. A grey or rather blackish "smudge" occurs in the lower part of the wing, towards the base. Some small metallic markings with more or less apparent slight, dark scaling, and including ones which follow the discal series and are referred to again below, are but poorly defined. There is a submarginal series of not sharply defined, fair sized pale markings some of which tend to be slightly metallic inwardly, and with a little indistinct dark marking, contiguous with them. Faint darkish dots occur on the outer side of this series, and the wing-margin has a brownish edging, with very fine black scaling on the ends of the veins adjoining it.

**Hindwing.** Ground-colour as described for forewing, or of a somewhat warmer fawn tone (at least in one specimen). The light, creamy to light fawn, spotting corresponding to that of *leroma*, and similarly disposed. This spotting shows, at the most, only a partial indication of fine, darker (brownish) edging. There is a fine brownish edging to the wing-margin, less distinct than in the forewing, with fine darker dots adjoining it.

Cilia of all wings mainly whitish-grey to light fawn-coloured, with some individual variation in different specimens.

Length of forewing: 11.25 – 11.5 mm. (the former measurement, in holotype).

**Female (Upperside).**

Brown, with a more chestnut tone and lighter than in the male; darkening a little towards the distal margins. There may be a slight indication of a discocellular marking in all wings. Margins with a less distinct dark edging than in the male. Anal-angular projection of hindwing broad – and fairly well produced but without a clear-cut tail as such. There is a minute whitish dot at the anal-angle of the wing.

Cilia of all wings white to creamy-white but dark towards their bases, with a little light colour intervening close to the wing-margins, to some degree; those of anal-angular projection chiefly dark.

**Underside.**

**Forewing.** Ground-colour rather light fawn, with a warmer tone than that of the male. Pattern of white spotting as in the male but, in most examples, all the spots contrast very clearly with their background; those in the inner-half of the wing only have narrow black edging on each side, while, in the discal series, black bordering occurs only on the outer side. The submarginal series dark and decidedly better defined than in the male. Not sharply defined dots darker than the ground-colour which occur submarginally are at least partly bordered with some whitish scaling which, outwardly, merges into the cilia; and there is a little darker marking at the vein-ends, corresponding to the submarginal dots of the male. Some extensive whitish scaling occurs near the lower angle of the wing. The main portion of the discal series lies at about the same angle as in the male, not being obliquely placed *in relation to the distal margin*.

**Hindwing.** Ground-colour, as a whole, is sometimes more light greyish than in the forewing. Basic pattern as in the male, but the spotting is distinctly white and, at least partly, more prominent; the degree of dark edging distinctly variable in different specimens but in none seen as yet really heavy. Submarginal dots mostly well encircled with white; and some dark marking at vein-ends. In area 5, the white marking of the postdiscal series is obscured (or at least partly so) by brownish marking, mainly in the form of an ellipse.

Cilia of all wings white but (especially in forewing), more basally, dark brown; and with an impression of chequering inwardly. Noticeably darkened below lower angle of forewing and the anal-angle of hindwing.

Length of forewing: 14.25 – 14.5mm. (the latter measurement, in allotype).

The body and ancillary parts are, in both sexes, close to those of *leroma*.

♂ Holotype, WESTERN CAPE PROVINCE: Fraserburg,

5.1.1982 (C. W. Wykeham); British Museum Reg. No. Rh. 18705.

♀ Allotype, W. CAPE PROVINCE: data as for holotype, 12.11.1982 (C. W. Wykeham); British Museum Reg. No. Rh. 18706.

Paratype in Coll. C. W. Wykeham: as holotype, 5.1.1982, one ♂ (C. W. W.).

Another female specimen, captured on 5th January, is in too poor condition for inclusion as a paratype, although the basic marking of the underside is reasonably clear.

This insect appears, in fact, to be less closely related to *Crudaria leroma* than to a member of the group included in a paper of Van Son's, published in *Ann. Transv. Mus.* 22 (4): 503-9 (1956), this also being supported by the male genitalia. As far as can be gathered from a comparison of the genitalia of the present insect with Van Son's description and figure of those of the other taxon, there appear, however, to be several differences, as noted hereunder.

The concavity between the *uncus lobes* appears to be deeper in the present species. The *vinculum* is completely fused ventrally and laterally and not composed of two distinct sclerites as in *leroma* itself (but is as is indicated by Van Son, for the other species). The *valve* has the distal end longer and more acute. *Aedeagus* partly very deep, in the lateral view, owing to the ventral portion being produced downwards at about two-fifths of the distance from basal end of aedeagus. *Juxta* larger, broader and more acutely extended outwardly, with respect to each half.

Mr. Wykeham has furnished the following note on the discovery of the butterfly concerned:—“Early in January, 1982, whilst on a visit to the Teekloof Pass near Fraserburg, with Mark Anderson, I came across *Crudaria* flying in open patches amongst “Mimosa” (*Acacia karroo* Heyne) trees just before dusk. Again, we found them flying not long after the sun had risen on the following day. During the warm portion of the day they were not very active. The specimens tended to settle on low plants or on the ground.

“It was apparent at the time that more than one species was flying, but it was only due to the knowledge and experience of my uncle, Charles Dickson, that the distinction between the other *Crudaria* and this species was clearly ascertained.”

It has been a pleasure to name this interesting little Lycaenid after Mr. C. W. Wykeham — with his fine field work over the years particularly in mind, and which has helped to add so much to our knowledge of South African butterflies.

#### A new *Aloeides* Hübner.

Three males and a female of the present insect were first found by Dr. Jonathan B. Ball on a mountain slope near Goudini, some 12 miles west of Worcester, C.P., on 1st March, 1980. From these specimens, some resemblance on both surfaces to *Aloeides lutescens* Tite & Dickson (1968) was noticed — this taxon having been described in *Bull. Br. Mus. Nat. Hist. (Ent.)* 21, No. 7: 385, Pl. 4, figs. 67, 68, 79, 80, with the type-specimens from Brand Vlei, at a point about 4 miles south of Worcester. A good series of later

specimens secured on 15th November and 3rd December, 1980, indicated that there was a greater difference between the above two taxa than had been appreciated initially and it was believed that this would justify specific status being accorded to the recently discovered butterfly. The two habitats concerned are of noticeably different types. *Aloeides lutescens* occurring on low-lying sandy ground at Brand Vlei and the other insect on rough mountainous terrain, in its own locality.

*Aloeides carolynnae* spec. nov.

**Male (Upperside).**

**Forewing.** In comparison with those of *Al. lutescens* the black or blackish costal and distal-marginal borders are broader and the costal area from wing-base to the commencement of the costal border tends to be of a darker tone than the adjoining orange or orange-red ground-colour of the wing; while more apparent darkening of the veining for some distance based of the distal-marginal border occurs in the present taxon (such darkening being absent, or almost so, in most examples of *lutescens*). Cilia usually darker as a whole than in *lutescens*, but with individual variation in this respect.

**Hindwing.** The feature with respect to the partial darkening of the veining may apply to this wing also, but less frequently than in the forewing. The black patch adjoining the upper portion of the margin is normally much broader and longer than in *lutescens*, sometimes even extending down to vein 4; and the dark border below this patch is also wider than in this taxon. Cilia generally darker as a whole than in *lutescens*.

**Underside.**

**Forewing.** Orange-red area deeper than in *lutescens* but with the main spotting similar if inclined to be more prominent and this being so, frequently, with regard to the lowest component of the black sub-marginal marking. The narrow costal border, broad apical area and narrow distal border are, in individual specimens, brown, reddish-brown or, in some examples, practically lake-coloured; these portions being darker than in any specimens of *lutescens* seen as yet from this butterfly's type-locality. However, the costal border adjoining the orange-red area is usually narrower than in *lutescens*. The continuation of the submarginal series in the apical region – in the form of darker, inwardly lighter edged marking – is not apparent in some specimens but may be visible in others.

**Hindwing.** The ground-colour is the same, in individual specimens, as that of the apical or subapical region of the forewing. The marking is of the basic pattern of the *Al. thyra* (L.) group: whitish-grey and partly outwardly dark-edged – especially most of the main discal series – but not, or barely, edged thus in a very small minority of specimens. The pattern as a whole can be traced fairly precisely if generally less distinctly as regards its lighter components, in *lutescens* itself, but the configuration of some of the dark marking, or edging, in the lower portion of the wing is rather different in *lutescens*. Except in one specimen which has been seen, in which it has occurred in a decidedly reduced form, the light postdistal patch of *lutescens*, with its centre in area 4, has not been present in examples of the present insect which have been examined.

Length of forewing: 13.5 – 15.5mm. (15.25mm., in holotype). One abnormally small specimen has a measurement of only 11.25mm.

**Female (Upperside).**

The distal margin of the forewing is well rounded as is usual in females of this group.

**Forewing.** There is generally less prominent darker suffusion at base of wing than in the male though, as in this sex, with the marking usually more apparent than in *lutescens* (it is very obscure in the allotype of *carolynnae*). The dark borders wide, as in male.

**Hindwing.** Darker basal suffusion in this wing as referred to under forewing. Upper dark patch adjoining margin large, as in the male; the following dark border more crenulate than in male, as is the case with *lutescens*. Cilia in all wings as in the male.

**Underside.**

**Forewing.** Similar to that of male. The light inner-marginal colouring continues upwards on the distal side of the submarginal dark marking in area 1b. The much reduced continuation of the submarginal marking towards the apex is usually more in evidence than in the male.

**Hindwing.** As in male, but with the marking tending on the whole to be less clear-cut. In females with the lighter form of ground-colour a greater resemblance to *lutescens* is apparent in the marking itself, this applying particularly to one paratype in which all the lighter marking is outlined with dark scaling. A light postdiscal patch of the type referred to under the male has definitely been present in a small minority of the females which have been examined.

Length of forewing: 13.0 – 16.25mm. (15.5mm., in allotype).

In both sexes the head bears largely vinous hairs, mixed with darker ones, with the eyes narrowly, if though not always completely, encircled with white scaling. The dark thorax bears ochreous to orange-brown hairs and appendages above (more greyish in some specimens) and is largely greyish (or the actual scaling, white), beneath – also the legs; abdomen with the hairs or scales above and scaling below, much as in the case of the thorax, and with some intermittent whitish scaling laterally. Palpi with the first joint brownish; remaining portion mainly white, but dorsally brownish, as well as part of the outer portion for a good distance from its commencement. Under considerable magnification the darker portions of the palpi are seen to consist chiefly of dull orange and black scaling (the proportion varying in individual specimens), and there is sometimes a slight inclusion of vinous scaling. The first joint is slightly white – scaled near the tip and is partly white, inwardly, along its length. Antennae dark brown to blackish, with partial silvery-white scaling beneath and on sides, and the lower-inner portion of the club deep orange or orange-brown.

♂ Holotype, SOUTH WESTERN CAPE PROVINCE: Near Goudini, 15.XI.1980 (Dr. J. B. Ball).

♀ Allotype, S. W. CAPE PROVINCE: data as for holotype, 3.XII.1980 (Dr. J. B. Ball). Dr. Ball has wished to present the holotype and allotype to the Transvaal Museum.

Paratypes in Coll. Dr. J. B. Ball: data as for holotype, 1.III.1980, four ♂♂, one ♀; 15.XI.1980, nine ♂♂, one ♀; 3.XII.1980, four ♂♂, three ♀♀ (J.B.B.). (Three of these paratypes will be presented by Dr. Ball to the Transvaal Museum).

Paratypes in Coll. British Museum (Nat. Hist.): SOUTH WESTERN CAPE PROVINCE: Near Goudini, 15.XI.1980, one ♂; 3.XII.1980, one ♀ (Dr. J. B. Ball); British Museum Reg. Nos. Rh. 18708 and Rh. 18707 respectively.

Paratypes in author's collection: as holotype, 3.XII.1980, one ♂; 15.XI.1980, one ♀ (J. B. B.).

Paratypes in Coll. W. H. Henning: as holotype, 15.XI.1980, one ♂, one ♀; 3.XI.1980, two ♂♂ (J. B. B.).

The distinctness and degree of development of the marking of the hindwing underside can vary considerably, in this butterfly, if fairly constant in most specimens. This applies especially to the females. Although *Al. lutescens* has been used, in the description, as a convenient basis of comparison, it is fully realised that there are other taxa of the *Al. thyra* group which show close affinity to *Al. carolynnae* – including one from the Knysna area.

Dr. Ball has made the following comments with respect to his field experience of specimens of the present insect:— “They were all found on the slopes of the Slanghoek Valley near Goudini; and were in association with *Al. thyra* (L.) – which occurs also at con-

siderably higher (and lower) altitudes. They were found only at three localised locations, + 650 ft. above the valley "floor".

"General over this area, was Cape "fynbos" vegetation, with open rocky spaces. Three species of *Aspalathus* (Papilionoideae) were found in the area and females of both *Al. thyra* and *Al. carolynnae* were found on it though none were seen ovipositing. The habits are very similar to those of the butterfly's congeners: short swift flights, and often returning to a preferred spot on a rocky area or settling on vegetation."

This interesting addition to the very large genus *Aloeides* has been named with much pleasure after Mrs. Carolynn Ball.

The author wishes to take this opportunity to correct the following misprints which occurred in his earlier article in Vol. 94, Nos. 3-4, of this journal:— P. 43, in line 19 from top of page, "K. M." should read "H. N."; P. 44, in line 20 from bottom of page, "Wykenham" should read "Wykeham".

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PRECIS OCTAVIA CRAM. (LEP.: NYMPHALIDAE): EMERGENCE OF WET AND DRY SEASON FORMS FROM COLLECTED LARVAE.

— In February, 1956, I collected seven attractive Nymphalid caterpillars from *Coleus* plants in a front garden at Eshowe, Natal. They were taken down to the warmer climate of Maidstone on the coastal plain north of Durban, and kept in three glass topped metal tins 3" by 1½", and fed on *Coleus*. All had pupated within ten days, and at the time of collection were somewhat less than half grown, and did not vary much in size. Butterflies emerged on the 4th, 8th, 10th(2), 12th and 14th(2) March, five being of the orange wet season form like their parents, but two which emerged on 12th and 14th March were of the blue dry season form *sesamus* Trim.

The seven larvae may have originated from one or more females, but the larvae for much of their lives, and the pupae, were kept under identical conditions. D. Swanepoel in his *Butterflies of South Africa* gives September to March as the flight period of the wet season form, and states that f. *sesamus* appears about March/April; regarding the former there is a succession of broods. It appears that of the seven larvae two were destined genetically to produce f. *sesamus*: could they have originated from the same female, i.e. at this time of seasonal change may a female lay eggs to produce a proportion of both forms? Or is it more likely that the two forms were from different females respectively, each producing a homogeneous brood? L. McLeod, *Ent. Rec.* 92, states that his experimental work with this species has shown that temperature alone, not humidity, is the primary factor in determining seasonal form. The experience with breeding *P. octavia* related above seems to be worth reporting.

Regarding seasonal variation of *Precis* species in Natal, I note that at Entumeni on the coastal plain on April 15th 1956, the wet season form of *P. octavia* was still flying and in excellent condition; whereas on May 5th, only the dry season form *sesamus* was in evidence, although *P. archesia* was present and fresh only in its wet season form. — B. K. WEST, 36 Briar Road, Bexley.

MATE LOCATION STRATEGIES IN  
 THE WALL BROWN BUTTERFLY, *LASIOMMATA*  
*MEGERA* (L.) (LEPIDOPTERA: SATYRIDAE):  
 WAIT OR SEEK?

By ROGER L. H. DENNIS\*

(Concluded from Vol. 94 page 214)

Visual cues assist mate location; either the male or a section of the habitat which the males frequent (occasionally both) must stand out clearly from the background environment. Contrasting colour seems closely associated with perpetual patrolling as in *M. galathea*, but also in other 'whites' as, for instance, *A. cardamines*, *A. rapae* (L.), *A. napi* (L.), *P. brassicae* (L.) and *L. sinapis*. Conversely, habitat cues exist especially for more cryptic perchers — rock outcrops for *H. semele* and clearings in woodlands for *P. aegeria* — but occur also for some patrollers as well. For instance, *A. cardamines* uses woodland edges. Patrolling also seems to be associated with scattered and unpredictable female resources (particularly the Pieridae) whereas they tend to be clustered and concentrated for perchers (Baker 1972). In this respect, *L. megera* adheres to Baker's prediction since perching and patrolling sites for males are usually oviposition sites.

Common to perching and patrolling *L. megera* are linear or edge habitats. Edges have the effect of concentrating resources, in the case of mate location, males for females, necessary for a cryptic butterfly like *L. megera*. It is a common locational cue in butterflies for other activities, for instance egg-laying (cf., Courtney and Courtney 1982; Dennis, in press).

What then makes for an established territory? Sites chosen are always distinctive topographically — stones, bricks, gravel, bare patches along short sections of paths, tracks, hedges, rock cuttings and fences, specifically 'visual peaks' in bright sunshine and shelter where males can advertise their presence to females. *L. megera* is cryptically patterned against predation but this in turn determines the need for mating cues. Patrolling may well be an adaptation to less concentrated resources, — to edges without peaks — for instance long uniform expanses of hedgerow where vision and manoeuvrability are likely to be more limited in the perching male than one in flight, and where females are unable to home in on precise points. In this sense, it may well be a measure of habitat suboptimality, but a saving on defence results in no increase of energy expenditure in patrolling males. The 'ritual' skirmishing that does occur is likely only to facilitate spacing and thus prevent harassment and loss in courtship. Patrolling may also be a measure of low

\*Remar", 4 Fairfax Drive, Wilmslow, Cheshire.

territory: male ratio (shared territories), as in *A. urticae* (Baker 1972), but the simultaneous presence of defended territories points to other factors beside, – to topographic distinctions in the habitat.

The perching-patrolling continuum thus represents subtle adjustments to selective advantages and disadvantages. Where resources are concentrated, – simply, where a male can announce his presence to a female – it becomes worthwhile to defend a site; but where these are diffuse, – obvious topographic advantages no longer exist for a male to declare his presence, – or population density is higher, then prolonged defence would result in lost opportunities. Increased patrolling in sunny weather implies greater competition among males for females along habitat edges which are then effectively highlighted. Thus, *L. megera* has helped to illuminate an important issue. Males can still 'hilltop' (Shields 1967) in a relatively plane landscape by selecting edges and visual peaks. These may be evident from no more than a contrast in brightness, a switch in albedo, presented by a pile of gravel or a bare patch of earth. The point is that these features stand out and in this way the Shields 'hilltop' model has potential relevance for all butterflies, hills or no hills.



A. Typical perching site for *L. megera* males at Ashley, Hale; – a bare patch along a path in a field corner at a T-junction of verge and hedge.



B. Patrolling ground for *L. megera* males provided by paddock fencing at Brereton Heath, Congleton. Males tend to concentrate at the top left corner where the fencing extends through a gap in the hedge. However, the top right corner is shaded by trees and obscured by undergrowth.

### Acknowledgement

My grateful thanks to Dr Bob Williams for processing the data via the NUMAC computer installation in Durham University.

### Correction

The following is a correction of errors which appeared in this article in Vol. 94. Page 212, caption to figure 2, 4th line, replace "(minutes)" by "(seconds)". Page 214, line 12 up, for "because" read "expect that"; and line 11 up, for "adaptations," read "adaptations; -".

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BUTTERFLIES IN THE MONTS DE JURA  
AND VALAIS, JUNE 1981

By Dr. C. J. LUCKENS\*

From its glacier above the Furkapass the great Rhone river forms an increasingly distinct natural barrier as it flows south west to Martigny in the Valais. There it makes an abrupt right-angle turn north toward Lake Geneva. Contained here by geographical and climatic factors, a unique fauna and flora has developed and it was this remarkable corner of the river valley that J. M. Chalmers-Hunt and I decided to visit for a few days in mid-June.

We left late at night on June 15th, by the usual route via Dover, and by 7a.m. the following day were eating a primitive breakfast beside the car on the edge of chalk grassland south of Reims. A dawn mist was dispersing in the early morning sun, and already the first *Melanargia galathea* L. were lifting out of the grass. To remind us that we were across the Channel a Golden Oriole started to flute from the hawthorn scrub. As the warmth increased *Coenonympha arcania* L. and the two blues *Lysandra bellargus* Rott. and *Lycaeides argyrgnomon* Berg. also appeared in small numbers.

By 10 a.m. we were ready to investigate some new ground – the reputedly rich deciduous wood near the village of Germaine. From a distance these looked magnificent and we started off in high hopes of finding some of the rarer forest species such as *Limenitis populi* L. and *Euphydryas maturna* L. For the rest of the morning and all afternoon of that hot, sunny day we explored these woods becoming more and more disillusioned. The aspen, willow, ash and oak were there, amid fine sunlit clearings, but there was a paucity of butterflies, and all we saw were a few *C. arcania*, *Artogeia napi* L. *Ochlodes venata* Br. & Grey and a mystery skipper captured by J. M. C.-H. This latter was worn and unrecognisable but proved on dissection to be *Spialia sertorius* Hoffmannsegg. C. J. L. found a brood of young *Nymphaline* larvae on nettle which later in the summer produced a fine series of *Araschnia levana* L.

Wearily we set up camp nearby and early the next day set off for the Jura. Here we planned an overnight stop in order to survey a wetland locality on the Swiss/French border south of Pontarlier. It was late in the afternoon when we arrived but the boggy ground looked very promising with great sheets of *Polygonum* on the edge giving way to heathy areas where *Vaccinium uliginosum* grew in clumps around scrub birch. No butterflies were flying but J. M. C.-H. set about netting micros in the early evening sun while C. J. L. started searching the *Vaccinium* in a desultory way. The very first bilberry bush had a newly deposited egg of *Colias palaeno* L. on the upper surface of a leaf, showing that mated females of this fine Clouded Yellow were already on the wing.

Heavy rain overnight continued the next morning and nothing flew on the marsh, so we decided to head south to our main collecting area. All along the roads through the Jura and especially beside

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the numerous lakes our flagging spirits were lifted by the Kites sailing overhead – both the Black and Red species. As it was mid-summer we were surprised to see a group of Fieldfares in a damp meadow but reference to the books revealed that the Jura is one of their southern breeding grounds.

The weather improved as we left Montreux and by the time we reached Martigny the sun was shining on the south facing vineyards a little way up-river. One member of our partnership prefers lunch sitting down and at the proper time, whereas the other opts for a quick snack on the move – walking around a favourable locality the while. It was 2 p.m., but he who holds the latter school of thought happened to be driving, so in spite of protests we continued up the Rhone valley until we reached the sunlit hillside. We stopped at the edge of the vineyards where *Colutea arborescens* grew in clumps under the trees. Here several interesting species were flying along a stony path including *Brenthis daphne* D. & S., *Hipparchia alcyone* D. & S., *Lasiommata maera* L., *Artogeia manni* Mayer., and *Carcharodus lavatherae* Esp. On a large clump of *Coronilla* we each took single males of *Meleageria daphnis* D. & S. in mint condition. Back along the track around the *Colutea* bushes appeared the large dashing blue we sought – *Iolana iolas* Ochs. This first specimen was a ragged female which readily deposited eggs on the calyces of seed pods of cut *Colutea*, but unfortunately none of the resulting larvae survived beyond the first instar.

June 19th was the day we set aside to explore the Simplon Pass. Driving up from Brig in magnificent weather we soon started seeing numerous *Colias*, blues and *Erebias* flying beside the road, and some distance before Ganter bridge we stopped to sample the steep hillsides above and below the road. Majestic *Parnassius apollo* L. sailed over the rocky slopes in great plenty, among many *Colias australis* Verity and *L. bellargus*. The dominant *Erebia* was *alberganus* de Prunn. but there were also a few worn *Erebia triaria* de Prunn. Scrambling up the pineclad hillside above the road was difficult but rewarding, as it was here that we came across *Plebeius pylaon trappi* Verity. We found males only and confined to areas where its food-plant, the curious yellow *Astragalus excapus* grew.

A further climb brought us out of the pines onto a sloping alpine meadow several acres in extent and seething with butterflies. Especially conspicuous were the mustard yellow *Papilio machaon* L., and with them flew a diversity of blues and fritillaries. We stood for several minutes in appreciation of this delectable place until a fast-flying *Pierid* appeared and in an instant C. J. L. was in hot pursuit. Twice around the meadow they both flew, with the odds increasingly in favour of the *Pierid* as they come around for the third time. At one corner idled J.M.C.-H., a cool spectator. As the two contestants approached he nonchalantly held out his net and *Euchloe simplonia* hurled itself into its depths. These are times that test friendship to the uttermost.

After lunch we drove higher up the pass beyond Berisal and walked through some lush hillsides with heavy growths of cranesbill and buttercup. A different set of butterflies were in evidence

here including plenty of *Parnassius mnemosyne* L. and *A. napi bryoniae* Ochs., and a few *Palaeochrysophanus hippothoe* L. and *Eumedonia eumedon* Esp. At the top of the pass we spotted two more *simplonia* but failing to get anywhere near them, we drove further down the south side to explore the renowned Laggental – the home of *Erebia christi* Ratzer. We did not expect to see this rare butterfly, being almost a month too early for its flight period, but as we walked up the track above the gorge we found other butterflies in abundance. Especially common were the blues *Cyaniris semiargus* Rott. and *Cupido minimus* Fuessl., worn *Clossiana euprosyne* L. and the ubiquitous *E. alberganus*. We also took a few examples of *Coenonympha darwiniana* Staud.

June 20th found us on the steep hillsides above the vineyards near Martigny. The early morning haze was slow to clear but there was promise of heat later on and several butterflies were about. Males of the large black *Satyrus ferula* F., *M. galathea*, and *B. daphne* were common along with a few *P. apollo*, *Leptidea sinapis* L. and a solitary *Glaucopsyche alexis* Poda. J. M. C.-H. spotted a *Melitaeid* larva on *Linaria* and thereafter we found over a score of these spiny greywhite and orange creatures. These emerged as *Melitaea didyma* Esp. five weeks later though we optimistically thought they might be *Mellicta deione berisalii* Ruhl., especially as a moment later J.M.C.-H. netted a worn fritillary which on closer examination proved to be a male of this desired species. There have been few reports of *M. deione berisalii* recently – in fact we are unable to trace any records in the literature for over thirty years.

Even though the weather had become clear and sunny no more *deione* turned up, so after netting two *Heodes alciphron gordius* beside the car, we set off to explore another hillside. As we wandered up a track through the vineyards Hoopoes were calling softly from the wooded slopes above and we caught occasional glimpses of these exotic-looking birds flying overhead. Isolated bushes of *Colutea* grew beside the path and when an immense blue flew past there was little doubt as to its identity. After an athletic chase J.M. C.-H. netted it – a perfect male *iolas*. A few minutes later C. J. L. took a fine female which was sitting on the bare ground and then two more were seen, flying around their foodplant in an almost inaccessible spot on the steep hillside. After executing a flanking movement with much crashing of undergrowth, C. J. L. finally reached this bush and netted one of these *iolas*, while J.M.C.-H. waiting below accounted for the other. These strenuous efforts proved unnecessary however, as we found *iolas* in several places along the path. In fact nearly every *Colutea* growing in sheltered but sunny situations seemed to have at least one attendant – often an ovipositing female. As *iolas* is usually scarce in this area, we thought we should limit our collecting and were content with three specimens each of this magnificent blue.

About mid-afternoon, we drove through Fully and explored the hillside high above the village. *P. apollo* appeared in small numbers and a large *Limenitis reducta* Staud. skimmed by neatly eluding J. M. C.-H. A mated pair of *A. manni* was also noted, and several

large examples of *Pyrgus carthami* with extensive white markings were taken. No *iolas* were seen here in spite of the presence of *Colutea*, and all the many *Mellicta* netted were disappointingly *athalia* Rott.

As we drove further west alongside the Rhone toward Dorenaz the temperature dropped perceptively, and a chill wind swept down the valley as the river swung abruptly north. *Plebicula thersites* Chapman was the only new butterfly species, and they and other butterflies were already starting to roost in the long grasses at the base of the hillside.

An early start on June 21st returned us to the Jura marsh by 10.30 a.m.. It was a dull cool day and no butterflies flew until around midday when breaks in the cloud cover appeared. During brief glimpses of sunshine the lemon-yellow *palaeno* males appeared, careering over the marsh. The females were relatively uncommon and we saw only two, but a half dozen males were seen during a total of perhaps twelve minutes' sunshine. One male was also noted at rest on a *Vaccinium* bush, but the long periods of dull rainy weather were otherwise unproductive. The only other butterfly species seen was *Melitaea diamina* Lang. By 1 p.m. the rain was falling heavily and followed us all through the day to our overnight stop at Chaumont.

Forges les Eaux, between Beauvais and Dieppe, is an outlying locality for *Boloria aquilonaris* Stichel and we planned a search there on our last day. Collecting this butterfly is now prohibited in France, but we were interested nevertheless in finding it in this rather unlikely area so near the Channel coast. We explored the wooded countryside around Forges les Eaux for several hours in hot weather but nowhere could we find the bogland habitat that this insect frequents.

So our brief holiday ended on a minor disappointment. We had no doubts, though, about the overall success of our expedition, and the preceding few days spent among the rich fauna of Valais and Jura had been memorable indeed.

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THE EARLY STAGES OF *CROMBRUGGHIA DISTANS*  
(ZELLER) (LEPIDOPTERA: PTEROPHORIDAE)

By A. M. EMMET\*

Zeller (1847) named this species from captured adults. The first mention of the early stages came from Hering (1891) who noted that Herms had found the dusty grey-green larvae of the second brood at the end of June and the beginning of July in the park of Hohenkrug, feeding on the flowers of *Crepis tectorum*. Hofmann (1895) gave a full account of the life history, making his description from preserved material sent to him by Dr. Hinneberg of Potsdam. Subsequent authors (Tutt, 1906; Meyrick, 1928; Beirne, 1952; Hannemann, 1977) all accepted Hofmann's description.

Tutt (*loc. cit.*) deplored the fact that *C. distans* had never been reared from the larval stage in this country, a situation which seems to have remained unaltered until 1982. He does, however, cite two instances of the finding of the early stages. Norgate found two pupae attached to the flowers of *Crepis capillaris* in Suffolk in 1892 and reared the adults. Chapman made a very detailed description of these pupae which Tutt quotes *in extenso*. It was largely the widely different physiology of the pupa and the method of pupation which led Tutt to remove *distans* and *laetus* Zeller from *Oxyptilus* and place them in a new genus *Crombrugghia*. Then, in early August c. 1897, Durrant swept two larvae possibly from the flower-heads of hawkweed oxtongue (*Picris hieracioides*). One larva was injured and died and the other produced a parasite. Tutt quotes Durrant's description of his larvae, which differs in almost every detail from that made by Hofmann, but places it in square brackets; this was the correct procedure since there was no proof that Durrant's unreared larvae were in fact *C. distans*.

On the 18th of August, 1981 Mr. E. C. Pelham-Clinton, my wife and I came upon *C. distans* flying rather commonly in a clearing in the Forestry Commission's plantations north-east of Barton Mills, Suffolk. On the 2nd of May, 1982 the three of us were in the same area and decided to look for larvae. In about an hour's search each of us found one larva on smooth hawk's-beard (*Crepis capillaris*). On returning home, we discovered that these larvae bore no resemblance to the published description, although subsequent research showed that they were similar to those swept by Durrant. In view of this, my wife and I made further visits on the 9th, 11th (accompanied by Dr. I. Watkinson) and 15th of May. Amongst us we found eleven larvae and one pupa. The larvae were resting on the midrib of a rosette leaf of the foodplant. Although they are fairly easy to see, searching for them is time-consuming and requires intense concentration; about one man-hour's work was needed for each larva.

Seven adults and four parasites emerged between the 26th of May and the 7th of June, the twelfth larva having been sent to the British Museum (Natural History) where Mr. D. J. Carter first photographed and then preserved it.

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Hofmann described the larva as follows: 12mm long, green with large, dark brown, stellate-haired tubercles in the usual positions. The red-brown markings consist of a broad dorsal stripe, an indistinct, washed-out, narrow subdorsal and a similar subspiracular, a rather broad spiracular, and a basal consisting of separated spots. Spiracles margined with dark brown. Head shining black, Prothorax green, the centre with a large, black-brown spot divided by a fine central line. Anal flap brownish yellow, beset with bristles. Thoracic legs with first and second joints black, the third whitish. Anal claspers with a brown chitinous plate on the exterior.

By contrast, my own description of the Suffolk larvae is as follows. Length *c.* 9mm. Head green with a faint brownish tinge. Body, including prothoracic plate, green; a pinkish purple dorsal stripe, obsolescent between segments; subdorsal, lateral and supra-spiracular rows of pinacula bearing stellate tufts of whitish setae, the pinacula being concolorous with the adjacent part of the abdomen, the subdorsal row purplish pink if the dorsal stripe is broad enough to include them; legs green. Variation seems to be confined to the width of the dorsal stripe. The coloration is cryptic since the basic green harmonises with the leaf of the foodplant and the dorsal stripe with the midrib which is often purplish. This description agrees with Durrant's except that he gave the head as dark brown. Herms' "dusty grey-green" approaches this description more closely than that of Hofmann.

The larvae rest head-inwards on the rosette leaves. Probably most were full-fed since their habits were sedentary and little feeding was observed. This was confined to the leaves and in no instance had the central shoot been attacked which was the method of feeding described by Hofmann for his larvae.

Pupation usually took place on a rosette leaf of the foodplant, also head-inwards: in two cases it was on an adjacent blade of grass. The larva spins a slight mat of silk to which, after ecdysis, the cremaster is firmly attached. Chapman (*in* Tutt, *loc. cit.*) stated that the pupa was incapable of movement. This is correct only insofar as it does not move about inside a cocoon as do the pupae of *Oxyptilus*. At night and in dull weather the pupa rests flush with the leaf-surface. In sunshine, however, it erects its anterior portion at an angle of from 30° to 60°. I kept my larvae and pupae on potted plants out-of-doors. On three consecutive mornings I brought the pupae in at about 7.00 a.m. and placed them on a windowsill in full sunshine. After about a minute's exposure they cocked up in a single, sudden movement. Bright sunshine is probably beneficial to the development of imago.

As is often the case with plumes, the pupa resembles the larva: it is green, varying to blackish green, with a single pinkish purple dorsal stripe which is uninterrupted on abdominal segments 1-4. Subdorsal pinacula are strongly developed and modified so as to form a row of fleshy, bifid processes, each bearing a single anterior and posterior seta. Their development is most pronounced on abdominal segments 3 and 4, where there is also a rudimentary third central protuberance. It is notable that although Hofmann's des-

cription of the larva differed so much from that of the Suffolk larvae, his, Chapman's, my own and other descriptions of the pupa are in general agreement.

It seemed possible that there might be a difference in the coloration of the spring and summer generations of larvae. If the spring larvae feeding on leaves were cryptic, the summer generation, if they fed on flowers, might have evolved a different cryptic pattern corresponding with that described by Hofmann. With this in mind, my wife and I revisited the locality on the 10th of July. This was evidently too late in 1982, since a prolonged search produced two pupae but no larvae; the pupae exactly resembled those of the spring generation and the site selected for pupation was also similar. The flowers of *Crepis capillaris* and related Compositae showed no signs of attack and sweeping them bore negative results. The pupae produced imagines on the 13th and 15th of July. It is unlikely that they were belated members of the first generation, since the exceptionally hot weather in early June should have precluded any tendency to lie over; moreover, Mr. J. Heath visited the site at the end of July and found the second generation flying freely.

Mr. M. Schaffer of the British Museum (Natural History) kindly dissected the genitalia of one of my reared specimens and found that they conformed with those of the Zeller type material. There seems no doubt, therefore, that the moths we reared were *C. distans*. The uncertainty concerns the identity of the larva described by Hofmann. It is barely credible for it to be a variant form of *C. distans*, nor does it conform with the larva of *C. laetus* as described by Millièrè (1859). The two recognised species of *Crombrugghia* are very similar and have been much confused with each other (Tutt, *loc. cit.*). The possibility must be entertained that there is a third species, occurring on the Continent and perhaps also in Britain, which is superficially very similar as an imago but differs in its early stages. The two British records of *C. laetus* were made in Kent (Youden, 1963) and North Wales (Michaelis, 1969), these specimens being thought to be migrants. Anyone conversant with the slow, hovering flight of these delicate plumes will find it hard to credit that they are capable of a long, sustained journey, even if aided by the wind. In view of the possibility of a third species, it might be worth while rechecking the determination of these two moths for a start.

I am indebted to M. Schaffer and D. J. Carter of the British museum (Natural History) for their help and advice.

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MORTAL COMBAT IN *CORDULIA AENEA* L. (ODONATA: CORDULIIDAE). — Whilst recording dragonflies at a woodland lake near Wasing, six miles east of Newbury, on 27th June 1980, I witnessed a violent aspect of dragonfly behaviour which, so far as I am aware, has not been recorded in the literature.

On that day, which was warm and windless, the Downy Emerald, *Cordulia aenea*, was the commonest large dragonfly on the lake, and large numbers of them were flying low, and usually out of reach, by the water side. Two or more would occasionally come into conflict over territory, but would separate after a few seconds apparently none the worse. Early in the afternoon, however, my colleague Chris Newbold and I witnessed a particularly violent and prolonged fight terminating in one of the combatants falling onto the surface of the water. Chris was able to land the unfortunate insect with his pond net. To our surprise, the dragonfly's abdomen was missing. We were left in no doubt the injury had been inflicted by the rival male *Cordulia*, resulting in the victim's helpless pitch into the water. The dragonfly was still alive, and I was able to photograph it as it clung motionless to the tree stump where I had placed it. Doubtless it did not survive for long.

I have never witnessed such an occurrence before or since. No one to whom I have mentioned the event has either and I assume that such mortal combats must be rare. Or is *Cordulia aenea* simply more bloodthirsty than the rest of our Odonata? — P. R. MARREN, Studio Flat, Gordon Lodge, Aboyne, Aberdeenshire.

CORRECTIONS. — Vol. 94, page 10, line 23, for 'our' read 'out'. p. 157, 1.13, for LAGIA read LAGRIA (and similarly on back cover). p. 192, 1.10 up, for 'Is' read 'It' p. 193, 1.21, for 'rapidly' read 'rapidly', 1.24, for 'ting' read 'thing'. p. 231, 1.2, for 'botope' read 'biotope'.

A STRIKING NEW SPECIES OF *GNATHOTHLIBUS*  
(LEPIDOPTERA: SPHINGIDAE (MACROGLOSSINAE))  
FROM SULAWESI

By A. H. HAYES\*

*Gnathothlibus brendelli* sp.n.

*Description.* Male. Palpus pale yellow. Head with red stripe anterior to eye and creamy yellow spot at base of antenna. Upper surface of thorax dark brown, with two prominent spots and tegula stripe creamy yellow. Thorax under surface red laterally, pale yellow at centre and dark brown near legs. Upper surface of abdomen brown with dark brown edges to sternites. Under surface of abdomen brown with dark brown edges to sternites. Under surface of abdomen pink medially, bordered with orange.

*Forewing:* Upper surface brown with bluish grey suffusion and with black band on hind margin. Under surface bright yellow with brown outer margin and with dark brown irroration on distal third of wing.

*Hindwing:* Upper surface bright yellow with black spot at base; dark brown scales forming stigma and with narrow brown marginal band extending along veins. Under surface bright yellow with thin dark brown marginal and with dark brown irrorations on distal two-thirds of wing.

Female not known.

*Measurements.* Forewing (distance between apex and centre of mesoscutum): 46mm.



Fig. 1. Holotype ♂ *Gnathothlibus brendelli* Hayes

*Discussion.* Differs from the closely allied *Gnathothlibus meeki* (Rothschild and Jordan) in the presence of red on the under surface of the thorax and the stigma on the hindwing. The discovery of this new species that appears to be endemic to Sulawesi, was first publicised in a BBC broadcast account of the Operation Drake Expedition by Dr. Stephen L. Sutton. I am most grateful to Martin Brendell, Stephen Sutton, and others on the expedition whose combined efforts amassed such a fine sample of hawkmoths for the national collection.

*Material examined.* All specimens are in the British Museum (Natural

\*British Museum (Natural History).

History). Holotype ♂. At m.v. light. Sulawesi Tengah: Mt. Tambusisi 6,500 ft. 1°38'S — 121°23'E. 8-9.iv.1980. M. J. D. Brendell. B. M. 1980-280.

Paratypes: 2 ♂♂, same data as holotype.

1 ♂, same data but collected by S. L. Sutton. B. M. 1981-52.

1 ♂, same data but collected at 4,000ft. 1°39'S — 121°21'E. 3-13.iv.1980.

LEPIDOPTERA LARVAE FEEDING ON THE LEAVES AND FLOWERS OF BUDDLEIA DAVIDII. — *Buddleia davidii* was introduced to Britain in 1896 and is now widespread as an ornamental and as an opportunist coloniser of waste land, building sites and old walls. A native of China, it belongs to a family of plants, the Buddleiaceae, unrepresented in the native flora of Britain and western Europe. Native plants tend to support a richer and more varied fauna than alien species. Since *B. davidii* is very different from any native British plant it is of considerable interest to determine which species are able to use it as a food-plant. The following list is compiled from records sent by correspondents following an appeal for information and from personal observation and brings up to date (31 March 1982) records previously published (*Ent. Rec.* 89: 344, *Biol. Conserv.* 17: 149-155).

LYCAENIDAE: *Celastrina argiolus* L., Holly Blue.

NOCTUIDAE: *Noctua pronuba* L., Yellow Underwing; *N. comes* Hbn., Lesser Yellow Underwing; *Naenia typica* L., Gothic; *Mamestra brassicae* L., Cabbage Moth; *Melanchra persicariae* L., Dot; *Lacanobia oleracea* L., Bright-line Brown-eye; *Orthosia stabilis* D. & S., Common Quaker; *Cucullia verbasci* L., Mullein Shark; *Polymixis flavicincta* D. & S., Large Ranunculus; *Amphipyra pyramidea* L., Copper Underwing; *Euplexia lucipara* L., Small Angle Shades; *Phlogophora meticulosa* L., Angle Shades; *Cosmia trapezina* L., Dun-bar.

GEOMETRIDAE: *Eupithecia exigua* Hbn., Mottled Pug; *Gymnoscelis rufifasciata* Haw., Double-striped Pug; *Odontopera bidentata* Clerck, Scalloped Hazel; *Biston betularia* L., Peppered Moth; *Peribatodes rhomboidaria* D.&S., Willow Beauty.

TORTRICIDAE: *Pandemis cerasana* Hbn.; *Archips podana* Scop.; *Ditula angustiorana* Haw.

Most of the species listed above are known to feed on a wide variety of plants. *C. verbasci* is an exceptional species because it was effectively confined to *Verbascum*. Records of it feeding on *B. davidii* have been received from Kent, Sussex, Surrey, Oxfordshire, Wiltshire, Berkshire, Avon, Suffolk, Cambridgeshire, Northamptonshire and Leicestershire. This suggests a dramatic switch with far-reaching consequences for the abundance and distribution of the moth in Britain.

I thank correspondents for records. They will be acknowledged in a more detailed article when more records are received. Can anyone give me additional records of *C. verbasci* on *B. davidii*, or add to the list of species thus far known to feed on the plant? — DENIS F. OWEN, 66 Scraptoft Lane, Leicester LE5 1HU.

SOME OBSERVATIONS OF LICHEN MARKED  
LARVAE OF THE SCALLOPED HAZEL:  
*GONODONTIS BIDENTATA* CLERCK

By Dr. M. E. N. MAJERUS\*

Poulton, in a series of papers in the late 19th century, presented data and observations which showed that the larvae of a number of species of Lepidoptera respond to the colour of their immediate surroundings so that they match their background very exactly (see Poulton, 1885, 1892). The larvae of the Brimstone Moth (*Opisthograptis luteolata*) and the Peppered Moth (*Biston betularia*) provided striking results in that larvae of both these species if reared amongst green leaves were of a green form, whilst those reared amongst brown twigs became brown. Larvae of other species such as the Scalloped Oak (*Crocallis elinguaris*) and the Silver Ground Carpet (*Xanthorhoe montanata*) which have a series of brown forms but no green ones were also found to be susceptible, their shade of brown depending on the darkness of the twigs upon which they rested. One of Poulton's most striking results concerned larvae of the Scalloped Hazel (*Gonodontis bidentata*). He found that a "lichen pattern" could be induced in these larvae if bits of white paper were mixed in with foodplant.

Poulton's experimental observations have been confirmed by various observations in the field. Cockayne (1928) noted that in a rowan wood at Gight in Scotland the trees on the lower slopes were old and lichen covered whilst on the higher slopes the trees were younger, healthier, and less lichen covered. Lichen marked larvae of the Scalloped Hazel were only found on the lower slopes, where lichens were plentiful.

Cockayne (1928) speculates that although obviously responding to environmental factors, the variation in larval colours and patterns of these arbivorous species would have a genetic basis. He provided no evidence for this suggestion.

I became aware of Poulton's observations and Cockayne's remarks about seven years ago, since which time, whenever I have taken gravid females of the Scalloped Hazel I have tried to use the ova to repeat Poulton's experiments. I present here some observations from this work which I feel endorse Cockayne's view that the variation would have a genetic basis.

The method I have used has been to divide each brood into four samples, rearing each sample under different conditions as follows:

*Sample 1* fed on willow, green twigs always being used.

*Sample 2* fed on hawthorn, brown or brown-red twigs always being used.

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- Sample 3* fed on willow and hawthorn with bits of torn up white tissue added to the boxes.
- Sample 4* fed on willow and hawthorn with bits of torn up black tissue added to the boxes.

Broods from 21 wild females have been reared in this way over the last seven years. The females concerned were taken at one of four sites. Englefield Green, near Egham, Surrey; Picket Hill, near Ringwood, Hants.; Keele University, near Newcastle under Lyme, Staffs.; and Cambridge.

The results from samples 1, 2 and 4 of the broods were consistent for all 21 broods. All these larvae were some shade of brown and generally unicolorous in appearance. Sample 1 larvae, fed on willow, were generally paler than sample 2 larvae, fed on hawthorn. The larvae from samples 4 which had black paper added to their food were rather more variable and some were a darker brown than any from the other samples, though by no means black. These samples then seem to bear out Poulton's observations with the palest larvae occurring on willow and the darkest when black paper was added. However, all the broods reacted in the same way regardless of their origin. This was not so for the samples reared with white paper.

Nine broods were reared from females taken at Picket Hill. In all of these the majority of sample 3 larvae were more or less lichen coloured. The few larvae which were not (always less than 10% of the sample) were very pale brown. Five broods were reared from females taken at Keele. None of these produced any lichen coloured larvae, all larvae being unicolorous. Similarly, none of the three Cambridge broods produced any lichen coloured larvae. The other four broods reared were from females taken at Englefield Green. Of these, sample 3 from one produced all lichen coloured larvae. The other three broods produced no lichen coloured larvae.

Apart from the differing treatments for the samples, all larvae were reared under similar conditions to negate the effects of other environmental factors. It thus seems from these observations that Cockayne's suggestion of a genetic basis for this type of variation is well founded. It seems likely that there is a gene which gives larvae the potential to produce a lichen pattern if the environmental conditions, i.e. the colour of the immediate surroundings, make this pattern appropriate. A second gene, probably an allelomorph of that mentioned above does not give this potential. In this case, all the Picket Hill broods have the gene which confers the potential for the lichen pattern and have it expressed, while in the Keele and Cambridge broods this gene is not present or at least is not expressed. Of the Englefield Green broods, in one this gene is expressed. In the other three it is not.

The precise mechanism of inheritance cannot be assessed from the observations I have noted above. However, I have good stocks of pupae from the Picket Hill and Cambridge broods, and hopefully by crossing these two strains next year, it will be possible to elucidate the details of the system.

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AGRODIAETUS FABRESSEI OBERTHUR (LEP.: LYCAENIDAE): OBERTHUR'S ANOMALOUS BLUE. — Known only from a few restricted areas in Spain, the following concerning this butterfly — whose foodplant is unrecorded according to Higgins & Riley (1980) — may be of interest. While entomologising in the old classic terrain at Santa Croce, Albarracin, on the 29th May 1982, I found two Lycaenid larvae (one of which was nearly full-grown) on *Onobrychis* growing at the edge of a dried up watercourse. I retained a sample of the foodplant, but unfortunately insufficient for positive determination, and Mr. J. M. Mullin (Dept. of Botany, British Museum (Natural History)) to whom I submitted it kindly identified the plant as possibly *O. saxatile* or *O. supina*. However, the former is the more widespread of the two in S. Europe and is thought to be the one on which the larva was found.

I gave both larvae to my friend Dr. C. J. Luckens, who fed them on a variety of Leguminosae in captivity, including *O. viccifolia*, *Lotus corniculatus*, *Medicago sativa* and *Coronilla varia*. The smaller larva died while undergoing ecdysis, but the larger of the two pupated on the 12th June, and in due course a male *A. fabressei* emerged on the 19th July.

I am indebted to Dr. Luckens for the description of the full grown larva and of that of the pupa. *Full grown larva*: Typically lycaenid in shape — slightly larger than that of *Lysandra coridon* Poda (when full grown), measuring about 24mm. Colour: Pale lime green with slightly darker diagonal markings on each segment. Just beneath the spiracles mauve markings, bordered with off-white, form a line running the length of the larva. *Pupa*: Unremarkable. Yellowish-brown very like that of *Polyommatus icarus* Rott., but larger. — J. M. CHALMERS-HUNT.

DEWICK'S PLUSIA AND OTHER MIGRANTS IN NORFOLK IN 1982. — On holiday at Hickling, Norfolk this summer, I was excited to take a single *Macdunnoughia confusa* Steph. (Dewick's Plusia) and *Syngrapha interrogationis* L. (Scarce Silver Y), on the night of 3/4 August. *Autographa gamma* L. was present in large numbers. A few days earlier (29/30 July), a worn *Eurois occulta* L. (Great Brocade) was noted there: a species that is now of almost annual occurrence at Hickling. — T. N. D. PEET, La Chene, Forest, Guernsey.

FURTHER NOTABLE DIPTERA  
FROM WINDSOR FOREST

By A. A. ALLEN, B.Sc., A.R.C.S.\*

(Concluded from Vol. 94 page 232)

## TEPHRITIDAE

*Tephritis formosa* Lw. — Several of this uncommon species were swept from bracken in a cleared pine-growing area in the southern part of the Forest, 4.ix.71, in company with three others of the genus — *conjuncta* Lw., *hyoscyami* L., and *cometa* Lw. Despite the early date they must have taken up this station for overwintering; their foodplants (various Compositae) were nowhere to be seen. *T. cometa* used to be one of our rarest Tephritids, but has now become one of the commonest in parts of the south-east.

## MICROPEZIDAE

*Rainieria calceata* Fall. — A strange-looking and conspicuous fly, discovered by Donisthorpe (1930) in the Forest near Badger's Bridge, in some numbers on a large felled beech; it has been found here by several other collectors (Chandler, 1976) but this apparently remains the sole British locality. The species was therefore a major objective when I revisited the Forest with G.S., and on 27th June 1971 inspection of a stack of cut beech boughs in the general area where it first occurred soon revealed its presence. Subsequent visits showed it to be quite widespread over the northern part of the Forest, chiefly in July, and, in suitable conditions, no great rarity; though often found only singly, such finds were frequent. It seems attached to beech, occurring not on rotten logs but on quite or fairly solid trunks, stumps, and sawn-timber. We never saw it in the middle and southern parts of the Forest, but in 1972 and 73 found isolated examples in the Park on some logs and stumps where the *Chrysopilus laetus* was taken. *Rainieria* has somewhat sluggish, skulking habits, seldom drawing attention to itself by running or flying much, yet can elude the collector's tube or pillbox with surprising agility. We also noticed the 'sidling' gait sometimes adopted, and mentioned by Donisthorpe.

## MEGAMERINIDAE

*Megamerina dolium* F. (*loxocerina* Fall.). — A single specimen of this local fly, which develops in rotten wood and was previously little-known, was captured on rhododendron foliage — the 'Xylota clump', see under *X. tarda* — on 17.vii.71 (Allen, 1973). The British records were discussed by Chandler (1975, 1977).

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## OTITIDAE

*Dorycera graminum* F. and *Otites guttata* Mg. — Solitary examples of these local and, I believe, infrequent species were swept from grass etc. under trees along the eastern margin of the Park not far from Queen Annes' Gate, on I.vi.63 and 30.vi.71 respectively.

## SCIOMYZIDAE

The following two rare species of snail-flies were taken by sweeping in the Forest at H. Hill in 1971 (not near any water) with two other more common ones.

*Pherbellia annulipes* Zett. — 8.vi (1), 17.vi. (2). A small distinctive species only recorded from Bucks., Herefs. (several localities) and Oxon. (Knutson, MS), and a fairly recent addition to the British list (Smith, 1956). Mr. Chandler subsequently found it commonly at Windsor about beech logs and at beechwood localities in Oxon., Surrey and Kent.

*Renocera fuscinervis* Zett. — 8.vi (2). One of our lesser-known Sciomyzids, only recorded in England from Herefordshire and Warwickshire, its occurrence at Windsor making a considerable extension to this very restricted range. Other British records are from Scotland (Knutson, MS).

## LONCHAEIDAE

The sample collected of these rather small shining blue-black flies, females of which are often to be seen hovering about old dead trunks, stumps etc. (at Windsor nearly always beech), was found to consist of 7 species. Three of them, *Lonchaea contigua* Coll., *L. flavidipennis* Zett. (= *limatula* Coll.), and *L. postica* Coll. (1 ♀) are worth a mention, being so far little known or recorded, whilst the others found are more or less common. One specimen of a *Lonchaea* was seen to be carrying two false-scorpions, one firmly attached by a claw to each of the fly's hind tibiae.

## DIASTATIDAE

*Diastata nebulosa* Fall. — A small but attractive species owing to its well-developed and distinctive wing markings, not known from many localities. The only example I have met with was a male swept from herbage in a narrow damp gully on the edge of the belt of woods skirting the lake at Virginia Water, 26.vii.73.

## DROSOPHILIDAE

*Steganina coleoprata* Scop. — A peculiar little dark fly with wings curved beetle-like over the body in life, of which G. S. boxed a specimen from a sappy place on an oak (H. Hill, 27.vi.71), later passed to me. Although locally frequent in beechwoods, it is not often seen because of its cryptic behaviour.

## TACHINIDAE

*Servillia lurida* F. — One found on 17.vii.72\* sitting on rather low vegetation fringing the approach to the Forest at H. Hill. A wood-land fly like its larger congener *S. ursina* Mg.

*Rondania (Graphogaster) fasciata* Mcq. — A small but conspicuous Tachinid of which I took a male by sweeping grass in a wooded part of the Park south of Union Gate, 6.vi.73. Mr. P. J. Chandler reported it from Dering Wood, Kent, and says that it is rarely recorded (Chandler, 1976:14).

*Trixa caerulescens* Mg. — A female caught settling on bare ground just inside the Forest at H. Hill, 3.vi.71. A handsome fly, much the less frequent of our two species of the genus, and the more restricted in range and time of appearance; they are thought to parasitize Scarabaeid beetle larvae. It has been found regularly at H. Hill by C. O. Hammond and P. J. Chandler.

*Estheria cristata* Mg. — Usually associated with pine in sandy localities; hosts apparently unknown. One male swept from pine near the lake at Virginia Water, 15.vii.72.

*Ernestia rudis* Fall. — Although this large species is allegedly common in woods, I include it here because we found it thus once only (3.vi.71), at H. Hill just inside the forest; it was then plentiful, but we never saw it again.

*Ernestia laevigata* Mg. (*nielseni* Villen.). — A ♀ of this local species at umbels of *Heracleum* near Badger's Brook, in a firebreak, 26.v.73.

## SCATOPHAGIDAE

*Norellia spinipes* Mg. — An interesting species only about a decade ago recognized as British, and by 1970 known from two places in Bucks. and two in Surrey (Chandler & Stubbs, 1969; Chandler, 1970), these specimens being the first known anywhere for 150 years. On 4th Sept. 1971 I swept a ♂ from bracken in the South Forest, and on 15th July 1972 a ♀ from grass under trees in the Park. Its foodplant is the common daffodil, and the likeliest source of the flies would seem to have been the gardens of one of the residences in the Park. Mr. Chandler has since found it at H. Hill, in numbers on naturalized daffodils by the Lodge, 6.iv.74 and iv.80, and swept a ♀ from bracken some distance away, 23.x.77.

\*This visit was marked by an episode which lent a spice of the exotic to the occasion and is worth relating here. Having arrived on our ground, we were informed by a keeper that three elephants were at large in the forest, into which they had smashed through from the adjoining Safari Park; and if in the course of our hunt we should chance to come upon one or more of them, would we please report at the lodge. On our pointing out a trifle dubiously that this was rather bigger game than we were used to, he assured us that they were quite harmless. Even so, when some time later we thought we heard sounds as of splintering branches and of massive bodies crashing their way through the trees in our direction, we deemed it prudent to beat a smart retreat and await developments — which to our relief did not materialize!

## MUSCIDAE

*Achanthiptera rohrelliformis* Dsv. (*inanis* Fall.). — A male swept from lakeside vegetation at Virginia Water, 26.vii.73. Larvae are common in wasps' nests but the adult is rarely seen.

*Graphomya picta* Zett. — A male from the same place, 16.viii.72. Noted as scarce by Fonseca (1968:54), and not recorded from Berks. (or Surrey).

*Phaonia vittifera* Zett. — A female bred out of rotten beech wood from H. Hill, vii.71. Recorded Berkshire localities are Wytham and Bagley Woods.

*Phaonia pratensis* Dsv. (*laeta* Fall.). — On 4.vii.71 I caught a ♀ on a sappy place on an elm near H. Hill (the tree that also yielded *Brachyopa insensilis*); I find this to be the usual habitat. Recorded from seven counties, Berks. not among them. Mr. Chandler took a ♀ on a sunlit beech log at H. Hill on 9.vi.78.

## ANTHOMYIIDAE

*Eustalomyia festiva* Zett. — This Anthomyiid is regarded as uncommon, but in fact it can be quite frequent at times in a suitable spot; I captured a ♂ and saw another, both settling on old timber (same area), 17.vi.71. A kleptoparasite of Crabronid woodwasps.

## Acknowledgements

Best thanks are due to Dr. R. Colin Welch, then of the Nature Conservancy, for arranging our permits etc., and for much help in various ways; to Mr. E. C. M. d'Assis Fonseca, for his unflinching kindness in naming or checking the many dipterous queries submitted to him; to Mr. B. Cogan, of the BMNH, for his help in identifying the *Diastata nebulosa*; and to Mr. P. J. Chandler who has been good enough to read through the typescript and suggest certain changes and additional data, etc., chiefly arising out of his and others' more recent experience of collecting in the area.

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TEBENNA BJERKANDRELLA THUNBERG (LEP.: GLYPHIPTERIGIDIAE) IN IRELAND. — This moth was taken by me in 1982 as follows: 20.viii, ♀ (det. J. D. Bradley); 21.viii (one taken indoors); 22.viii (one), 23.viii (one); 25.viii (two); 27.viii (one, flying at dusk); 1.ix (one); 4.ix (one, flying at dusk). All observations were made at this address, where the moths were repeatedly seen in the back garden at the flowers of what I have been given to understand is a species of *Achillea*, which plant has large (5-10cm.) yellow composite flowerheads which turn brown in mid-September. My thanks to Dr. Bradley for determining the moth as *Tebenna bjerkandrella*, and to Mr. E. C. Pelham-Clinton for confirming that this is the first record for Ireland of this species. — K. G. M. BOND, 24, Lisle Road, Douglas, Cork.

## FLUCTUATIONS IN ABUNDANCE OF COCCINELLIDAE

By DENIS F. OWEN\*

(Concluded from Vol. 94 page 228)

### *Coccinella 11-punctata* L.

This aphid-feeder is claimed to be a salt marsh species (Pope, 1953) but in south-east England also occurs commonly inland (Benham and Muggleton, 1970). As shown in Table 1, only three were recorded in the trap in 1972-1974 and none was seen alive in these four years. The 108 individuals trapped in 1975 were all in the first two weeks of August, indicating a sudden movement into the garden. In 1976, six overwintered individuals were trapped in April-June, there was then an influx of 53 in July, with fewer in August-October. Twelve, distributed throughout the season, were trapped in 1977, two in 1978, and none in 1979-1981, although one was seen in 1980. There was no evidence of breeding, but overwintering individuals were found among vegetation in January 1977. Everything suggests irruptive movements similar to those of *C. 7-punctata* but on a smaller scale. *C. 11-punctata* is probably not a characteristic garden ladybird in central England.

### *Thea 22-punctata* (L.)

Reputedly a mildew-feeder, this species was often seen in the garden, but never among clusters of aphids. It was trapped in five of the ten years (Table 1) and records were distributed throughout the season with no clear peaks of abundance except that in 1976, when 39 were caught, 15 were in June and 14 in July. There was no evidence of breeding or of successful overwintering.

Table 4. Monthly occurrence of *Propylea 14-punctata* in the Malaise trap, 1976-1981.

	Apr	May	Jun	Jul	Aug	Sep	Oct
1976	—	2	25	127	170	16	6
1977	—	3	14	26	26	85	6
1978	—	6	20	3	2	6	1
1979	—	1	1	1	9	137	—
1980	—	8	9	4	7	1	—
1981	—	1	3	—	8	2	—

### *Propylea 14-punctata* (L.)

Another aphid-feeder, this species, which is especially associated with deciduous woodland, occurred in the trap every year (Table 1),

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but not until 1976 did numbers begin to fluctuate conspicuously. The monthly occurrences in 1976-1981 are given in Table 4. Overwintered individuals were trapped in May and June 1976 and then many invaded the garden in July and August. In 1977 there were no marked fluctuations in numbers until September when 50 of the 85 individuals trapped occurred in the third week of the month, providing strong evidence of a movement into the garden. These events were repeated in 1979 when after a poor year for the species 137 were trapped in September, 97 of them in the first week. The years 1978, 1980 and 1981 were unexceptional in terms of fluctuations in numbers.

*P. 14-punctata* has never been found breeding in the garden but has several times been found in winter among dense vegetation. It is a common woodland species and the trap records suggest that in three of the ten years many left the woods and entered gardens. The 1976 invasion may have been a response to drought, but the September invasions of 1977 and 1979 were not obviously correlated with weather.

#### *Calvia 14-guttata* (l.)

One was trapped on 18 July 1976 and two were seen among aphids feeding on birch in July 1979. This is a woodland species and in my experience is rare in suburban gardens.

#### *Chilocorus renipustulatus* Rossi

One was trapped on 7 September 1980, and another was seen on birch on 15 September 1981. According to Pope (1953) this species is especially associated with willow, a small shrub of which is present in the garden.

#### *The garden as a habitat for ladybirds*

Most ladybirds are trapped when they take off and fly upwards or fly into land at an angle of about 45°. Most flights occur in warm and sunny weather which means that the trap measures activity as well as abundance, but because of the day-to-day variation in weather I think that the annual totals given in Table 1 and the monthly summaries in Tables 2-4 are more a reflection of relative abundance than of activity. Because of its vegetational diversity the garden is not uniformly suitable for ladybirds. The trap was (and still is) sited in a place known to be good for insects in general but not for ladybirds in particular. Other sites might have yielded more or fewer ladybirds.

The garden is undoubtedly good for ladybirds. It supports a resident population of *A. 2-punctata* and receives large influxes of *C. 7-punctata*, *C. 11-punctata* and *P. 14-punctata* which feed on the plentiful supply of aphids which, in the case of *C. 7-punctata*, enable periodic breeding to occur. The garden is also a good habitat

for those species of hoverflies (Syrphidae) whose larvae feed on aphids. Two of them, *Metasyrphus corollae* (F.) and *Episyrphus balteatus* (Degeer), have invaded the garden in much the same way and often at the same time as *C. 7-punctata* (Owen, 1981). Indeed the ecology of *E. balteatus* is remarkably similar to that of *C. 7-punctata*. Both are characteristic of open country, especially arable fields, and both undertake mass irruptive movements, particularly in warm weather. The eggs of both species are laid among aphids on herbaceous plants but in the garden there is a clear ecological separation between the two species: larvae of *E. balteatus* are nearly always found among the aphid, *Brevicoryne brassicae* (L.) feeding on cabbage, while those of *C. 7-punctata* are found among a wide variety of species of aphids but never with *B. brassicae*.

If the Malaise trap had been operated for just the years 1972-1974 or 1978-1981 it would have been concluded that *C. 11-punctata* is no more than a vagrant to the garden. Only in 1975 and 1976, the two drought years, and to a lesser extent in 1977, was it a conspicuous part of the ladybird community. As already mentioned, this species is believed to be largely coastal where it seems especially common in salt marshes. This viewpoint is questioned by Benham and Muggleton (1970) who reproduce a distribution map showing that although *C. 11-punctata* is indeed coastal in much of Britain, in the south-east it is also widespread inland. I believe that both viewpoints are correct. *C. 11-punctata* is typically coastal but in some years, 1975 and 1976 are examples, it irrupts and moves inland.

For ten years the Malaise trap has constantly monitored the ladybird community in the garden. The community was disrupted by movements into the garden in 1975 and 1976. In both years the movements were apparently initiated by drought, and it was not until 1980 that the community returned to "normal". In a sense this paper is a progress report and there is no reason why the trap should not be operated for a further ten years.

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## A RECORD OF A HUMAN-BITING DEER FLY (*LIPOPTENA CERVI* (L.)) FROM IRELAND

By J. P. O'CONNOR \*

In September 1981, I visited the Killarney area of Co. Kerry to collect insects for the National Museum of Ireland. The 16th September was a very wet day, with heavy rain and only occasional periods of sunshine. However, with the onset of evening, the weather improved. Taking full advantage of warm sunshine, I went collecting in a wooded marshy area with alder (*Alnus*) and oak (*Quercus*) near Ross Castle on the Lower Lake or Lough Leane, Killarney (V 969882). While walking through a clump of trees with long grass, I was astonished to hear insects hitting off my green PVC rain-coat. A few specimens settled on the coat where they were recognisable as hippoboscids or keds. They were observed to be abundant in this area, either flying or scurrying about on the vegetation. I collected several individuals from my coat and from some nearby low-growing plants. Further collecting revealed that the insects were plentiful in other localised areas of the wood. Both red deer (*Cervus elaphus*) and sika deer (*C. nippon*) occur in this area (Larner, *pers. comm.*).

During my first encounter with the flying specimens, one individual landed on my hand and before I could capture it, scuttled under my sleeve. I was unable to extract it and it crawled up my arm. In the ensuing excitement of collecting, I forgot about the incident. About two hours later I returned to my lodgings. While resting in my room, I experienced a sharp pain in my left arm-pit. Quickly discarding my upper clothes in case a wasp had attacked me, I was amazed to discover the hippoboscid fly crawling on the inside of my vest. The specimen, which was a male, had lost its wings. A subsequent examination of this individual proved that it had indeed fed. Its abdomen was slightly swollen compared with those of the other captured specimens (♂♂). There was a hard lump in my arm-pit, presumably the site of the bite, and it remained hard and uncomfortable for several days. Upon returning to the museum, I identified the specimens as deer flies (*Lipoptena cervi* (L.)).

There is only one previous published record of *L. cervi* from Ireland. Several specimens were reported from a red deer in the west of Ireland (O'Mahony, 1948, 1950). There are however several unpublished records. There are two specimens (♂♀) from Donegal red deer in the National Museum which were presented by D. P. Sleeman (NMI.240:1979). A further Donegal individual (winged ♂) was obtained near the foot of Kingarow West, a mountain at Glenveagh, on 22nd September 1980 by Coilín MacLochlainn (Sleeman, *pers. comm.*). There are probably nearly 1,000 head of wild red deer at Glenveagh (Fairley, 1975). A single fully winged specimen was recorded on foliage in Killarney during October 1973 (Chandler, *pers. comm.*).

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*L. cervi* occurs throughout the whole of Europe where the hosts occur with the exception of Norway. It has been reported from red deer, fallow deer, roe deer and elk. It is therefore a typical parasite of Cervidae. It has occasionally been found on cattle, horses, wild boar, badgers and man (Kadulski, 1975). The first Finnish records of *L. cervi* were made in 1960. The fly spread rapidly westward and since 1971, has become a real nuisance to people picking berries and mushrooms in the autumn (Hackman, 1977). Irish studies of *L. cervi* indicate that the red deer is the primary host in this country and that these deer are less heavily infested than in Denmark and Poland. The species was also found on a sika deer in Ireland (Sleeman, 1981). Both the red and sika deer have a very restricted distribution in Ireland (Ni Lamhna, 1979) and this factor undoubtedly explains the paucity of Irish records of *L. cervi*. In this context, perhaps one should consider it to be a privilege to have been bitten by such a scarce Irish insect.

Voucher specimens of *L. cervi* have been deposited in the National Museum of Ireland and the Ulster Museum.

### Acknowledgements

I am very grateful to D. P. Sleeman for his help which included providing literature and unpublished data, confirming my identifications and reading the MS. I also wish to thank D. Kelleher and the Office of Public Works for permission to collect insects in the Bourne Vincent Memorial Park, J. Larner for his helpful information on the deer and vegetation of the area, P. J. Chandler for allowing me to quote his record, A. B. O'Riordain and C. E. O'Riordan for their interest and encouragement.

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EUCHROMIUS OCELLEA HAWORTH IN WILTSHIRE. — A specimen of this rare pyralid moth came to m.v. light and alighted on the wall of this house on the 7th October 1982. — GODFREY SMITH, Bullen Hill Farm, Ashton Common, Trowbridge, Wiltshire.

# Obituary

## MAJOR GENERAL C. G. LIPSCOMB, C.B., D.S.O.

The sudden death of General Lipscomb on the 16th January 1982 came as a great shock to his many friends, and we have lost one of the most outstanding field collectors of his generation. Born at Margam, S. Wales on the 22nd December 1907, the elder son of the late Godfrey Lipscomb of Claverton Lodge, Bath, he was educated at Charterhouse and Sandhurst and commissioned in the Somerset Light Infantry in 1928. In 1933 he was seconded to the Nigeria Regiment, Royal West African Frontier Force and returned to England in 1939, later to command the 4th Battalion of his Regiment. He led this Battalion with great gallantry and distinction from the beaches of Normandy in June 1944, until the cessation of hostilities in N. W. Europe in May 1945, when the Battalion was in the vicinity of Bremen. For his services during the campaign he received the D.S.O. and in addition the rare award of a bar to this decoration. Under his leadership, the Battalion, during exposure to months of bitter fighting, had earned the reputation of "never having had a failure and never lost an inch of ground".

In an admirable article "An Entomologist at War" in this journal 15th May 1966, General Lipscomb outlined this campaign with particular attention to the unexpected appearance of several species of butterflies, observed even at the height of battle!

After a further year in Germany with his Battalion, he returned to England to attend the Staff College, Camberley. Appointments as Commander 19th Infantry Brigade and Commandant of the Senior Officers' School followed, and in 1957 he returned to Germany as Commander, Hanover District, B.A.O.R. At the time of his retirement he was Chief of Joint Services Liaison Organisation at Bonn. He was appointed a Companion of the Order of the Bath in 1961.

General Lipscomb began his interest in lepidoptera while at school but, it was not until he entered the Army that his attention turned to the serious collection of butterfly aberrations. This interest was stimulated by his friendship with the late S. G. Castle Russell, his friend and correspondent for many years. It was about this time that he met the Reverend J. N. Marcon who became a lifelong friend.

In 1937, he had married Ellen Diana, daughter of Arthur R. Hayward of Misterton, Crewkerne who was himself an entomologist who specialised in the micro-lepidoptera.

From now on, General Lipscomb started to build up what was to become, by the year of his death, one of the finest, self taken, collections of British butterfly aberrations in private hands. This was remarkable, as during his military career he spent many years abroad both before and after the War and up to the date of his retirement in 1961.

After his retirement he settled down in a delightful house at Crockerton near Warminster, where he and his wife had many

friends and visitors. He was now able to explore all the favourable areas within reach of his home at leisure. At the same time he became interested in conservation, so much of the Wiltshire downs having been ploughed up during hostilities and much woodland also sadly reduced as regards deciduous trees. He was a founder member of the Wiltshire Trust for Nature Conservation, and was for some years Chairman of the Field Committee, where he helped to organise and supervise the management of important reserves and sites within the county. He also acted as adviser to the Dorset Naturalists Trust.

General Lipscomb's successes in the field of collecting were many and varied. Perhaps his two most notable captures were a unique melanic male of *Lysandra bellargus* Rott., which he took at Hod Hill on 10th June 1965 and which he named ab. *totonigra* Lipscomb, and a female example of the extremely rare ab. *albo-virgata* Tutt in *Strymonidia W-album* Knoch, which he captured in his garden at Tilshead on 22nd July 1956. Both these aberrations were figured in Russwurm's *Aberrations of British Butterflies* (1978).

One of his favourite species was *Maniola jurtina* L., and during the last twenty years of his life, he captured an unsurpassed series of varieties of this species. These included several albinos, and also some remarkable underside banded forms normally referred to as ab. *postaurolancea* Leeds. With his eye for detail and from examination of his own superb series and those of others, he came to the conclusion that two distinct forms were included under ab. *postaurolancea*. He therefore divided his series, and those not conforming to the original description, he provided with a new name — ab. *postmultifidus* Lipscomb. This change is well explained in his article in this journal 1st September 1980, and is accompanied by an excellent photograph showing a short series of each form.

Space will not allow full comment on many of the fine aberrations which form part of the collection. It is so strong in many species, for example in *Aglais urticae* L., the General took, in the wild, over a dozen extreme melanics, in itself a unique achievement. He was one of the favoured persons to witness the sudden upsurge of *Argynnis paphia* L. which occurred in Wiltshire during the very warm summer of 1976. He described this extraordinary phenomenon in another excellent article in this journal 15th January 1978. Of the several extreme forms which fell to his net, the most extreme, a female ab. *nigricans* Cosmovici taken 7th July 1976, was figured by Russwurm (*op. cit.* pl. 27, fig. 2).

General Lipscomb was an accomplished breeder and apart from regular yearly breeding of *Aglais urticae* L. and *Anthocharis cardamines* L., he also explored the genetics of both ab. *arete* Muller and ab. *lanceolata* Shipp. in *Aphantopus hyperantus* L. In this, he was rewarded in 1976 by obtaining a series of the very beautiful variety ab. *arete* + ab. *lanceolata* in both sexes. Again this form was illustrated by Russwurm (*op. cit.* pl. 35, figs. 5 and 6).

General Lipscomb had many other outdoor interests — his garden, fishing in the Wiltshire chalk streams, and in the winter, shooting with his friends. He was treasurer of the local Horti-

cultural Society and a member of the Longbridge and Crockerton Parochial Church Council. He was also for many years on the Council of the Royal Bath and West Show. A gifted athlete, as a young officer he represented the Army as a quarter miler and was a member of the Joint Services Athletic Team which won the mile relay in the 1932 A.A.A. Championships.

He contributed to this journal a great many articles apart from those already mentioned, also copious notes on points of entomological interest over a period of years. These all make compulsive reading whether covering trips to Yugoslavia, N. Italy, Corfu, N. Africa, S. Ireland or shorter trips within the United Kingdom. On many of these trips he was accompanied by his wife.

He was a most generous host, a charming companion with a great sense of humour, and had all the qualities which make up a first-class field observer. In addition, he had a genuine and encouraging appreciation of other collector's more modest efforts, particularly those of the younger generation.

It is fitting that his outstanding collection has passed to the British Museum (Natural History) where it will form part of the National Collection.

To his wife, his two sons and his six grandchildren we offer profound sympathy in their great loss.

R. M. C. and H. G. P.

## Notes and Observations

THE CLOUDED YELLOW: *COLIAS CROCEUS* GEOFF. NEAR KILLARNEY IN 1982. — My brother, T. C. Sankey-Barker, writes (in litt.): "On Oct. 8th I had a wonderful view of a single Clouded Yellow. I was fishing the river Laune, 2 miles upstream from Killorglin — a burst of low sunshine lit it up against the dark green background of a grassy bank. There was a moderate northerly wind and the butterfly seemed to have just crossed the river from North to South. It then flew away southwards in a rather dejected manner. There were no other butterflies out that day." And very few any other day, my brother added, the weather in those parts being all too true to form, and since no one in S. W. Ireland would ever trouble to grow clover, let alone lucerne, as a crop, small wonder the creature seemed dejected. — P. B. SANKEY-BARKER, Plas Langattock, Crickhowell, Powys NP8 1PA.

LEPIDOPTERA IN GUERNSEY, CHANNEL ISLANDS IN 1982. — This has been the Year of the Hummingbird Hawkmoth (*Macroglossum stellatarum* L.) in Guernsey. Many non-entomologists have noted them and I have not seen such numbers in the past six years. First arrivals were in late June, larvae were found in August and the last adults were seen in mid-October. The moth was particularly frequent on Herm on 3 July.

There has been a steady trickle of other migrants throughout the summer. A single *Heliothis peltigera* D. & S. was taken here on 24 June, and then several *Spodoptera exigua* Hbn. here until September with the first on 8 July. Of migrant butterflies, *Colias*

*croceus* Geoff. appeared in small numbers in mid August and the first *Nymphalis polychloros* L. recorded since 1947 was seen at Vale Pond on 23 April.

Guernsey's one special resident butterfly, *Melitaea cinxia* L. continues to thrive on cliffs both here and on Sark and Alderney. On Sark in July I watched the large bright form of *Argynnis aglaia* L. in flight: there are only two sight records of this butterfly from Guernsey. I was also pleased to take an adult *Sitochroa palealis* D. & S. in Sark on 10 July which was feeding by day on *Daucus*, a new Island record. *Eupithecia phoeniciata* Ramb., which is frequent here in my garden, has also spread to Sark.

Our list of resident moths has been greatly increased by a visit from David Agassiz, who has added some 40 new species. He bred *Nothris congressariella* Bruand from *Scrophularia* on Herm, finding the larvae in early August. He also took eight *Agrotis crassa* Hbn. at light at Vale Pond on 8 July, thus confirming an old Island record. The species is resident in Jersey. I was surprised to take a worn *Agrotis nemoralis* Scop. in Guernsey in July. — T. N. D. PEET, La Chene, Forest, Guernsey.

A FURTHER NOTE ON COLOUR CHANGE IN THE FORESTERS. — Following my note on colour change in the genus *Adscita* in *Ent. Rec.*, 94: 201, Mr. S. M. Jackson tells me (*in litt.*) that he has observed the same colour change when these insects are killed with ammonia, the colour change from green to maroon being reversible on removal from the killing bottle. I also came across a reference to this phenomenon myself in an obscure local list, *The Butterflies and Moths of Harrow* by J. L. Bonhote and N. C. Rothschild (1895), in which it is stated “. . . the moths are affected by damp which causes them to turn red . . .” The antennal differentiation is very clearly illustrated in the frontispiece of this work. — MARK HADLEY, 2 Thompson Street, New Bradwell, near Wolverton, Bucks.

COLOUR CHANGE IN THE GENUS *ADSCITA*. — Referring to Mr. M. Hadley's note (*Ent. Rec.* 94: 201), surely the change in colour from green to “a deep maroon” at low temperatures is due not just to the drop in temperature but to the condensation of water vapour resulting from the drop in temperature. I have noticed the same phenomenon when relaxing metallic green scutellerid Heteroptera by means of steam. Though I have no observation evidence either for or against, I suspect that this colour change does not take place in nature as activity in a mobile moth would, in the gradual cooling of the atmosphere in the evening, serve to keep the temperature just above the dew point. — in contrast to the static vegetation. — P. J. L. ROCHE, Av. Verge de Canolich 97, Sant Julià de Lòria, Andorra.

RED DATA BOOK - INSECTS. — Many countries have produced Red Data Books listing the fauna and flora under threat from environmental changes. In Britain the first of these for the Vascular Plants was published in 1977. Since then similar Red Data Books covering other groups have been in preparation.

The Insect Red Data Book is being prepared by a small committee sponsored by the JCCBI and chaired by Dr. M. G. Morris. The editor

is Mr. P. T. Harding and all correspondence should be addressed to him at: Institute of Terrestrial Ecology, Monks Wood Experimental Station, Abbots Ripton, Huntingdon, Cambs. PE17 2LS. All groups have been considered, but only some Orders justified detailed treatment. These are Lepidoptera, Odonata, Orthoptera, Trichoptera, Hymenoptera, Coleoptera and Diptera.

This Red Data Book will be invaluable in drawing the attention of entomologists, conservation bodies, landowners and planning authorities to the problems of insect conservation. — J. HEATH, Secretary, Insect Red Data Book Committee.

RED ADMIRALS FLYING AT LOW TEMPERATURES IN 1982. — I should like to draw attention to three recent records of the Red Admiral: *Vanessa atalanta* L., flying in low temperatures. On 7 October, the butterfly was seen flying freely and fast at 7 am. when the temperature was only 40°F.; another on 2 November at 9 am., again flying well when the temperature was 42°F.; and finally, one at Trowbridge on 4 November, seen at 4.30 pm. when twilight at a temperature of 45°F. When one considers that in July and August this butterfly would never fly in such low temperatures, one wonders how it is they can be so quick and lively when it is so cold. — GODFREY SMITH, Bullen Hill Farm, Ashton Common, Trowbridge, Wilts.

AN ODDLY-NAMED MOTH. — Dr. A. J. Showler's suggestion (*antea*: 124) that *aprilina* might have been originally written or printed in error for the less easily understood *aphilina* is certainly ingenious, but I do not find it convincing; for one thing, 'loveless' is a singularly unfitting epithet for such an attractive moth. Barrett (*Brit. Lep.* 4: 320) remarks that "its name appears to be somewhat inappropriate, unless it has been given because the moth *does not* appear in April." (!) I can only suppose that some confusion of source information had occurred: Linnaeus may have been describing a number of species at the time and chosen the name under a genuine misapprehension. In the long history of entomology accidental transpositions, etc., of that kind are bound to have happened occasionally, and may account for some of the more glaring misnomers regarding foodplant and the like.

Why Merveille *du Jour*? Dr. Showler is right, of course; it is inapt, taken literally. Merveille de la Nuit would have been more fitting. However, probably the name was originally a self-contained French expression applied to a contemporary marvel as opposed to one of earlier times; though I confess this is sheer guesswork. — A. A. ALLEN. [It would be interesting to investigate this further since R. D. Macleod, 1959, *Key to the Names of British Butterflies and Moths*, p.29, has: "*G. aprilina*, Merveille du Jour; from month of moth's appearance in type locality, not in Britain" — J. M. C.-H.]

HIPPOTION CELERIO L.: SILVER-STRIPED HAWKMOTH IN SCOTLAND. — A lovely specimen of this rare hawkmoth was found on the ground underneath a window on 7th November 1982, by Mr. Sinclair, at Linnwood Lodge, Hawick, Roxburghshire. The insect was set and has been retained by Mr. Sinclair's son. — A. BUCKHAM, 9, Gorse Lane, Galashield, Selkirkshire.

THE DEATH'S-HEAD HAWKMOTH: *ACHERONTIA ATROPOS* L. IN NORTHAMPTONSHIRE. — On Monday, 6th September 1982, one of the pupils at Deanshanger Primary School arrived with a large box containing, he said, a caterpillar. Expecting to find some common species as is usual, I casually lifted the familiar lettuce leaves to reveal, to my amazement, a fully grown *atropos* larva. This had been found by himself and other pupils on a tarmac footpath in a built up area by the school. After school I was taken to the spot, and soon found nearby a few rows of potatoes in an adjoining garden. There, on hands and knees, I was delighted to find sitting on a withered stem another fully grown *atropos* larva. Later that week, I searched most potato plots in the village, and on one allotment found evidence from droppings and leaf devastation that further *atropos* larvae had been present, but had wandered off to pupate.

In due course the two larvae produced pupae, which were kept at a temperature of 70° F. on damp peat in a large flower pot immersed in water. A perfect female with a wingspan of 5 inches emerged at noon on 20th October. Unfortunately, however, the other failed to emerge. — D. C. G. BROWN, Jacksons Farmhouse, 25 Charlecote, Nr. Warwick.

REVERSE MIGRATION BY RED ADMIRALS: *VANESSA ATALANTA* L. — On October 3rd 1982, a particularly still and sunny day, I was aboard a fishing boat in the Solent about a quarter of a mile from Totland Bay. At 9.45 am. I observed a Red Admiral flying over the boat towards the Isle of Wight. At 10.15 am. we were anchored about a mile off Tennyson Down when I again noticed a Red Admiral fly over the boat and out to sea, steering a S-SSW course. The time lapse and position would have been right to allow it to have passed over the Island. At 11 am. I observed another Red Admiral following the same course.

My sightings coincided with observations made the same morning by my friend Ian Farwell at Keyhaven Marshes, where he had seen upwards of 50 *Vanessa atalanta* flying out to sea. — A. HARMER, 'Covertside', Sway Road, Lymington, Hants SO48NN.

AGRIUS CONVULVULI L. AND OTHER MIGRANTS IN S. WEST-MORLAND IN 1982. It was something of a surprise to find a pair of *A. convolvuli* about six feet apart, on my garage wall near the m.v. trap as I was about to switch off the light at 3.30 a.m. B.S.T. on the night of August 31 and September 1, and another (a male) same time and place, September 14/15. All three were in immaculate condition. This is only the second time I have had this species here, in 14 years of continual light trapping. It has only been a moderate year here for migrants, but it was interesting to note a male *Rhodometra sacraria* L. on September 9/10 in the m.v. trap; on September 11 at 3.30 a.m. one was being despatched by a spider, another alighted on my hand and escaped, while a third was inside the trap, all males. This is the third occasion that *R. sacraria* has appeared here. As for the more common migrants, these were below average in numbers this year, though *Peridroma saucia* Hbn. (12) was well above average. — J. BRIGGS, 5 Deepdale Close, Slackhead, Beetham, Cumbria. LA7 7AY.

THE INHERITANCE OF TWO REDDISH FORMS OF THE ANGLE-SHADES: *PHLOGOPHORA METICULOSA* L. — During an extensive series of breeding experiments designed to investigate larval variation in *Phlogophora meticulosa* Linnaeus (The Angleshades moth) four broods (out of a total of over a thousand) produced progeny some of which differed from the normal imaginal phenotype. These abnormal moths were of two types. In some the central triangle was rich-brown tinged with fulvous, the whole wing has a reddish tinge, and even the normal green areas are heavily suffused with red scales. The dorsal tufts are also fulvous in colour, instead of green. This form is referable to as ab. *roseobrunnea* Warren. The other abnormal moths were similar to *roseobrunnea*, but had no green or olive markings at all.\* This form seems to be ab. *ignicula* Dannehl.

The abnormal forms arose in two distinct stocks. One stock, which gave rise to three of the broods in question (MSG98, MSG104 and MSG106), had been inbred for four generations, and had originated from a wild caught female taken at Picket Hill near Ringwood in Hampshire in 1979. The fourth brood (MSY159) came from a stock which had been inbred for six generations and originated from larvae taken at Englefield Green, Surrey.

To determine the mode of inheritance of these red forms, a series of specific crosses were carried out. The results of these broods are given in table 1.

If the two red forms are considered together as one class, the results indicate that red is controlled by the recessive alleles of two unlinked major genes. (There was no indication of sex linkage.) The four broods in which ab. *roseobrunnea* and ab. *ignicula* first arose all approximate to a 15:1 ratio of typical:red morphs. Using progeny from these or subsequent broods, crosses between red forms, whether ab. *roseobrunnea* or ab. *ignicula* produce only red moths. Crosses between a typical and a red morph may give all typical progeny (as in brood R6) or a ratio approximating to 3:1 of typical to red (e.g. brood R5) or approximately equal numbers of typical and red imagines (e.g. brood R4). So it appears that the red forms collectively are produced only when the recessive alleles of both gene loci are homozygous.

The difference between ab. *roseobrunnea* and ab. *ignicula* does not seem to be based on a simple genetic mechanism. In almost all broods containing red phenotypes, both forms occurred, ab. *roseobrunnea* always being the more common. It may be that the differences are the product of some environmental factor, although as all the larvae were treated in the same way, this seems unlikely. Alternatively, there may be a number of modifier genes which slightly alter the expression of the two major genes so that the variation in the red forms is controlled by a polygenic system. This seems the more likely when the proportion of ab. *ignicula* amongst the red forms from different types of cross are considered. For example, amongst the progeny from ab. *ignicula* x ab. *ignicula*, 18.87% are of the *ignicula* form. The figure drops to 16.89% in *ignicula* x *roseobrunnea* crosses, and to 6.28% in *roseobrunnea* x *roseobrunnea* crosses. This indicates that the difference between

Table 1. Results of broods reared to investigate the inheritance of the forms *ab. roseobrunnea* and *ab. ignicula* of *Phlogophora meticulosa*

Brood number	Phenotype of male parent	Phenotype of female parent	Typical	Progeny		Total
				<i>ab. roseobrunnea</i>	<i>ab. ignicula</i>	
MSG98	typical	typical	88	4	1	93
MSG104	typical	typical	56	3	1	60
MSG106	typical	typical	141	7	0	148
MSY159	typical	typical	93	4	2	99
R1	ign. ex MSG98	ign. ex MSG104	0	38	12	50
R2	ros. ex MSG98	ros. ex MSG98	0	89	8	97
R3	ros. ex MSG106	ros. ex MSY159	0	163	10	173
R4	ros. ex MSG104	typ. ex MSG106	39	29	3	71
R5	ros. ex MSG106	typ. ex MSY159	76	18	3	97
R6	typ. ex MSG104	ros. ex MSY159	194	0	0	194
R7	typ. ex MSG104	typ. ex MSG104	99	0	0	99
R8	typ. ex MSY159	typ. ex MSG104	158	0	0	158
R9	typ. ex MSY159	typ. ex MSG104	129	30	3	162
R10	ign. ex R1	ign. ex R1	0	76	33	109
R11	ign. ex R2	ign. ex R3	0	149	17	166
R12	ign. ex R3	ign. ex R3	0	38	12	50
R13	ign. ex R3	ign. ex R3	0	86	16	92
R14	ign. ex R3	ign. ex R3	0	211	29	240
R15	ros. ex R3	ign. ex R3	0	46	14	60
R16	ros. ex R2	ros. ex R2	0	181	11	192
R17	ros. ex R2	ign. ex R3	0	31	12	43
R18	ign. ex R3	ros. ex R2	0	19	7	26
R19	typ. ex R4	ign. ex R1	93	72	6	171
R20	typ. ex R4	ign. ex R1	71	60	8	139

typ. = typical. ros. = roseobrunnea. ign. = ignicula.

the two forms is, at least in part, genetically based. — M. E. N. MAJERUS (Dr.), Department of Genetics, Downing Street, Cambridge.

FOOD FADS OF LEPIDOPTEROUS LARVAE. — Dr. D. F. Owen's note (*Ent. Rec.* 94: 205) suggesting that the restricted distribution of *Fixsenia pruni* (L.) in England is connected with intraspecific biochemical variation of *Prunus spinosa* prompts me to mention the case of *Thetidea smaragdaria* (F.). The present precarious status of this species in England is ascribed to the equally precarious status of *Artemisia maritima* in Essex, though this is not the only county in which the plant grows.

*T. smaragdaria* is far and away the commonest "Emerald" in the neighbourhood of Sant Julià de Lòria, but at an altitude of 900-1,000m., salt marshes are not a prominent feature of the Andorra landscape! Forster and Wohlfart (1981, *Die Schmetterlinge mitteleuropas*, Band V) give the foodplants of this geometrid as "*Achillea millefolium* L., aber auch an denen van *Artemisia*-Arten, *Senecio vulgaris* L., *Tanacetum vulgare* L. und anderen". Prout raised the British population of *T. smaragdaria* to subspecific rank with the name *maritima* (Kloet and Hincks, 1972, *A Check List of British Insects*, part 2: Lepidoptera), a step not followed by Leraut (1980, *Liste Systématique et Synonymique des Lépidoptères de France, Belgique et Corse*). If one accepts that a subspecies is a sort of evolutionary half-way stage in the differentiation of a species, then this question of foodplant preference would seem to suggest that a biochemical "sub-subspecies" precedes the development of a morphologically distinguishable subspecies. — P. J. L. ROCHE, Av. Verge de Canolich 97, Sant Julià de Lòria, Andorra.

## Current Literature

**Butterflies and Moths in Britain and Europe** by David Carter. 192pp. numerous colour illustrations. A4 format. 1982. Pan books (paperback) £6.50 and Heinemann (boards) £12.50.

This superbly illustrated book is one of a series of natural history photographic guides published by Pan. A welcome feature is the illustration of many species twice — once as a formal set specimen and again in a natural pose. The obligatory introduction provides brief coverage of structure, life cycle, classification, behaviour, habitats, enemies, defence, pests, collecting, conservation and a bibliography. Although only 22 pages in length this introduction is readable, well balanced and informative.

The text of the remainder of the book comprises a short paragraph on each of the approximately 300 species selected for consideration. There are one or two errors in the text — for example the winged and wingless females of *Lycia hirtaria* and *Apocheima pilosaria* are confused on p.126, but on the whole the text is in keeping with the style of the book which is copiously illustrated with excellent colour photographs. The coverage shows strong bias towards the butterflies, which occupy about half the book, the remainder being macro-moths and two pages of micros. The author has sensibly selected the more common micros for illustration.

Perhaps the most serious criticism is the incorrect labelling of some of the plates, which could prove confusing if they were used for identification. As an illustration of some of the more obvious mistakes, on p.45, the photographs of *Gonepteryx rhamni* and *G. cleopatra* are transposed; p. 120, the set specimens of Winter moth are the Northern Winter, *O. fagata* and on the opposite page the Winter moth at rest is the November moth, *E. dilutata*; p.125, *Selenia dentaria* is *tetralunaria*, and *tetralunaria* is *lunularia*; p.159, *Naenia typica* is *Tholera decimalis*; p. 165, *Xylena exoleta* (at rest) is *X. vetusta*; p. 166, *Acronicta megacephala* (at rest) is *A. rumicis* and on p. 175 both the Golden Y moths illustrated are *A. jota*. There are sufficient errors to warrant the issue of an errata slip.

Despite these criticisms the book is reasonably priced and the quality of the illustrations makes it very good value. Paul Sokoloff.

**A Complete Guide to British Butterflies** by Margaret Brooks and Charles Knight. Jonathan Cape, 1982. £10.95.

So many books on British Butterflies have been published over the last fifteen years, many of them contributing little or no fresh information to the subject, that yet another might seem superfluous. Where this book is unique, however, is in the high quality colour photography of early stages of all the native butterflies. No other book has photographed life histories in such detail and the standard realised is a tribute to the skill and patience of Margaret Brooks.

The photographs of the living butterflies are, in general, equally fine. Some species such as *G. rhamni*, the two 'Heaths' and several of the hairstreaks rarely, if ever, in life display the upperside of their wings, and in these instances set specimens are included. These are very disappointing: many of the specimens are in unnecessarily poor condition – faded, chipped, ill-set and missing the occasional antenna; also these dead butterflies have been photographed against 'natural' backgrounds and this, in my opinion, is particularly disharmonious.

The text commences with short preliminary chapters on butterfly biology, breeding, collecting and photography, followed by the major section where the life-histories are thoroughly described as well as illustrated, although information on habitat and distribution is rather scanty. The book is completed by a short illustrated account of the rare migrants, followed by a glossary and a complete index of English and scientific names.

There are few errors in the text, but I think some of the plates may be mislabelled in a minor way. For example the *Hamearis lucina* designated a female on page 84 looks very much like a male to me, and I believe a similar mistake may have been made with *Aricia agestis* on page 90.

In general the book has been well produced, printed on good paper and bound in hard covers with a dustjacket portraying a living imago of *Nymphalis polychloros*.

The fine colour photographs make this guide well worth its price £10.95. and despite the slightly disappointing text, I suspect few entomologists interested in British butterflies will want to do without it.

C. J. Luckens.

**The Biology of the Coleoptera** by **Dr. R. A. Crowson**. 802 + xi pp. Academic Press Inc. (London) Ltd., 1981. £58.00.

To deal with the total biology of the world's beetle fauna is a monumental task and we are indeed fortunate in having such a thorough and capable Coleopterist as Roy Crowson to take it on. The end result is an admirable book; it will surely remain the definitive text for a great many years.

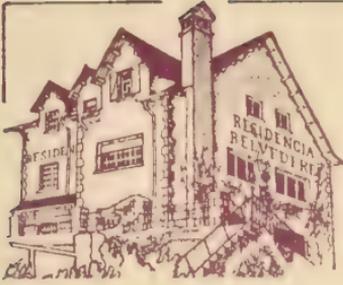
The work is divided into twenty-one chapters, an Introduction outlining the history of the study of beetles and problems of their classification plus notes on the preservation and study of adult and immature beetles. The next eleven chapters cover all aspects of physiology, anatomy, internal and external structure and organisation plus behaviour, development and genetics. The treatment is, as one has come to expect from Crowson, very comprehensive, though the text of the present book must be regarded as an in-depth summary of available knowledge.

The six following chapters deal with beetles in their environment; chapter thirteen, Water Beetles, covers all beetles that live under water, not just the Hydradephaga as is so often the case. Chapter fourteen, Special Habitats; fifteen, Predation and Defence; Symbiotic and Parasitic Relations; An Ecological Triangle: Beetles, Fungi and Trees; and chapter eighteen, Herbivorous Beetles. Chapter nineteen covers Geographical Distribution and Conservation: Beetles as Ecological Indicators, and twenty Evolutionary History of Beetles. The final chapter, Epilogue gives food for thought and an overall summary, it is followed by a revised Classification (differing in points from Crowson's earlier schemes). Each Superfamily is given a letter, and each family a number. Thus, the Carabidae are the fourth family in Superfamily 'B', when the family or any Carabid genus is mentioned in the text it is suffixed by (B4). This is a useful and novel scheme enabling one to place unfamiliar genera or families after a brief period of use (for example, Eulichadidae may mean very little to the British Coleopterist, but Eulichadidae (K1), shows the reader it is the first Family in the Dryopidea).

The 319 figures and nine composite plates (giving a total of forty-five individual photographs) and fifteen tables enhance the book; the plates and figures, when mentioned in the text are followed by their page number, a simple consideration to avoid a lot of thumbing through pages. The extensive Bibliography is most useful and its 47 pages will lead the reader to a vast number of sources. To finish the book there is a Taxonomic and separate Subject index. The quality of printing is good and the paper excellent, the whole being strongly bound in hard covers. Although the price might seem a little high, the value of the information contained therein, plus the high standard of production make it a very worthwhile purchase, one that will be a constant source of information not only for the Coleopterist, but general zoologist, ecologist and physiologist.

A truly valuable book that is strongly recommended.

J.C.



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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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## TO OUR CONTRIBUTORS

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A MODERN REVIEW OF THE DEMISE OF  
*APORIA CRATAEGI* L.:  
THE BLACK-VEINED WHITE

By COLIN PRATT\*

"Establishing the facts about extinct species has considerable detective interest, but at the end it is usually probability and not certainty which results" (Bretherton, 1951). This paper is no exception to the general rule.

Over the years much has been written about the disappearance of the black-veined white butterfly but little positive evidence has been offered in support of the various causal theories. If a more precise reason for the decline of the insect can be determined, to quote Heath (1974), "the past may provide clues to the solution of future management problems arising in the conservation of endangered species".

*Aporia crataegi* L. was at one time a locally common and noticeable insect in many counties of southern Britain but was always subject to large fluctuations in numbers. The butterfly was sometimes so scarce as to be thought locally (and nationally) extinct yet it often survived to flourish again, to the extent that it could be seen "in cloudy weather settled almost by hundreds on the blossoms of the great moon-daisy" (Newman, 1871) and a collector was "frequently able to capture five or six specimens at one stroke of the net" (Goss, 1887). In Europe the species is still regarded as an orchard pest, but it never had such a reputation in this country.

The adult insect usually flew in late June and part of July, having a relatively short flight period of less than a month; emergence time was considerably affected by prevailing weather, May and late August being the extremes recorded. The usual foodplants were blackthorn (*Prunus spinosa*) and hawthorn (*Crataegus* spp.), but apple (*Malus* spp.), plum (*Prunus domestica*) or cherry (*Prunus avium*) were sometimes selected. The gregarious larvae would usually hatch during August and in late September begin to construct silken hibernacula within which individual chambers were prepared. Hibernation began within this communal web in the second larval instar during October. Larvae apparently fed at restricted times as, according to Newman (*loc. cit.*) and others, the caterpillars remain "quiet during the sunshiny hours, but issue forth morning and evening to feed". After quickly feeding up over the spring months the insect would pupate usually during May.

The first published hint that *A. crataegi* was in difficulties, in this instance in Sussex and Hampshire, is contained in an address given to the Entomological Society of London by J. Jenner Weir (1884). A year or two later, C. W. Dale (1887b) sounded a more national alarm, asking "Is this butterfly still found in the south-eastern counties of England?" This note led to considerable correspondence on the subject in the entomological magazines of the

\* "Oleander", 5 View Road, Peacehaven, Newhaven, Sussex.

day, these writings being mainly concerned with retrospective records, speculation on exactly why the black-veined white had (almost) disappeared, and its migratory instincts, the cause for the species being an immigrant being championed by Tutt (1887). These notes were admirably summarised by P. B. M. Allan (1948) and later R. F. Bretherton (1951) covered the same subject, adding new information. And there the subject has largely rested save for the odd dubious record, the publication of the interesting last Worcestershire sighting (Green, 1982) and the meticulously detailed enumeration of the important Kent records by Chalmers-Hunt (1960).

## CLIMATE

Uvarov (1931) wrote that unusually high insect numbers, such as those sometimes enjoyed by *A. crataegi*, "may well be entirely due to the weather acting on the generation involved in the outbreak", suggesting that the effects of weather in the annual term could be large and dominant. However, many different reasons for the extinction of the black-veined white have been proposed, most of which were considered by Allan (*loc. cit.*); the possible causes have included parasites, micro-organisms, fungal disease, chemicals and insectivorous birds. Allan dismissed them all and decided that "mild wet winters, let alone a succession of such winters, must have reduced the populations of the insect in every county". The first person to suggest that climate might lie at the source of the disappearance was Goss (*loc. cit.*), who writes that its demise may have been due to "a succession of wet ungenial summers and mild winters". In more modern times, Dennis (1977) thought that the insect died out because of a change from a continental regime to an oceanic one, basically agreeing with Goss and Allan, and Heath (*loc. cit.*) also concurred that at least the initial decline might have been due to climatic change. Certainly there was a unique succession of mild winters from 1865 to 1869 inclusive, and a few others soon followed, but *A. crataegi* had suffered a massive decline decades before that time, at any rate in Sussex (Pratt, 1981).

It has been said that the insect began its decline about 1860 or even later, but this seems a late date in the face of some historical evidence. Lewin (1795) thought the butterfly "not very common"; the last Dorset sighting was listed by Newman (*loc.cit.*) as about 1815; Rennie (1829) noted that the insect "seems to have disappeared from the vicinity of London for several years"; and at the same time Curtis (1829) wrote that the butterfly was becoming "annually more scarce". By 1840, eight of the ten known Sussex colonies had vanished. Conditions were more advantageous just before and after the middle of the last century, although odd colonies continued to die out until an accelerated decline and disastrous period for the insect commenced after 1870. Those situated in north-east Kent excluded, all remaining national colonies were thought to have died out over the following quarter of a century, although evidence continues to come to light suggesting

that the insect hung on into the 20th century in Sussex, and in Worcestershire until 1923. In Kent the butterfly held on, unless it had been successfully re-introduced, until at least 1922, or perhaps a few years later, when it finally became extinct as a breeding species in this country.

Why did *A. crataegi* retreat particularly to north-east Kent and then almost exclusively survive there for at least a further 29 years? Ford (1945) pointed out that the butterfly was "at the extreme limit of its distribution" in this country and that its "true home was always in Kent"; this suggests that any climatic advantage enjoyed preferentially by north-east Kent may lie at the source of this extinction. Unfortunately, the only climatological atlas published by the Meteorological Office (1952) is that containing maps drawn from records obtained during the first half of this century. Within this period, when compared to almost all other colonial sites, north-east Kent received a higher amount of snow with less lying, fewer days of rain over the year, and about 5% more sunshine during the month of September, but not during other months. There was no evidence to link the various monthly, annual and other charts for atmospheric pressure, wind, temperature, rainfall, thunder, humidity, and fog, with the insect's pattern of decline.

### *Snow*

Increased snow-cover over the preceding winter is thought by many to be advantageous to the numbers of lepidoptera; however, there is no positive correlation between the data on London snowfall from 1660 to 1960, published by Manley (1969), and the varying fortunes of the black-veined white. Indeed, there is a slight negative relationship.

### *Sunshine*

The accurate sunshine recorder was invented by Stokes only in 1879, so meaningful records are not available for much of the critical period. The earliest figures and maps for sunshine were published by the Meteorological Office (1915), Brodie (1916), Hancock (1935) and Glasspoole & Hancock (1936); the statistics are for the years 1881 to 1910 only and are expressed as an average for this period. The isopleths shown throw no light on the insect's geographical decline. Nevertheless, sunshine correlates conversely with cloud-cover which, albeit very loosely, correlates with rainfall.

### *Rainfall*

In the national rainfall figures published by Nicholas & Glasspoole (1932) and those published by the Central Statistical Office (1940;1950;1960) for every month, season and year from 1727 to 1950, only one set of readings substantially correlates with the fluctuations of *A. crataegi*, i.e. those for September. The first of the following two tables gives the years and localities of reported abundance, together with a measure of the rainfall in September

T A B L E A  
 SEPTEMBER RAINFALL FOR YEARS BEFORE ONE  
 IN WHICH A. CRATAEGI WAS COMMON

Locality	Year	Previous Seasons				
		1	2	3	4	5
Kingston (Surrey); Wimbledon (London).	1810	***	**	**	*	-
Muswell Hill (London).	1811	--	***	**	**	*
Hampshire.	1826	*	***	*	--	***
Monks Wood (Huntingdon); Whittlesey Mere (Cambridgeshire).	1833	--	**	***	***	**
Keymer (Sussex).	1838	-	***	***	-	-
Wye (Kent).	1844	--	**	***	**	***
Torquay (Devon) : circa 1854 Chattenden Roughs, Four Elms Hill, Lodge Hill (Kent).	1854	*	***	--	-	***
Ramsgate, Strood, Rochester, near Canterbury, Tenterden (Kent); New Forest (Hampshire); Kidwelly (Wales).	1856	--	--	*	***	--
Forest of Dean (Gloucester); Strood (Kent); Somerset; Northamptonshire; Huntingdonshire.	1857	**	--	--	*	***
Isle of Thanet (Kent) : circa 1858 Chattenden Roughs, Strood, Ashford, Herne Bay (Kent); Cardiff, larvae Penarth (Wales).	1858	**	**	--	--	*
New Forest (Hampshire); Rochester (Kent).	1866	--	**	***	*	**
Tintern (Wales).	1867	***	--	**	***	*
Chatham (Kent); Glamorganshire.	1868	-	***	--	**	***
Glamorganshire.	1869	**	-	***	--	**
New Forest (Hampshire); Forest of Dean (Gloucester).	1870	***	**	-	***	--
Dover, Sittingbourne (Kent).	1887	*	***	*	***	*
North-east Kent.	1893	**	*	--	-	--
North-east Kent.	1896	--	--	-	**	*
North-east Kent, Ash-next-Sandwich (Kent).	1902	-	--	**	--	**
North-east Kent.	1903	--	-	--	**	--
North-east Kent, Preston (Kent).	1904	***	--	-	--	**
North-east Kent, Preston, Isle of Thanet (Kent).	1905	-	***	--	-	--
Eastry (Kent).	1906	-	-	***	--	-
Preston, Richborough, Ash (Kent).	1907	--	-	-	***	--
East Stourmouth (Kent).	1908	--	--	-	-	***
Sturry (Kent).	1918	-	-	--	--	*

TABLE B

## SEPTEMBER RAINFALL FOR YEARS SURROUNDING LAST LOCAL RECORDS

Locality	Year	Previous Seasons					Year	Subsequent Seasons				
		5	4	3	2	1		1	2	3	4	5
Glanvilles Wootton (Dorset).	1815	--	-	-	-	--	*	**	--	***	.	.
Berkshire.	1831	***	**	**	***	***	**	--	-	-	***	***
Challey (Sussex).	1834	***	***	**	--	-	-	***	***	-	.	***
Newick (Sussex).	1835	***	**	--	-	-	***	***	-	.	***	**
Lindfield (Sussex).	1836	**	--	-	-	***	***	-	.	***	**	***
Keymer (Sussex).	1839	-	***	***	-	.	***	**	***	**	--	*
Torquay (Devon).	1854	***	-	--	***	*	--	--	**	**	.	***
Wye, Brompton (Kent).	1859	--	--	**	**	.	***	.	**	.	***	**
Leominster (Herefordshire).	1860	--	**	**	.	***	.	**	.	***	**	--
Dover (Kent).	1863	.	***	.	**	.	***	**	--	***	-	**
Glamorganshire.	1869	**	--	***	-	**	***	-	***	***	.	***
Coleford (Gloucester); near Brighton (Sussex).	c. 1870	--	***	-	**	***	-	***	***	.	***	**
Worcester	1871	***	-	**	***	-	***	***	.	***	**	***
Hertfordshire; Rochester/Strood (Kent).	1872	-	**	**	-	***	***	.	***	**	***	.
Tintern (Wales).	1877	***	.	***	**	***	.	.	**	***	.	.
Forest of Dean (Gloucester); Stockton Forest (Yorkshire).	1879	***	**	***	.	.	**	***	.	.	***	.
New Forest (Hampshire); Festiniog (Wales).	1883	.	**	**	.	.	***	.	***	.	**	--
Chattenden (Kent).	1884	**	***	.	.	***	.	***	.	**	--	-
Cranham (Gloucester).	1887	.	***	.	***	.	**	--	-	--	.	**
Near Newport (Wales).	1893	--	-	--	.	**	-	--	--	***	**	--
Herne Bay (Kent).	1922	-	***	-	.	--	**	**	***	***	-	***
Craycombe (Worcestershire).	1923	***	-	.	--	**	**	***	***	-	***	--

Key ( Compared standard rainfall period 1881 to 1915 )

Up to 49 % --- 75 to 99 % - 125 to 149 % \*\*

50 to 74 % -- 100 to 124 % \* Over 149 % \*\*\*

for the five prior seasons; the second a list of colonies and the date of the last sighting of *A. crataegi* therein where this is thought to be known with some accuracy, together with the September rainfall for an eleven-year period surrounding that date.

Above average rainfall is apparent before and after the years of the last records, but a much nearer average incidence of September rain before the years of abundance. Furthermore, a graph of the twenty-year-running average of national rainfall for September from 1747 to 1950 shows that the majority of our colonies became extinct during wet periods.

There are anomalies, but this is not surprising as the rainfall figures utilised are a national average and large deviations are experienced over small distances. Dennis (*loc. cit.*) noted that the species was dependent on "micro-environmental conditions", and Williams (1951) pointed out that temperature and rainfall from one to three months previously considerably affect insect numbers. More significantly, Beirne (1947) wrote that "a succession of seasons of gradually increasing rainfall is detrimental" to butterflies, although he did not link this to *A. crataegi*. Also, and more specifically, Pollard (1979) showed how unfavourable weather during a critical month can have enormous effects on the range, distribution and numbers of *Lagoda camilla* L.; in this case, low June temperatures were found to be the crucial factor, allowing birds to gain a predation advantage on larvae and pupae. The periods in which the black-veined white declined substantially coincide with those in which the average September rainfall was high, although its final collapse after about 1910 occurred during a long-term dry period; nevertheless, significantly the last British colony records came in 1922 and 1923, after which for three years September rainfall was considerably above average. The whole period 1919 to 1927 inclusive was one of scarcity for most adult lepidoptera (Beirne, *loc. cit.*).

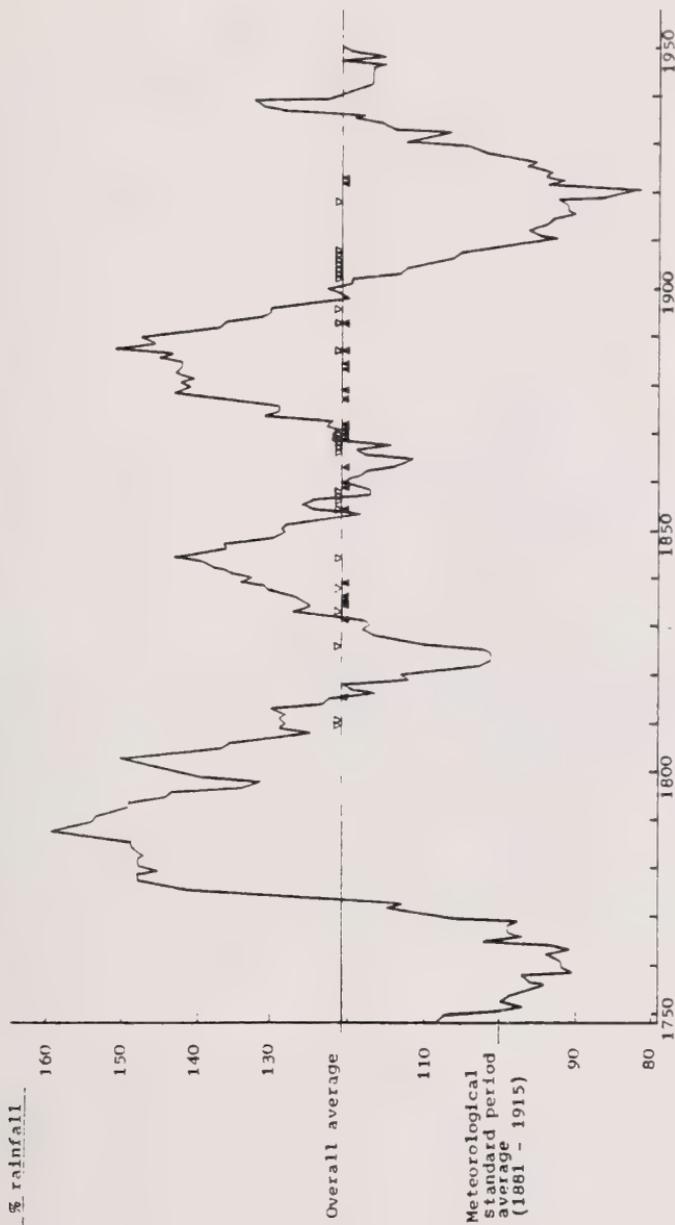
During the month of September, larvae were at a very early instar and vulnerable. Barrett (1882) considered, of lepidoptera as a whole, that large numbers of larvae were "actually drowned by continued heavy rain, and others rendered liable to disease". However, the direct action of rain on the early stages of *A. crataegi* larvae should have been slight as they sheltered during rain under a web "so well contrived that not a drop of rain could penetrate" (Kollar, 1840). Also, caterpillars would have been even more susceptible to direct influence in August, a month with no correlation between excessive rainfall and the decadence of *A. crataegi*. Therefore, it is likely that heavy September rainfall was only the catalyst for the more direct cause(s) of this extinction.

Joseph Schmidberger, quoted at length by Kollar (*loc. cit.*), recorded much interesting early information on *A. crataegi* in central Europe which may or may not be applicable to our country. In particular, he found that during the period shortly after hatching larvae gradually diminished in numbers, adding that "Birds and insects destroy them, and many perish from unfavourable weather. Rarely twenty or thirty out of a family, sometimes much fewer survive to occupy their winter habitation". Incidentally, he also noted that larvae were "uninjured even by very severe weather" over the winter period.

Detrimental weather throughout its flight time in June and July may well have also contributed to a fall in numbers; this occurred in more than a quarter of the years of last local record. During the 1870s it was especially prevalent, and since only one September received a below-average rainfall (compared to the standard meteorological period, 1881-1915), this formed a potent decade of climatic adversity.

T A B L E C

TWENTY YEAR MOVING AVERAGE OF SEPTEMBER RAINFALL, 1747 - 1950



Note : At any one date, the graph illustrates the previous 20 year average

▽ = years when *A. crataegi* was common

▲ = years of last local records of *A. crataegi*.

### Frost

Late spring frosts during May are known to be harmful to some lepidopterous larvae (Beirne, *loc. cit.*) Although estimates of such frosts have been made for the distant past, minimum temperature thermometers were not in general use until just before the mid 19th century and accurate figures are unavailable until some time after; also, local topography is critical as regards the incidence of frost (Manley, 1962), so precise records for the local colonies of *A. crataegi* during the critical period are difficult to establish. However, in Kent there is likely to be only one May frost cold enough to affect apple buds every decade (Hogg, 1950); and Manley (1946) provisionally notes that the incidence and intensity of spring and autumn frosts (May and September) "are probably little changed from what they were in the 18th century". In addition, there is little relationship between the frequency of freezing days as recorded at Kew from 1878 (Belasco, 1951) and the fluctuations of the insect in question.

### Temperature

Perhaps surprisingly, after examination of the temperature records for Oxford (Lewis, 1937) and nationally on a monthly, seasonal, annual and twenty-year-running average basis from 1659 to date (Meteorological Office, 1915; Manley, 1974), I can find no synchronology between these figures and the spasmodic rises and eventual downfall of the black-veined white.

\* \* \* \* \*

As illustrated by Lamb (1965) and Manley (1970), many variations of climate must have occurred since the black-veined white first appeared in Britain thousands of years ago. Were these relatively recent wet Septembers so unusual, indeed unique, in the history of this butterfly in this country that it was unable to withstand the extremity to the point of extinction? As can be seen in Table C, an even more pronounced period of wet Septembers occurred during the latter half of the 18th century than later, so why did not the insect become extinct at that time? Heath (*loc. cit.*) has suggested that the cause of this insect's downfall might be multi-factorial; apparently it was not climate alone, either directly or indirectly, and there must have been at least one other concurrent reason.

(To be continued)

LITHOPHANE LEAUTIERI BOISD., A FURTHER SPREAD EASTWARDS. — An example of Blair's Shoulder-knot came to the M.V. light in my Walberswick garden on 29th October 1982. Mr. Arthur Watchman has been taking it at Monks Eleigh in West Suffolk for several years but as far as I am aware this is the first record for East Suffolk. No doubt the increase in the number of cupressus growing nearby has attracted this moth, and it will be interesting to see if it is breeding locally. — H. E. CHIPPERFIELD, The Shieling, Walberswick, Southwold, Suffolk.

LUFFIA LAPIDELLA GOEZE (LEP.: PSYCHIDAE)  
IN CORNWALL

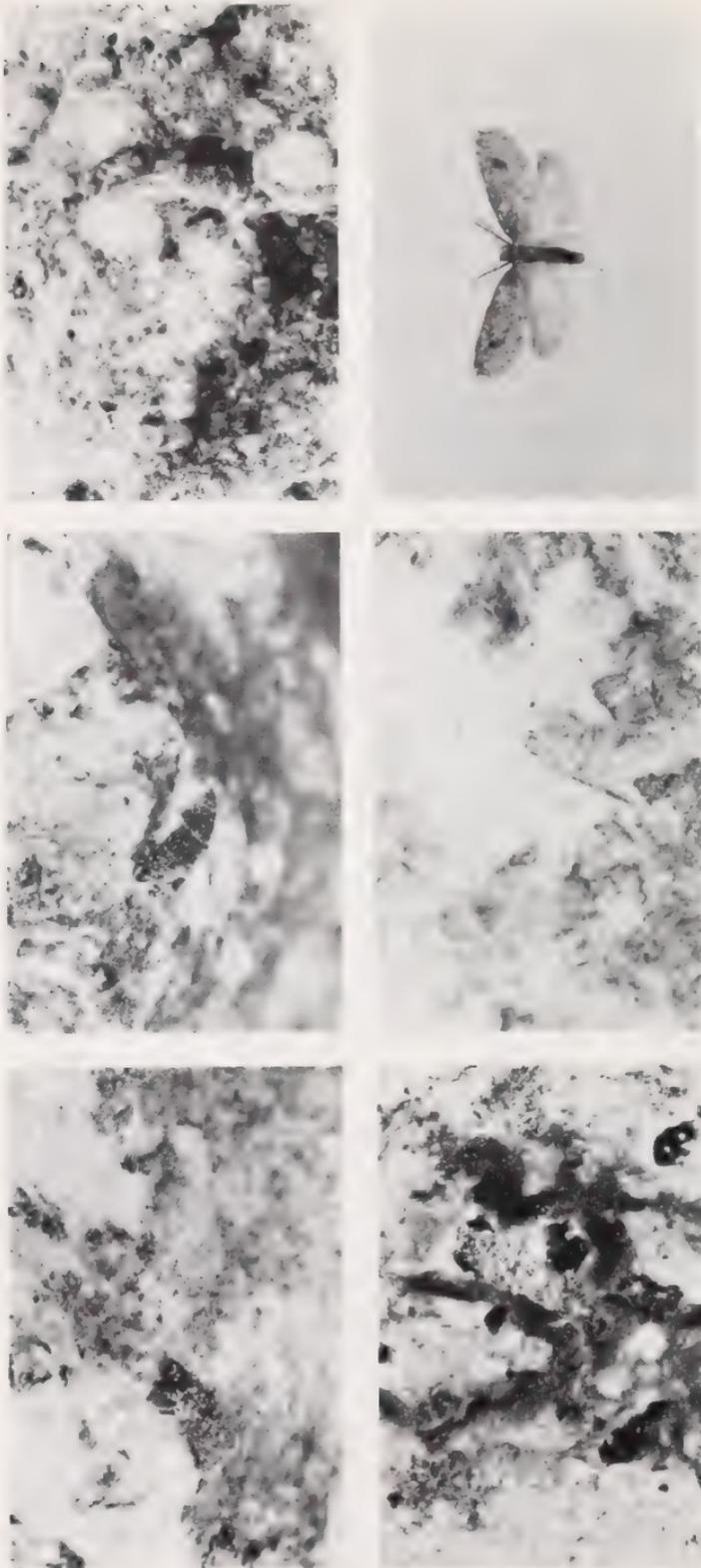
By Dr. F. H. N. SMITH \*

During May, 1981, tiny objects coming in through a window at Marazion, near Penzance, aroused the curiosity of Mrs. W. G. Bennett, who had never noticed them before. She soon discovered that there were many of them outside on the licheny granite walls of the house, and some were sent to Mrs. Stella Turk, of the Cornish Biological Records Unit, who suggested sending some to me also. The objects were very mobile blackish case-bearing larvae, 3 or 4 mm long, with jet black glossy heads and large grasping true legs, especially the third pair, and the cases, averaging 5-6mm in length, were covered with particles of lichen and grit, indicating that they were probably Psychidae. Reference to the descriptions in Tutt (1900), confirmed this, and the slightly curved conical shape of the case, like a night cap, suggested *Luffia lapidella* Goeze or *Luffia ferchaultella* Stephens, which are closely related and possibly even the same species. The only other contender seemed to me to be *Bacotia sepium* Speyer, the larval cases of which are much the same size though not so tapering, but it is said to be a woodland species. *L. ferchaultella* has been recorded from various localities in England, and is apparently consistently parthenogenetic producing successive broods of female insects only, these being wingless, as are all female Psychids except in the genera *Narycia* and *Diplodoma*. The name *lapidella* is applied only to that form of the species, if they are the same, which reproduces bisexually, so that if something recognisable as a "moth" were to result from these larvae, and was definitely not *B. sepium*, the chances of it being *lapidella* would be good.

Tutt (*op. cit.*, 235) states of *L. lapidella* "the male has not yet been bred in Britain, although we refer cases obtained by Banks in Purbeck, and by Richardson in Portland, hereto, and suspect that the cases obtained by Edelston on an old limestone wall between Conway and Llandudno, as well as Gregson's *Psyche hibernicella*, should also be referred, but until the male is bred there must always be the suspicion that the British insects may be *L. ferchaultella (pomona)*." L. T. Ford (1945) states "apparently the only authentic records of this species are from the Channel Islands, where the moth is moderately common; other British records are no doubt referable to the parthenogenetic form to which the names *ferchaultella* Steph. and *pomona* Staint. have been applied." Meyrick (1928) placed *Luffia* in the Tineidae, stating of *lapidella* "Kent and Dorset to Hertford and Essex, local", and also mentions the two names applied to "the parthenogenetic form".

I offered the larvae assorted lichens, and one or two which were separated from their cases in transit spun new ones, which they covered with particles of green lichen from a tree trunk. There was evidence of feeding, but it was always difficult to see exactly what

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*Luffia lapidella* Goeze, Marazion, Cornwall

Top left and centre: Larvae and case on granite, 2.v.82. Top right: Pupa from which male has emerged, 1.viii.83.  
 Lower left: Adult female hanging from case, 24.viii.82. Lower centre: Adult male at rest, 1.viii.82. Lower right:  
 Male specimen, set. All approx.  $\times 2\frac{3}{4}$ .

a larva was eating because of the case. By the end of June all larval movement has ceased, which I hoped meant that pupation had taken place, and I began light spraying every few days. Early in August Mrs. Turk phoned to say she was posting me a moth which had emerged during the previous week, and as there was no sign of life from my cases I got in touch with Mrs. Bennett, who sent me some more. They arrived on August 6th, most showing partially extruded emerged male pupae, but a few still intact, from one of which a male emerged the next morning. In fact, nothing whatever came of my original sample, perhaps because alternative lichens were not acceptable or spraying drowned them. Each of these males measured 10mm in span and was grey with finely reticulated darker grey scaling, encouragingly different from *L. sepium*. During the next three weeks nothing further appeared, and I opened the remaining intact cases, some of which were empty, others contained empty female pupal cases, and one contained a female pupal case full of softish white ova. According to Tutt (*op. cit.*, 244) the fertile female dies and falls from its perch on the case very soon after egg-laying, this also eventually happening to infertile females. The ova hatched about a month later, and the larvae quickly constructed tiny cases to which they attached particles taken from those of the parents. They were put on lichen-covered granite which was placed outside in a large flowerpot, protected by fine mesh and sheltered from the worst of the weather, but in the early spring of 1982 I was unable to find any trace of them.

Mr. D. J. Carter, of the British Museum (Natural History), agreed that the moth was a *Luffia* species, but suggested seeking the opinion of Mr. Peter Hättenschwiler, of Uster, Switzerland, who specialises in the Psychidae, regarding its exact identity. From larval and pupal cases, and photographs of the larva and adult male moth, Mr. Hättenschwiler was able to confirm that it was *Luffia lapidella* Goeze, and he sent me a distribution map of the British Isles showing seven locations where it has been recorded, as distinct from *ferchaultella*. In subsequent consultation with Mr. Hättenschwiler and Mr. John Heath, of the Institute of Terrestrial Ecology, Monks Wood, six of these proved to have been based on larval cases thought to be of *lapidella* without the substantiation of adult specimens, but doubt remained about one locality, namely Grange-over-sands, where a specimen was believed to have been bred by A. E. Wright in 1937 and afterwards determined by Meyrick. Dr. Neville Birkett confirmed that only a case, not a moth, is in the A. E. Wright collection. Mr. Heath, aided by Dr. Gaden Robinson, checked through the Meyrick material in the British Museum reputed to be of this species, and found that there were no adults at all, nor was there anything collected by A. E. Wright. Thus it was eventually ascertained that the Marazion males were the first to have been positively identified from the British mainland.

In early May, 1982, I observed many active larvae on the walls of Mrs. Bennett's house, as well as on other buildings in Marazion, and outside the town on a granite bridge and the lee side of the sea wall. There is an unconfirmed report of cases on a wall at Penzance,

and it seems to me that this quite extensive distribution must have taken some years to occur. Cases were found on sheltered walls facing any direction, but were less numerous higher than about six feet above the ground. On June 6th a case found on the bridge contained a pupa. I brought a dozen cases home with lichen taken from the walls at Marazion, and left them alone in an airy plastic container outside. On August 1st a male moth emerged. On the 3rd I returned to Marazion in the late afternoon, and searched in vain for a freshly emerged female. Several cases showed extruded emerged male pupae, and although I failed to find a male at rest I netted one as it was flying quite strongly by the house wall. I brought back six more cases, which I added to those in the container.

On August 24th I searched again, and after about an hour found a female moth clinging to the free end of a case. It was 4mm long, almost half of which was ovipositor, was inactive apart from minimal twitching when touched, and it died two days later, being evidently infertile as there were no eggs in the case, the only contents being the empty pupa and larval skin. I saw no male on this occasion. In contrast to *ferchaultella*, which reputedly lays its eggs very soon after emergence, this behaviour of the female *lapidella* seems to reaffirm that the male is indispensable for reproduction, and if they *are* biologically different forms of the same species the questions arising are when, why and how does one become the other? By this date nothing further had resulted from the 18 cases in captivity, so I examined them. None contained a living male pupa, the only viable male out of this number being the one which emerged on August 1st. Some cases were quite empty, a few contained desiccated larvae, three or four contained parasite cocoons, and three contained female pupal cases full of eggs, all of which later proved to be fertile. I had found no evidence of a female moth whatsoever, and conclude that these cases must have been among the six I added on August 3rd.

In Marazion, larvae were associated with three different lichens, the most widespread being tenacious and dark greenish grey, the others a white raised crusty species and a yellow species in small patches. Dr. Dougal Swinscow, of Topsham, Exeter, identified these as *Parmelia glabrata* (Lamy) Nyl. subsp. *fuliginosa* (Fr. ex Dub) Laund., *Ochrolechia parella* (L.) Massal., and *Caloplaca aurantia* (Pers.) Hellbom, respectively. Tutt. (*op. cit.*, 243) mentions *Lecidea*, now *Diploicia, canescens* (Dickson) Massal., and the alga *Pleurococcus*. Dr. Swinscow tells me that the latter is a generic name for perhaps several species of unicellular algae, which are symbiotic with lichens, so it is likely these will inevitably be part of the larval diet.

The parasite cocoons proved to be of small black Hymenoptera, which Dr. Mark Shaw, of the Royal Scottish Museum, Edinburgh, has been able to place in the subfamily *Campopleginae* of the Ichneumonidae, and they may belong to the genus *Diadegma*. He says that identification down to species level in this subfamily is extremely difficult due to the lack of comparative material available to specialists, and this is an opportunity to mention the importance of sending to him all bred parasitic material that can be spared.

### Acknowledgements

For all the help given to me I would like to express my sincere thanks to Mrs. S. M. Turk, Mr. D. J. Carter, Mr. P. Hättenschwiler, Dr. N. L. Birkett, Mr. J. Heath, Dr. G. S. Robinson, Dr. T. D. V. Swinscow and Dr. M. R. Shaw. I also thank Mr. E. S. Bradford for kindly preparing the photographs for publication. The credit for this interesting discovery belongs to Mrs. Bennett, to whom I am sure we are all grateful.

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A NEW COUNTY RECORD FOR BUCKINGHAMSHIRE WITH NOTES ON OTHER LEPIDOPTERA OF INTEREST. — In November 1981, I moved house to a small village in the north of Buckinghamshire called New Bradwell. This note encompasses the more interesting records for here for 1982, and adds one new species to Sir Eric Ansorge's *The Macrolepidoptera of Buckinghamshire* (1969).

*Chilodes maritima* Tausch.: Silky Wainscot, a single adult caught at light on June 4, is the first record of the species for the county to my knowledge. *Rhyacia simulans* Hufn.: Dotted Rustic, one on July 6 and another on July 7 are the only records of occurrence of this moth, apart from an unpublished record of the species in Milton Keynes between 1968-78 by M. Albertini. *Hadena compta* D. & S.: Varied Coronet, until I noted singletons here on June 6 and July 7, this species was only recorded from eight localities in the county during the past 20 years. *Spodoptera exigua* Hbn.: Small Mottled Willow, a most infrequent visitor to Buckinghamshire with individuals previously noted in 1962, 1966 and 1976, to which I add a single record of a male on July 13.

To date, 144 species of macrolepidoptera have been recorded by me from New Bradwell, including *Saturnia pavonia* L.: Emperor; *Perizoma flavofasciata* Thunb.: Sandy Carpet; *Semiothisa clathrata* L.: Latticed Heath; *S. wauaria* L.: V-moth; *Spaelotis ravida* D. & S.: Stout Dart; *Graphiphora augur* F.: Double Dart; *Aporophyla lutulenta* D. & S.: Deep Brown Dart; *Polymixis falvicincta* D. & S.: Large Ranunculus; *Atethmia centrago* Haw.: Centre-barred Sallow. In conclusion I wish to acknowledge Mr. M. Albertini who contributed on species post Ansorge, and who is in the process of revising the county list of lepidoptera. — M. HADLEY, 2 Thompson Street, New Bradwell, Nr. Wolverton, Bucks MK13 OEB.

## A CHECK-LIST OF BREEDING BRITISH MOTHS (MACROLEPIDOPTERA)

By C. I. RUTHERFORD\*

To prepare a check-list of currently breeding British species we shall start with an agreed check-list and then categorise it according to existing knowledge. We must use a list based on Kloet and Hincks and that most readily available to us all is the *Recorder's Log Book* recently compiled by Bradley and Fletcher and published by Curwen. I propose however to take the families in the more familiar order, starting with the Sphingidae. I do not intend to get involved in a discussion as to whether such insects as *E. sericea*, *M. favicolor* and *D. concinnata* are or are not good species, if they are in the check-list as a species then I shall so consider them.

The first split will be between Residents (**R**) and Migrants (**M**). It is the Residents with which we are concerned and they will be subdivided as follows: Current Residents (**R**), Temporary Residents (**TR**), Residents reinforced by migration (**R(M)**) and Extinct Residents (**ER**); any species not recorded in Britain in the last ten years will be placed in this category, in the hope that someone will look for it before it is too late, the date of the last capture will be recorded wherever possible. The total we are after is (**R**) + **R(M)**. At the same time we can split the migrants according to frequency as Frequent (**FM**), Scarce (**SM**) and Occasional (**OM**). One problem may be the choice between category **R(M)** or **FM** for those species which can be regarded as the moth counterparts of the Red Admiral Butterfly. At the drafting stage I feel it is necessary to mention and categorise all species on the generally accepted list to establish that some have been deliberately eliminated and not just overlooked. As ten years is the period chosen to qualify for extinction it seems consistent to adopt the same period for a temporary resident to qualify for full resident status, it being assumed that if it survives that long it should survive indefinitely.

If any reader has evidence either from field work or from published literature to suggest that any particular categorisation is incorrect in so far as resident status is concerned we should welcome that evidence so that our final list can be as accurate as possible. It will not, of course, be "final" as we are dealing with a fluid situation; every few years there will have to be a review resulting in a few deletions and, hopefully, some additions.

### Sphingidae (Bradley & Fletcher pp.101-102)

<b>R</b>	Sphinx ligustri, Hyloicus pinastri, Mimas tiliae, Smerinthus ocellata, Laothoe populi, Hemaris tityus, H. fuciformis, Deilephila elpenor, D. porcellus . . . . .	9
<b>FM</b>	A. convolvuli, A. atropos, M. stellatarum.	

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- SM *H. galii*, *H. lineata*, *H. celerio*.  
 OM *D. nerii*, *H. euphorbiae*.

**Notodontidae** (B. & F. pp. 102-104)

- R *Phalera bucephala*, *Cerura vinula*, *Furcula bicuspis*, *F. furcula*, *F. bifida*, *Stauropos fagi*, *Notodonta dromedarius*, *Eligmodonta ziczac*, *Peridea anceps*, *Pheosia gnoma*, *P. tremula*, *Ptilodon capucina*, *Ptilodontella cucullina*, *Odontosia carmelita*, *Pterostoma palpina*, *Ptilophora plumigera*, *Drymonia dodonaea*, *D. ruficornis*, *Clostera pigra*, *C. curtula*, *Diloba caeruleocephala* . . . . . 21
- TR *C. anachoreta*
- ER *Leucodonta bicoloria* (1938 in Ireland, 1880 in England)
- OM *N. torva*, *T. tritophus*, *G. crenata*.

**Thyatiridae** (B. & F. pp. 78-79)

- R *Thyatira batis*, *Habrosyne pyritoides*, *Tethea ocularis*, *T. or.*, *Tetheella fluctuosa*, *Ochropacha duplaris*, *Cymatophorima diluta*, *Achlya flavicornis*, *Polyploca ridens* . . . . . 9

**Lymantriidae** (B. & F. p. 105)

- R *Orgyia recens*, *O. antiqua*, *Dasychira fascelina*, *D. pudibunda*, *Euproctis chryssorrhoea*, *E. similis*, *Leucoma salicis*, *Lynantria monacha* . . . . . 8
- ER *Laelia coenosa* (1879)
- ER/OM *L. dispar*, (complicated by escapes/releases from captivity)
- OM *Arctornis l-nigrum* (TR 1947-1960)

**Lasiocampidae** (B. & F. pp. 76-77)

- R *Poecilocampa populi*, *Trichiura crataegi*, *Eriogaster lanestris*, *Malacosoma neustria*, *M. castrensis*, *Lasiocampa trifolii*, *L. quercus*, *Macrothylacia rubi*, *Philudoria potatoria*, *Gastropacha quercifolia* . . . . . 10
- ER *Phyllodesma ilicifolia* (1965)

**Saturniidae & Endromidae** (B. & F. p. 77)

- R *Saturnia pavonia*, *Endromis versicolora* . . . . . 2

**Drepanidae** (B. & F. pp. 77-78)

- R *Falcaria lacertinaria*, *Drepana binaria*, *D. cultraria*, *D. falcataria*, *Sabre harpagula*, *Cilix glaucata* . . . . . 6

## Nolidae (B. &amp; F. p. 109)

R	Meganola strigula, M. albula, Nola cucullatella, N. confusalis . . . . .	4
SM(TR?)	N. aerugula.	

## Arctiidae (B. &amp; F. pp. 105-108)

R	Thumatha senex, Setina irrorella, Miltochrista miniata, Nudaria mundana, Atolmis rubricollis, Cybosia mesomella, Pelosia muscerda, P. obtusa, Eilema sororcula, E. griseola, E. caniola, E. pygmaeola, E. complana, E. sericea, E. deplana, E. lurideola, Lithosia quadra (M), Coscinia cribraria, Parasemia plantaginis, Arctia caja, A. villica, Diacrisia sannio, Spilosoma luteum, S. lubricipeda, S. urticae, Diaphora mendica, Phragmatobia fuliginosa, Euplagia quadripunctaria, Callimorpha dominula, Tyria jacobaeae . . . . .	30
OM	Spiris striata, Utetheisa pulchella.	
	Total	99

## Noctuidae – Noctuinae (B. &amp; F. pp. 109-113)

R	Euxoa obelisca, E. tritici, E. nigricans, E. cursoria, Agrotis cinerea, A. vestigialis, A. segetum, A. clavis, A. exclamationis, A. trux, A. ipsilon, A. puta, A. ripae . . . . .	13
OM	Actinotia polyodon.	
R	Axylia putris, Ochropleura praecox, O. plecta . . . . .	3
OM	O. fennica, O. flammata.	
R	Eugnorisma depuncta, Standfussiana lucerneae . . . . .	2
R(M)	Rhyacia simulans . . . . .	1
R	Noctua pronuba, N. orbona, N. comes, N. fimbriata, N. janthina, N. interjecta, Spaelotis ravidia, Graphiphora augur, Eugraphe subrosea, Paradiarsia sobrina, P. glareosa, Lycophotia porphyrea . . . . .	12
R(M)	Peridroma saucia . . . . .	1
R	Diarsia mendica, D. dahlia, D. brunnea, D. rubi, D. florida, Xestia alpicola, X. c-nigrum, X. ditrapezium, X. triangulum, X. ashworthii, X. baja, X. rhomboidea, X. castanea, X. sexstrigata, X. xanthographa, X. agathina, Naenia typica, Eurois occulta, Anaplectoides prasina, Cerastris rubricosa, C. leucographa . . . . .	21
	Total	53

## Noctuidae — Hadeninae (B. &amp; F. pp. 113-117)

R	Anarta myrtilli, A. cordigera, A. melanopa, Discestra trifolii, Hada nana, Polia bombycina, P. hepatica, P. nebulosa . . . . .	8
R	Pachetra sagittigera (no record published in last ten years but probably not yet <b>ER</b> ) . . . . .	1
R	Sideridis albicolon, Heliophobus reticulata, Mamestra brassicae, Melanchra persicariae, Lacanobia contigua, L. w-latinum, L. thalassina, L. suasa, L. oleracea, Papestra biren, Ceramica pisi, Hecatera bicolorata . . .	12
ER	Hecatera dysodea (1941)	
R	Hadena rivularis, H. perplexa, H. irregularis, H. luteago, H. compta, H. confusa, H. albimacula, H. bicruris, H. caesia, Eriopygodes imbecilla, Cerapteryx graminis, Tholera cespitis, T. decimalis, Panolis flammea, Egira conspicillaris, Orthosia cruda, O. miniosa, O. opima, O. populeti, O. gracilis, O. stabilis, O. incerta, O. munda, O. gothica . . . . .	24
R	Mythimna turca, M. conigera, M. ferrago, M. albipuncta ( <b>M</b> ), M. pudorina, M. straminea, M. impura, M. pallens, M. favicolor, M. litoralis, M. l-album, M. obsoleta, M. comma, M. putrescens . . . . .	14
SM	M. vitellina, M. unipuncta, M. loreyi.	
R	Senta flammea . . . . .	1
	Total	60

## Noctuidae — Cuculliinae (B. &amp; F. pp. 117-121)

R	Cucullia absinthii, C. chamomillae, C. umbratica, C. asteris, C. gnaphalii, C. lychnitis, C. verbasci . . . . .	7
ER	C. scrophulariae (Doubtfully British)	
R	Calophasia lunula, Brachylomia viminalis, Leucochlaena oditis, Brachionycha sphinx, B. nubeculosa, Dasypolia templi, Aporophyla australis, A. lutulenta, A. nigra, Lithomoia solidaginis, Lithophane semi-brunnea, L. socia, L. ornitopus, L. leautieri . . . . .	14
ER	L. furcifera (1907 but later as <b>OM</b> )	
OM	L. lamda	
R	Xylena vetusta, X. exsoleta, Xylocampa areola, Allophytes oxyacanthae . . . . .	4
OM	Meganephria bimaculosa, Valeria oleagina	
R	Dichonia aprilina, Dryobotodes eremita, Blepharita adusta . . . . .	3
OM	B. satura, Trigonophora flammea	
R	Polymixis flavicineta, P. xanthomista, Antitype chi, Eumichtis lichenea, Eupsilia transversa, Jodia croceago, Conistra vaccini, C. ligula, C. rubiginea . . . . .	9
OM	C. erythrocephala	

R	<i>Agrochola circellaris</i> , <i>A. lota</i> , <i>A. macilenta</i> , <i>A. helvola</i> , <i>A. litura</i> , <i>A. lychnidis</i> , <i>Parastichtis suspecta</i> , <i>Atethmia</i> <i>centrago</i> , <i>Omphaloscelis lunosa</i> , <i>Xanthia citrago</i> , <i>X.</i> <i>aurago</i> , <i>X. togata</i> , <i>X. icteritia</i> , <i>X. gilvago</i> , <i>X. ocellaris</i> .	15
	<u>Total</u>	<u>52</u>

**Noctuidae** — **Acronictinae** (B. & F. pp. 121-123)

R	<i>Moma alpium</i> , <i>Acronicta megacephala</i> , <i>A. aceris</i> , <i>A. leporina</i> , <i>A. alni</i> , <i>A. tridens</i> , <i>A. psi</i> , <i>A. menyan-</i> <i>thidis</i> , <i>A. euphorbiae</i> , <i>A. rumicis</i> . . . . .	10
ER	<i>A. strigosa</i> (1933)	
OM	<i>A. auricoma</i>	
R	<i>Simyra albovenosa</i> , <i>Craniophora ligustri</i> , <i>Cryphia</i> <i>domestica</i> , <i>C. muralis</i> . . . . .	4
	<u>Total</u>	<u>14</u>

**Noctuidae** — **Amphipyrinae** (B. & F. pp. 123-129)

R	<i>Amphipyra pyramidea</i> , <i>A. berbera</i> , <i>A. tragopogonis</i> , <i>Mormo maura</i> , <i>Dypterygia scabriuscula</i> , <i>Rusina</i> <i>ferruginea</i> , <i>Thalpophila matura</i> . . . . .	7
ER	<i>Trachea atriplicis</i> (1915)	
R	<i>Euplexia lucipara</i> , <i>Phlogophora meticulosa</i> , <i>Ipimorpha</i> <i>retusa</i> , <i>I. subtusa</i> , <i>Enargia paleacea</i> , <i>E. ypsilon</i> , <i>Dicycla oo</i> , <i>Cosmia affinis</i> , <i>C. diffinis</i> , <i>C. trapezina</i> , <i>C. pyralina</i> , <i>Hyppa rectilinea</i> , <i>Apamea monoglypha</i> , <i>A. lithoxylaea</i> , <i>A. sublustris</i> , <i>A. exulis</i> , <i>A. oblonga</i> , <i>A. crenata</i> , <i>A. epomidion</i> , <i>A. furva</i> , <i>A. remissa</i> , <i>A.</i> <i>unanimis</i> , <i>A. anceps</i> , <i>A. sordens</i> , <i>A. scolopacina</i> , <i>A.</i> <i>ophiogramma</i> . . . . .	26
ER	<i>A. pabulatricula</i> (1919)	
R	<i>Oligia strigilis</i> , <i>O. versicolor</i> , <i>O. latruncula</i> , <i>O. fas-</i> <i>ciuncula</i> , <i>O. furuncula</i> , <i>O. literosa</i> , <i>Mesapamea secalis</i> , <i>Photedes captiuncula</i> , <i>P. minima</i> , <i>P. morrisii</i> , <i>P. ex-</i> <i>trema</i> , <i>P. elymi</i> , <i>P. fluxa</i> , <i>P. pygmina</i> , <i>P. brevilinea</i> , <i>Eremobia ochroleuca</i> , <i>Luperina testacea</i> , <i>L. nickerlii</i>	18
OM	<i>L. dumerilii</i> , <i>L. zollikoferi</i>	
R	<i>Amphipoea lucens</i> , <i>A. fucosa</i> , <i>A. crinanensis</i> , <i>A.</i> <i>oculea</i> , <i>Hydraecia micacea</i> , <i>H. petasitis</i> , <i>H. osseola</i> , <i>Gortyna flavago</i> . . . . .	8
TR	<i>G. borelii</i>	
R	<i>Calamia tridens</i> , <i>Celaena haworthii</i> , <i>C. leucostigma</i> , <i>Nonagria typhae</i> , <i>Archanara geminipuncta</i> , <i>A. dis-</i> <i>soluta</i> , <i>A. neurica</i> , <i>A. sparganii</i> , <i>A. algae</i> , <i>Rhizedra</i> <i>lutosa</i> . . . . .	10
ER	<i>Sedina buettneri</i> (or was it TR?)	

R	<i>Arenostola phragmitidis</i> , <i>Oria musculosa</i> , <i>Coenobia rufa</i> , <i>Charanyca trigrammica</i> , <i>Hoplodrina alsines</i> , <i>H. blanda</i> , <i>H. ambigua</i> . . . . .	7
OM	<i>H. superstes</i> , <i>Spodoptera littoralis</i>	
SM	<i>S. exigua</i>	
R	<i>Caradrina morpheus</i> , <i>C. clavipalpis</i> , <i>Chilodes maritimus</i> , <i>Athetis pallustris</i> , <i>Acosmetia caliginosa</i> , <i>Stilbia anomala</i> , <i>Elaphria venustula</i> , <i>Panemeria tenebrata</i> . . .	8
	<u>Total</u>	<u>84</u>

**Noctuidae – Heliothinae (B. & F. pp. 129-130)**

OM	<i>Periphanes delphinii</i> , <i>Protoschinia scutosa</i>	
R	<i>Pyrrhia umbra</i> . . . . .	1
SM	<i>Helicoverpa armigera</i> , <i>Heliothis peltigera</i>	
R	<i>Heliothis virescens</i> , <i>H. maritima</i> . . . . .	2

**Noctuidae – Acontiinae (B. & F. pp. 130-131)**

OM	<i>Eublemma ostrina</i> , <i>E. parva</i> , <i>Lithacodia deceptorica</i> .	
R	<i>Lithacodia pygarga</i> , <i>Eustrotia uncula</i> , <i>Deltote bankiana</i> . . . . .	3
ER	<i>Emmelia trabealis</i> (between 1955 & 1970)	—
OM	<i>Acontia lucida</i>	

**Noctuidae – Chloephorinae (B. & F. p. 131)**

R	<i>Earias clorana</i> , <i>Bena prasinana</i> , <i>Pseudoips fagana</i> . . .	3
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**Noctuidae – Sarrothripinae (B. & F. p. 131)**

R	<i>Nycteola revayana</i> . . . . .	1
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**Noctuidae – Pantheinae (B. & F. p.131)**

R	<i>Colocasia coryli</i> . . . . .	1
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Total 11**Noctuidae – Plusiinae (B. & F. pp. 132-133)**

SM	<i>Trichoplusia ni</i>	
R	<i>Diachrysis chrysis</i> , <i>D. chryson</i> . . . . .	2
OM	<i>D. orichalcea</i> , <i>Macdunnoughia confusa</i> .	
R	<i>Polychrysis moneta</i> , <i>Plusia festucae</i> , <i>P. putnami</i> ( <i>gracilis</i> ), <i>Autographa gamma</i> (M), <i>A. pulchrina</i> , <i>A. jota</i> , <i>A. bractea</i> , <i>Syngrapha interrogationis</i> , <i>Abrostola trigemina</i> , <i>A. triplasia</i> . . . . .	10

Total 12

**Noctuidae – Catocalinae (B. & F. pp. 133-134)**

R	Catocala nupta, C. promissa, C. sponsa . . . . .	3
RM+TR	C. fraxini	
OM	C. electa	
TR	Minucia lunaris	
R	Callistege mi, Euclidia glyphica . . . . .	2
	Total	5

**Noctuidae – Ophiderinae (B. & F. pp. 134-135)**

OM	Catephia alchymista	
R	Tyta luctuosa, Lygephila pastinum, L. cracca, Scoliopteryx libatrix, Phytometra viridaria, Colobochyla salicalis, Laspeyria flexula, Rivula sericealis, Parascotia fuliginaria . . . . .	9

**Noctuidae – Hypeninae (B. & F. pp. 135-136)**

OM	Hypena obsitalis, Schrankia intermedialis	
R	Hypena crassalis, H. proboscidalis, H. rostralis, Schrankia taenialis, S. costaestrigalis, Hypenodes turfosalis, Herminia strigilata, H. tarsipennalis, H. nemoralis, Macrochilo cribrumalis, Paracolax derivalis, Trisateles emortualis . . . . .	12
	Total	21

Noctuidae total 312 species

(To be continued)

FURTHER NOTES UPON THE FOODPLANT OF COLEOPHORA SALICORNIAE WOCKE. — I have this autumn recorded larval cases of *Coleophora salicorniae* feeding on *Salicornia europaea* and *Salicornia ramosissima*, so I regret that the suggestion that this species might be restricted to *Salicornia fragilis* as reported in *Ent. Rec.* 94: 103 is unfounded, and the species probably occurs upon any *Salicornia* sp., with habitat being the limiting factor. I regret therefore that there is no easy path to this species which (in my experience) requires a considerable degree of patience, time, and concentration to find in any numbers. — N. F. HEAL, Fosters, Detling Hill, Nr. Maidstone, Kent.

Thera juniperata juniperata L. JUNIPER CARPET IN EAST SUSSEX: — On the 21st October 1982 after checking my light trap, I noted a worn geometer at the front door light of my home in Ninfield, which turned out to be this species. Mr. C. Pratt informs me that this is the first known example of this insect in E. Sussex. It appears that the only known locality for juniper in E. Sussex is some miles away, so it seems likely the moth originated from a garden plant in the near vicinity. I am indebted to Mr. S. W. P. Pooles for confirming the identification, and to Mr. C. Pratt for information on the species and its foodplant. — M. PARSONS, The Forge, Russells Green, Ninfield, E. Sussex.

*ELACHISTA LITTORICOLA* LE MARCHAND, 1938  
(LEP., ELACHISTIDAE), NEW TO THE BRITISH ISLES.

By E. H. WILD\*

On June 4th 1982, I netted two males of a large Elachistid flying over grasses close to the shore near Keyhaven on the Hampshire coast. Mr. E. C. Pelham-Clinton, to whom I showed them at the Annual Exhibition of the B.E.H.N.S. on 23rd October 1982, thought that they might be new to Britain and kindly undertook to prepare a slide of the genitalia. From this he tentatively identified them as the above species, though there were minor differences in the genitalia when compared with the figure in Traugott-Olsen & Nielsen (1977). Comparison has now been made with material from Denmark in the British Museum (Natural History) collection, and the identification confirmed by Dr. J. D. Bradley.

So far, the species is known only from the coast of Denmark (Traugott-Olsen & Nielsen, 1977); and from maritime localities in western France: Chatelaillon, Charante Maritime and Pointe de Grave, Gironde (Lhomme, 1951).

Pelham-Clinton (*in litt.*) points out that according to Traugott-Olsen & Nielsen (1977), it appears to be univoltine, with adults in July and August, whereas the date of my captures suggest that it is probably double brooded. The early stages are unknown, but we hope to investigate these in 1983. Traugott-Olsen & Nielsen (1977) figure the imago (in colour), neuration and genitalia; however, as this work may not be readily available, I append the following brief description from my own specimens.

Wingspan 8mm. Head whitish grey. Antennae light grey ringed with fuscus at joints. Thorax black with terminal grey triangular patch. Abdomen black. Forewings white irrorated with scattered grey scales. All markings grey with a marked ochreous tinge which is the chief feature superficially of this species. The basal patch is well developed and linked to the broad median band by a faint central line. Apically the costal area is of ground colour above a triangular tornal wedge with a darker central spot. Apical cilia ochreous with dark fuscous tips and scattered spots. Tornal cilia longer and light grey. Hind wings dark grey with long paler cilia.

#### Acknowledgements

My thanks are due to Mr. Pelham-Clinton for his help and advice and to Dr. Bradley for making the comparison with BMNH material.

#### References

- Lhomme, L., 1951. *Catalogue des Lepidopteres de France et de Belgique*, 21: 850.  
Traugott-Olsen, E. & Nielsen, E. Schmidt, 1977. *The Elachistidae of Fennoscandia and Denmark*, 117, figs. 104, 105, 206, 349, 350, 469.

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## ON THE PALATABILITY OF BUTTERFLIES

TORBEN B. LARSEN\*

It is well known that some butterflies are distasteful to certain predators. Such species are called aposematic and in many cases display warning colouration. Many of them are models in complexes of Batesian mimicry where they are copied by palatable species. Some common patterns of warning colouration are also included in complexes of Müllerian mimicry where aposematic species from many different groups such as butterflies, moths, beetles and grasshoppers share a basic colour scheme.

This method of passive defence appears to have been developed in response to predation by visually hunting, warm-blooded vertebrates such as birds and small mammals. The nature of the warning colours and patterns indicate predators with acute eye-sight and colour vision. My own observations and other anecdotal evidence indicates that lizards are not deterred by species which by common consent are aposematic. Praying mantises and spiders are certainly not deterred.

Such predators might reasonably be expected to share – at least partially – the likes and dislikes of the human palate. I therefore decided to test the relative palatability of butterflies during a trip through Africa in July 1982. The procedure adopted was as crude as it was direct. After killing the butterfly with a collector's pinch, I bit off the inner part of the wings and masticated the body for one minute, ensuring that it was completely minced up and well distributed on tongue and palate. The taste was evaluated on a subjective scale between 0 and 5. The lowest score indicated an agreeable or neutral taste, the highest the point at which the taste was so bad that the experiment would have had to be cut off before the full minute had elapsed. The results are summarised in table 1.

None of the species tested reached the top of my scale, but one specimen of *Danaus chrysippus* Linné nearly did so. In addition to a most unpleasant taste it left my lips noticeably blistered, thus curtailing further experiments that day. Two other specimens of *D. chrysippus* were less unpleasant, a worn specimen being only mildly distasteful. The species is known to vary in actual toxicity depending on the larval food plant and the extent to which the imago has ingested pyrrolizidine alkaloids from plants. *Acraea eponina* Cramer was pretty unpleasant with a distinct nauseous aftertaste; I could well imagine it to be emetic. *Acraea ranaionala* Boisduval was mildly distasteful and nauseous, *Pardopsis punctatissima* Boisduval even less so, but the latter species is very small compared to the others. The species so far mentioned are all generally supposed to be aposematic. This is not the case for *Junonia oenone epicicelia* Boisduval. It had a fresh, neutral flavour with no hint of an aftertaste. Some members of the Pieridae are suspected of being aposematic, i.e. members of the genus *Mylothris*. The three species which I tasted all had a pleasant sweet flavour which was

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Table 1 Palatability of butterflies tasted in Ethiopia and Madagascar, July 1982.

Species	Locality	Palatability*
PIERIDAE		
<i>Mylothris ?phyleis</i> Boisduval	Madagascar, Majunga	0
<i>Anaphaeis creona severina</i> Stoll	Ethiopia, Upper Omo	0
<i>Catopsilia florella</i> Fabricius	Ethiopia, Upper Omo	0
NYMPHALIDAE		
Danainae		
<i>Danaus chrysippus</i> Linné	Madagascar, Majunga	1
<i>Danaus chrysippus</i> Linné	Madagascar, Majunga	4
<i>Danaus chrysippus</i> Linné	Ethiopia, Upper Omo	2
Nymphalinae		
<i>Junonia oenone epiclelia</i> Boisduval	Madagascar, Tamatave	0
Acraeinae		
<i>Acraea eponina</i> Cramer	Madagascar, Mahajunga	3
<i>Acraea ranavalona</i> Boisduval	Madagascar, Tamatave	2
<i>Pardopsis punctatissima</i> Boisduval	Madagascar, Tamatave	1

\* 0 = fresh or pleasant taste.

5 = very distasteful; almost impossible to masticate for a full minute.

lacking in the *Junonia*, but the sweet flavour might be somewhat overwhelming for a smaller predator. As I was on a tightly scheduled business trip, I did not dare risk actually ingesting any of the specimens to test gastric reactions.

It is interesting to note that this crude experiment yielded results in accord with a priori expectations. I had actually expected the specimens of aposematic butterflies to have tasted worse than they did, but it must not be forgotten that most predators of butterflies have a body weight less than a thousand times that of a human being; this could magnify the effect considerably.

**RHYACIA SIMULANS HUFN. AND MONOCHROA PALUSTRELLA DOUGLAS TAKEN AT RYE HARBOUR, SUSSEX.** - Single specimens of these two species were taken in a Robinson trap in 1982 by Mr Richard Knight, warden of the Rye Harbour Nature Reserve. The *R. simulans* is dated 18.vii.82 and is in my collection. The *M. palustrella* was identified by J. M. Chalmers-Hunt. - M. W. F. TWEEDIE, Barn House, Rye, Sussex.

**THE WHITE-LETTER HAIRSTREAK: STRYMONIDIA W-ALBUM KNOCH IN CO. DURHAM.** - It is of interest to record that in 1982 this butterfly crossed the Tees to set up house in vice county 66. Although the colony is in the new County of Cleveland, we still count it as having reached Durham for the first time. - T. C. DUNN, The Poplars, Durham Road, Chester-le-Street, Co., Durham.

NOTES ON SOME SPRING HETEROCERA FROM THE  
PYRÉNÉES ORIENTALES

By B. GOATER\*

So much has been written in the British entomological journals about the butterflies of the European mainland, and so little about the moths, that it is thought the following brief encounter with the Heterocera of the eastern Pyrenees during April, 1981, might be of some interest. The period April 12th – 23rd was spent in the hamlet of St. Marsâl, some 30km. SW of Perpignan, in the foothills due north of Amélie-les-Bains Palalda, and overlooked from the NW by the snow-capped peaks of Mont Canigou (2785m). Most of the entomological work in the eastern Pyrenees seems to have been done on the other side of Canigou, around Vernet, and so it was with only a limited idea of what to expect that we set out to explore the region. The hillsides between St. Marsâl and Amélie are densely covered with *Quercus ilex* forest; there is a grove of cork oak (*Q. suber*) a short way from the village, which was the scene of several nocturnal operations, and an endless expanse of rocky hillside dominated by broom (*Cytisus scoparius*) and tree heath (*Erica arborea*). It was too early in the season for one with no previous experience of the flora to do any serious botanising. Most of the soil was acidic, but there was an attractive outcrop of basic rock halfway down the hill towards Amélie, which was tried on two nights in rather cold conditions.

To begin with, the weather was fine and the nights, though cool, were yielding something like 30 species of moth each night. Unfortunately it deteriorated, with gales, heavy rain and sleet, and the second week proved almost useless from the entomological point of view, and not at all what I had expected of the south of France!

The moths were interesting in three particular respects. First, in the local forms of species represented in Britain: many of them were larger, sometimes considerably so, and paler; secondly, in the telescoping of the season, so for example, *Alsophila aescularia*, *Drymonia ruficornis* and *Minucia lunaris* could be present together on the sheet; and thirdly, of course, in the species which were entirely new to our eyes – *Dicranura (Exaereta) ulmi*, *Hyphoraia aulica testudinaria*, *Valeria jaspidea* and *Spudaea ruticilla*, for example.

In the list which follows, all species are from St. Marsâl unless stated otherwise. The sequence and nomenclature are in accordance with Leraut (1980).

*Periclepsis cinctana* D. & S. One by day, 12.iv.

*Xerocnephasia rigana* Sod. One by day beside the river at Vinca, to the north of the massif.

*Ancylis unguicella* L. Fairly common by day on open hillside: a large grey form.

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*Eucosma cumulana* Guen. One on calcareous grassland by day, above the R. Dordogne near Souillac.

*Phtheochroa rugosana* Hbn. One at light, 19.iv.

*Pyrausta cespitalis* D. & S. Few by day on open hillside.

*Epicnaptera suberifolia* Dup. One at light, 13.iv.

*Aglia tau* L. One male seen and netted by day in the mountains near Finestret, to the north of St. Marsàl, and a female at light soon after dusk on 19.iv.

*Cilix glaucata* Scop. One at light, 23.iv. A little bluer than the English form, especially on the hindwings, which are less strongly marked.

*Thyatira batis* L. One at light, 13.iv. Larger than English form.

*Polyploca ridens* F. Two worn specimens at light, 18.iv.

*Alsophila aescularia* D. & S. Several at light during first week; much larger than English form.

*Iodis lactearia* L. One at light, 13.iv.

*Cyclophora puppillaria* Hbn. One at lights at motorway service station near Perpignan, 11.iv.; female at light among holm oaks, 13.iv., from which a series bred.

*Cataclysmis dissimilata* Rambur. One at light, 19.iv.

*Xanthorhoe fluctuata* L. Few at light; a contrasting, black and white form.

*Anticlea badiata* D. & S. Few at light in first week; very much larger than English specimens.

*Nebula tophaceata* D. & S. One at light, 19.iv.

*Horisme vitalbata* D. & S. Singles at light, 13 & 18.iv. A little larger and darker, less ochreous, than English specimens.

*H. tersata* D. & S. One at light, 19.iv.; less ochreous than English specimens.

*Eupithecia centaureata* D. & S. One at Perpignan motorway service station, 11.iv.

*E. distinctaria* H.-S. Two at light, 13.iv.

*E. abbreviata* Steph. Common at light; variable, but all strongly marked with black.

*Gymnoscelis rufifasciata* Haw. One at light, 12.iv., one on 15.iv.

*Chloroclystis v-ata* Haw. Two at light, 13.iv.

*Chesias rufata cinereata* Staud. Several at light; a very distinctive subspecies, very dark and uniformly coloured, except for a conspicuous pale streak running from disc to apex of the forewing.

*Minoa murinata* Scop. Seen occasionally by day on the hill-sides.

*Acasis viretata* Hbn. One at light, 13.iv.

*Bichroma famula* Esp. A single male specimen, which bears a superficial resemblance to the much commoner *Ematurga atomaria*, was netted by day flying amongst broom.

*Isturgia limbaria* F. Frequent flying by day amongst broom in sunshine.

*Petrophora narbonea* L. = *partitaria* Hbn. Several at light near the outcrop of basic rock between St. Marsàl and Amélie.

*Pachynemedia hippocastanaria* Hbn. Several at light during the early part of the holiday; large specimens.

*Opisthograptis luteolata* L. A few at light; unremarkable, though perhaps rather lightly marked.

*Selenia denitaria* F. Several at light; large and pale.

*S. lunularia* Hbn. One male at light, 13.iv.

*Lycia hirtaria* Clerck. Several at light; variable, but always grey, lacking the rich fulvous hue of English specimens.

*Biston strataria* Hufn. A few at light; pale.

*Agriopsis marginaria* F. One at light, 16.iv. — the only moth in the trap, on a cold, windy night.

*Menophra abruptaria* Thunb. Several at light; paler and less ochreous than English specimens; one melanic, more clearly marked and of a different tone of brown than the form from London.

*Cleora cinctaria* D. & S. One at light, 13.iv.

*Ematurga atomaria* L. Fairly common on hillsides; variable, bright and well marked. Males only seen.

*Aleucis distinctata* H.-S. One of the commonest moths at light; all worn.

*Campaea honoraria* D. & S. Three males at light on 13.iv. were the only ones seen: one pinkish, one buff, and one olive coloured.

*Gnophos mucidarius* Hbn. Fairly common at light.

*Macroglossum stellatarum* L. One seen flying in brilliant sunshine at Argèles-sur-Mer, 17.iv.

*Hyles lineata* F. Two at light, 12.iv, and four on 13.iv.

*Cerura vinula* L. One at light, 15.iv.

*Stauropus fagi* L. Two males at light, 13.iv; very like typical English specimens.

*Dicranura ulmi* D. & S. One at light, 12.iv.

*Peridea anceps* Goeze. One at light, 12.iv.

*Drymonia ruficornis grisea* Turati. Frequent at light; all but one were of a dark grey form: this would have passed muster in a series of English specimens.

*Harpyia milhauseri* F. A perfect male found resting on a wall beside the trap at dawn on 15.iv. The night had been cold and clear, and the trap contained very little.

*Ptilodontella cucullina* D. & S. One at light, 15.iv.

*Thaumetopoea pityocampa* L. Nests of larvae common and conspicuous on small pines along the ridge known as Col Paloumère.

*Euproctis chrysorrhoea* L. Nests of small larvae found on *Crataegus* and *Prunus spinosa*.

*Hyphoraia aulica testudinaria* Geoff. A male of this attractive small arctiid came to light on 12.iv. Several 'woolly bear' larvae were found sunning themselves on the hill and gathered in; most were parasitised, but two produced females of this species.

*Diaphora mendica* Clerck. Several at light.

*Nola confusalis* H.-S. Several at light among holm oaks; a large, well marked form.

*N. thymula* Mill. One at the Perpignan motorway service station lights, 11.iv.

*Agrotis segetum* D. & S. One at light, 13.iv.

*A. vestigialis* Hufn. Two very large specimens, a male and a female bred from larvae unearthed from the sand at Argelès-sur-Mer.

*A. trux* Hbn. One male bred from a larva dug up at Argelès-sur-Mer.

*Noctua pronuba* L. Three at light, 13.iv.

*Lycophotia molothina occidentalis* Bellier. One at light, 19.iv.

*Cerastis rubricosa* D. & S. Fairly common at light; greyer than the English form.

*Discestra pugnax* Hbn. = *treitschkei* Boisd. One at light near the outcrop of basic rock between St. Marsâl and Amélie, 19.iv.

*Egira conspicillaris* L. Fairly common at light; males steely grey, except for one ab. *melaleuca* View.

*Orthosia cruda* D. & S. A few at light; smooth and pale, almost unmarked.

*O. miniosa* D. & S. One at light, 12.iv.

*O. stabilis* D. & S. Few at light, 12.iv.

*O. incerta* Hufn. Few at light; pale forms.

*O. gothica* L. Fairly common, but mostly worn; very large, bright specimens.

*Mythimna albipuncta* D. & S. One fresh specimen at light, 14.iv.

*M. l-album* L. One at light, 19.iv.

*Cucullia thapsiphaga* Treits. One at light, 12.iv.

*Lithophane ornitopus* Hufn. Two at light, 12.iv.

*Xylocampa areola* Esp. Fairly common at light; also found at rest; very grey compared to English specimens.

*Valeria jaspidea* de Vill. Fairly common at light.

*Jodia croceago* D. & S. One at light, 12.iv.

*Conistra vaccinii* L. Few at light; extremely large, poorly marked specimens quite unlike the English form.

*C. staudingeri* de Graslin. A few at light; an extremely variable series bred from a female having a strong superficial resemblance to *C. rubiginea* D. & S. (*vide* Goater, *Ent. Rec.*, 94: 188-190).

*C. erythrocephala* D. & S. One at light, 12.iv.

*Spudaea ruticilla* Esp. By far the commonest noctuid at light, and very variable.

*Colocasia coryli* L. Several at light; outer half of forewing darker grey than English specimens, lacking white.

*Acrionicta euphorbiae* D. & S. A few at light; found fairly commonly at rest on tree trunks in rain, 22.iv. All specimens pale grey.

*A. rumicis* L. One at rest on a tree trunk, 22.iv.

*Phlogophora meticulosa* L. One at light, 13.iv.

*Actinotia hyperici* D. & S. One at light, 13.iv.

*Caradrina clavipalpis* Scop. One at light, 12.iv.

*Nycteola revayana* Scop. Common at light near *Quercus*; variable.

*Autographa gamma* L. One at light, 13.iv.

*Minucia lunaris* D. & S. Common at light; variable.

*Autophila cataphanes* Hbn. One worn specimen at light, 15.iv.

The writer wishes to express his gratitude to M. Meynèris, mayor of St. Marsâil, for permission to collect in the district, and to the staff at the British Museum (Natural History) for assistance in identification of some of the species.

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NOTES ON CERTAIN ANASIMYIA AND PARHELOPHILUS SPP. (DIPT.: SYRPHIDAE) IN WEST KENT, BUCKS., ETC. — The recent splitting of *Anasimyia transfuga* auct. into two species (see Stubbs, 1981, *Proc. Trans. Br. Ent. Nat. Hist. Soc.*, 14: 10-11) caused me to re-examine more critically the two specimens in my collection standing as the above species, when it became apparent that they in fact comprised both. This redetermination, duly confirmed by Dr. Martin Speight, entails the correction of a published record: under *Helophilus transfugus* L. in Chandler, 1969, *The Hoverflies of Kent*: 190, my record for Higham Marshes must be transferred to the other species, *A. contracta* Torp & Claussen. (The same may well apply to others of the few Kent records of *transfuga* (*l.c.*) — decidedly the more scarce of the two in Britain — especially as Mr. Stubbs has seen West Kent material of *contracta* in the BMNH as well as *transfuga* from both vice-counties.) My example of the true *A. transfuga* was taken at a weedy field ditch near Langley, Bucks., in late May or early June 1939, and may furnish a new county record since Buckinghamshire is not among the counties listed for it by Stubbs (*l.c.*:10).

As *A. lineata* F. and *Parhelophilus versicolor* F. both seem uncommon or very local in Kent, especially inland (cf. Chandler, *l.c.*), I may mention that both occur on the same ground at the edge of the lake in Danson Park, Welling, quite near here; *lineata* widely and commonly, *versicolor* narrowly and more sparingly. I have also a Herts. record of the latter: Lea Valley, Cheshunt, between a flooded gravel pit and an offshoot of the Lea, in 1940 and subsequently. — A. A. ALLEN, 49 Montcalm Road, Charlton, London SE7 8QG.

PHYLLONORYCTER ROBORIS ZELLER IN SURREY. — During a visit with Richard Fairclough on 15th May 1982, to Friday Street, Wooton, amongst other *Phyllonorycter* species swept from the Bilberry was a single *P. roboris*, which I understand has not previously been recorded from Surrey. The weather was exceedingly sultry and humid which may have brought the insects out of the Oak cover in such profusion, as R. L. F. revisited the site a few days later during more normal weather conditions and found few moths and no *P. roboris*. — N. F. HEAL, Fosters, Detling Hill, Nr. Maidstone, Kent.

OBSERVATIONS ON THE LEPIDOPTERA OF  
GHAR DALAM (CAVE), MALTA

G. ZAMMIT-MAEMPEL, M.D.\*

The aim of this note is to record the Lepidoptera encountered in a Maltese cave (Ghar Dalam) during a bi-monthly biological survey of the site carried out by the author over a period of twenty nine months (Sep. 1979-Feb. 1982) and to give some observations on the habits of these moths.

Ghar Dalam is a natural water-worn cave in the form of a long phreatic tube in the Lower Coralline Limestone in S. E. Malta. It lies about 250m from the coast and stands 15.40m above sea level. Its only entrance is a natural arched opening (8.40m wide x 2.55m max. height), faces S. W. and stands 6.1m above a valley bed which it overlooks. The cave is a tourist attraction and is visited by twenty to twenty-five thousand people annually. Except for the outermost few meters and the innermost section inaccessible to the general public (over 56m), the cave is artificially lit by electric bulbs. Ventilation is by diffusion and smoking is not allowed inside the cave.

The moths recorded from Ghar Dalam throughout the stated period are: *Agonopteryx thapsiella* Z. (Oecophoridae), *Hypena obsitalis* Hbn. (Noctuidae), *Proterospastis merdella* Z. (Tineidae), *Tinea murariella* Staudinger (Tineidae) and another (different) Tineid species that was accidentally lost prior to identification. The microlepidoptera were never seen on the wing but were collected as larval cases and subsequently matured into adults in captivity. They were all associated with spiders' webs lying up to two meters within entrance and about 1.5m beneath it.

*Agonopteryx thapsiella* Z.

These moths were originally classified in *Depressaria* (Oecophoridae). Their distribution includes Europe and North Africa with common records from Sicily, Malta and Morocco. There are no previous records of its capture from Ghar Dalam, where the author found the species periodically common, though not so numerically abundant as *Hypena obsitalis* Hubn. (Noctuidae).

*A. thapsiella* was most common in the innermost regions of the unlit cave recess on right at about 77m from entrance (Section IV). On one occasion in late May 1980, six specimens of this species were noted resting on ceiling and on adjoining ledge in an area less than 1 sq. meter. Isolated specimens and groups of two or three were also observed in another cave recess in Section II and on ceiling of the well-lit Section IV (about 61m from entrance). One dead specimen was found entrapped in a spider's web beneath cave entrance (Section I) in September 1980.

\*53 Main Street, Birkirkara, Malta.

Stationary moths showed a particular preference for the *horizontal* position – being found on ceiling and ledges rather than on walls. With wings folded over body, they presented a bullet-shaped outline (conical anterior end, a relatively narrow rounded body with almost parallel wing edges and a blunt posterior end). With its characteristic longitudinal rows of light blackish grey mottling on the greyish white wings, *Agonopteryx thapsiella* is extremely difficult to spot on the pitted Lower Coralline Limestone bedrock of the cave. The moths were not easily disturbed by the author's strong light or by the stream of visitors' heads passing about 45cms beneath them in Section V. Unlike *Hypena obsitalis* (the commonest moth inside the cave), *Agonopteryx thapsiella* was rarely noted on the wing unless disturbed. Though the species is known to feed on bat detritus, none of the Ghar Dalam specimens were noted feeding on any discernable bat droppings. Bats were formerly common in the cave (Despott 1916 p. 268; Baldacchino 1935 p. xix), but in the last decade there has been only one sighting reported (a "small species", ?*Pipistrellus*) in 1980.

In captivity, *A. thapsiella* seems to be able to withstand prolonged periods without food, for one specimen caught from the innermost region of Section IV (about 76m from entrance) and placed in a 25mm x 13mm hermetically sealed plastic tube on May 22nd 1980 – and forgotten – was still alive five weeks later when it was set. The species is bivoltine in May-June and Nov.-Jan. (Valletta, 1973). Its main host plant is recorded by Hannemann (1953) as being *Thapsia garganica* L. (Umbelliferae), hence its specific name '*thapsiella*'. This plant, however, is not endemic in the Maltese Islands and the moth's larva feeds instead, on the fennel plant, *Foeniculum vulgare* L. (Valletta, 1973, p. 85), an Umbellifera which is very common locally and which flowers from late spring to early autumn (Lanfranco, 1959 p.12).

### *Hypena obsitalis* Hbn.: Bloxworth Snout

The capture of this moth from Ghar Dalam was first recorded by Caruana Gatto (1905 p.20). In Malta, the species is very common and is found on the wing almost all the year round, being encountered in caves, cellars, basements, thick foliage and shady places. The species is extremely variable in colour, being encountered in light shades and very dark brown (almost black) (Caruana Gatto, 1905 p.21). Though both light and dark shades were found at Ghar Dalam, the predominant variety was the dark one.

*H. obsitalis* is the commonest moth inside the cave, but its numbers seemed to vary considerably from month to month. In spite of their negative phototropism – seeking darkened cavities and dimly lit cave branches – no specimen was ever encountered in the innermost cave system (beyond 79m from entrance) where darkness is permanent.

Unlike *A. thapsiella*, *H. obsitalis* showed a particular preference for the *vertical* stationary position by alighting on walls rather

than ceilings or ledges, and specimens were not as rare on the wing without being disturbed (esp. in May 1980). In the resting position, the wings of *obsitalis* are held on a level plane and give the moth the appearance of a flat, dark, equilateral triangle.

During a survey of the cave fauna carried out by the author on September 22nd, 1979, it was found that a drastic measure (Sheltox spray) had just been used by an amateur collector to down an elusive insect in the inner recess of Section IV. This probably had the effect of shifting the *Hypena* population of the cave towards the entrance or outside it in search of purer air, thereby possibly turning the animals victims of ?bat activity at night. This was suspected (in spite of the apparent absence of bat sightings) on the basis of the findings during a subsequent survey of the cave, carried out fifteen days later. On this particular occasion only one living *Hypena* was spotted in the entire cave system. In addition, there was one intact dead *Hypena* moth and the detached wings of fifty five separate individuals of the same species lying on a rock ledge 2m x 1m at a distance of 6m from entrance (about 70m from site of "crime"). No wings of *A. thapsiella* were detected amongst the remains, but the abdominal case and feet of two *Thorectes intermedius* Costa were associated with the *Hypena* wings.

This unusual phenomenon is very suggestive of bat activity, and is somewhat analogous to what Jane Wilson (1970:67) describes in her "Cave ecology in the Himalaya". Willson records that bats returning at dawn would enter the cave and land to crunch their catches from which pieces of beetle elytra and the like fell below. Their meal finished, each bat would fly deeper into the cave to roost for the day. She concludes by saying that this behaviour must be common among cave roosting insectivorous bats, as many of the caves had piles of legs and wings just inside entrance.

The above-mentioned two moths were the only ones actually seen on the wing inside the cave. The presence of microlepidoptera, however, is also ascertained on the basis of the finding of several different, small larval cases (at least three different species involved), suspended from spiders' webs in Section I. Only three of the cases bore larvae. One, a small, cylindrical, straw-coloured case (coll. 13/8/79), bore a white translucent larva with a black encircling band about 1mm posterior to the deep orange head. This specimen was accidentally lost (23/8/79) before maturing into an adult to render identification possible. The other two cases both matured into adults whilst lying in storage and were subsequently identified by Dr. Gaden S. Robinson (BMNH). The large lead-coloured spindle-shaped case with a characteristic equatorial constriction, a knobby and pitted surface (coll. 11/7/79) matured into a female *Proterospastis merdella* Z. The larval case of this moth was, prior to its discovery by the author at Ghar Dalam, completely unknown to science. (Zammit-Maempel, 1981). The small fluffy, subcylindrical, greyish-brown case (coll. 27/1/81) matured into a female *Tinea murariella* Staudinger. None of these microlepidoptera is listed in Robinson's monograph (1981) on the Tineid moths associated with caves.

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AN OLD UNPUBLISHED RECORD OF BEMBEZIA CHRYSIDIFORMIS ESP. (FIERY CLEARWING) IN DORSET. — In the course of perusing a photocopy of the late Rev. H. S. Gorham's collecting diaries, kindly sent me a few years ago by Mr. J. Cooter, I was greatly surprised at the entry for 15.vii.1869 (he was staying at Weymouth at the time): "Walked to Portland Bill saw Trochilium chrysidiforme". Our Editor confirms that the species is quite unknown from that part of England, being long thought to be practically confined to Folkestone Warren. The question arises whether Gorham could have been mistaken, and why he apparently never published his sighting. Though primarily a coleopterist, he was as the diaries show a competent observer (if not collector) of other Orders, and thus a mistake over so distinctive a species is hardly conceivable. It is, I suppose, remotely possible that he wrote *chrysidiformis* in a momentary aberration for e.g. *ichneumoniformis*, and it must be admitted that the entry shows no awareness of the outstanding interest of the record. At all events I give it for what it may be worth. — A. A. ALLEN.

## FURTHER RECORDS OF SCOTTISH AGROMYZID FLIES (DIPTERA: AGROMYZIDAE)

By K. P. BLAND\*

The distribution of the phytophagous diptera of the family Agromyzidae in Scotland is still little known in spite of Kenneth Spencer's excellent keys to this group (Spencer, 1972, 1976). The following records are the result of rather casual collecting and breeding over the last 4 years. I have previously reported a few records of Agromyzids from Scotland (Bland, 1977). Those species marked with an asterisk(\*) are not mentioned as Scottish by Spencer (1972) or Bland (1977):

*Agromyza abiens* Zetterstedt, ex *Echium vulgare* L. (coll. as larvae 29.x.77, em. 9.v.78); Yellow Craigs, EAST Lothian (O.S. NT/5185).

\**Agromyza myositidis* Kaltenbach, ex *Myositis* sp. (coll. as larvae 12.xi.77, em. 10.v.78); Crichton Glen, MIDLothian (O.S. NT/3761).

*Lirionomyza strigata* (Meigen), ex *Senecio jacobaea* L. (coll. as larvae 9.viii.81, em. 29-30. viii.81); Hartside, BERWICKSHIRE (O.S. NT/4753).

*Paraphytomyza discrepans* (Wulp), ex *Artemisia vulgare* L. (coll. as larvae 27.viii.77, em. 22.ix.77); Bawsinch, Duddingston, EDINBURGH (O.S. NT/2872). Host previously unknown.

\**Paraphytomyza populicola* (Haliday), ex *Populus nigra* L. (coll. as larvae 17.ix.79, em. 25.iv - 5.v.80); Merchiston, EDINBURGH (O.S. NT/2371).

\**Paraphytomyza similis* (Brischke), ex *Succisa pratensis* Moench. (coll. as larvae 10.x.79, em. pre-iii.80); Dall, Rannoch, PERTSHIRE (O.S. NN/6057).

*Napomyza scrophulariae* Spencer, ex seedheads of *Digitalis purpurea* L. (coll. 24.ix.77, em. 26-29.ix.77); Pentland Hills, MIDLothian (O.S. NT/1861).

*Phytomyza aprilina* Goureau, ex *Lonicera periclymenum* L. (coll. as larvae 13.v.80, em. 23.v.80); Methven Wood, Almondbank, PERTSHIRE (O.S. NN/0526). Ex *Lonicera periclymenum* L. (coll. as puparia 14.viii.81, em. 28.viii.81); Craighall Gorge, Blairgowrie, PERTSHIRE (O.S. NO/1748). Ex *Symphoricarpos rivularis* Suksd. (coll. as larva 21.vi.80, em. 24.vi.80); Corstorphine, EDINBURGH (O.S. NT/2073).

\**Phytomyza autumnalis* Griffiths, ex *Cirsium arvense* (L.) Scop. (coll. as larvae 9.vi.81, em. 22.vi.81); Blackford Hill, EDINBURGH (O.S. NT/2570). Ex *Cirsium arvense* (L.) Scop. (coll. as larvae 21.vi.80, em. 24.vi.80); Corstorphine, EDINBURGH (O.S. NT/2073).

\**Phytomyza calthophila* Hendel, ex *Caltha palustris* L. (coll. as larva 13.vii.81, em. 3.viii.81); Isle of Coll, MID EBUDES (O.S. NM/1758).

\*35 Charterhall Road, Edinburgh EH9 3HS.

*Phytomyza chaerophylli* Kalténbach, ex *Torilis japonica* (Houtt.) (coll. as larvae 12.xi.77, em. 3.iv.78); Crichton Glen, MIDLOTHIAN (O.S. NT/3761). Ex *Torilis japonica* (Houtt.) (coll. as larvae 3.xii.77, em. 13.iv.78); Longyester, EAST LOTHIAN (O.S. NT/5665). Ex *Angelica sylvestris* L. (coll. as larvae 3.vii.81, em. 27.vii.81); Whitlaw Mosses, ROXBURGHSHIRE (O.S. NT/5129).

*Phytomyza crassiset*a Zetterstedt, ex *Veronica chamaedrys* L. (coll. as larvae 10.ix.77, em. iv.78); Crichton Glen, MIDLOTHIAN (O.S. NT/3961). Ex *Veronica chamaedrys* L. (coll. as larvae 22.x.77, em. 10-11.iv.78); Traquair, PEEBLES SHIRE (O.S. NT/3335).

\**Phytomyza cytisi* Brischke, ex *Laburnum anagyroides* Medic. (coll. as larvae 19.vi.80, em. 24.vii.-6.viii.80); Blackford Hill, EDINBURGH (O.S. NT/2570).

\**Phytomyza hendeli* Hering, ex *Anemone nemorosa* L. (coll. as larva 19.vi.77, em. 10-12.iv.78); Finnart Wood, Rannoch, PERTHSHIRE (O.S. NN/5455).

*Phytomyza heracleana* Hering ex *Heracleum sphondylium* L. (coll. as larvae 12.xi.77, em. 4.iv.78); Crichton Glen, MIDLOTHIAN (O.S. NT/3761). Ex *Heracleum sphondylium* L. (coll. as larvae 8.viii.81, em. 31.viii.81); Hope, Pathhead, MIDLOTHIAN (O.S. NT/4062).

*Phytomyza horticola* Goureau (♂ Genitalia checked), ex *Senecio vulgaris* L. (coll. as larvae 19.vi.80, em. 3.vii.80); Blackford Hill, EDINBURGH (O.S. NT/2570). Ex "Hemp-nettle" (coll. as larvae 10.vii.80; em. 18.vii.80); Endrick Mouth, Loch Lomond NNR, DUMBARTONSHIRE (O.S. NS/4387). Ex *Taraxacum officinale* Weber. (coll. as larvae 8.vi.81; em. 22.vi.81); Grange, EDINBURGH (O.S. NT/2570). Ex *Ononis repens* L. (coll. as larvae 23.vi.81; em. 2.vii.81); Tantallon Castle, EAST LOTHIAN (O.S. NT/6084).

*Phytomyza ilicis* Curtis, ex *Ilex aquifolium* L. (coll. as puparia 16.iv.80, em. 11.v.80); Hermitage o' Braid, EDINBURGH (O.S. NT/2570).

The mines of this species can be seen on nearly every holly-bush in the south of Scotland.

*Phytomyza lonicerae* Robineau-Desvoidy [= *P. harlemensis* Weyenbergh], ex *Solidago virgaurea* L. (coll. as larvae 1.x.78, em. 24.iv.79); Craigroyston, Loch Lomond, STIRLINGSHIRE (O.S. NN/3501) – *Lonicera periclymenum* L. was abundant all around. Ex *Lonicera periclymenum* L. (coll. as larvae 29.vi.81, em. vii.81); Methven Wood, Almondbank, PERTHSHIRE (O.S. NN/0526). Ex *Lonicera periclymenum* L. (coll. as larvae 15.vii.81, em. 19-25.vii.81); Isle of Coll, MID EBUEDES (O.S. NM/2661).

*Phytomyza matricariae* Hendel, ex *Achillea millefolium* L. (coll. as larvae 27.vi.81, em. vii.81); Stanhope, Tweedsmuir, PEEBLES SHIRE (O.S. NT/1230).

*Phytomyza nigra* Meigen, ex Gramineae (coll. as larva 28.vi.80, em. 10.vii.80); Endrick Mouth, Loch Lomond NNR, DUMBARTONSHIRE (O.S. NS/4387). Ex Gramineae (coll. as larva 9.viii.81, em. 19.viii.81); Hartside, BERWICKSHIRE (O.S. NT/4753).

\**Phytomyza notata* Meigen, ex *Ranunculus repens* L. (coll. as larvae 9.vi.81, em. 29-30.vi.81); Blackford Hill, EDINBURGH

(O.S. NT/2570). Ex *Ranunculus repens* L. (coll. as larvae 28.vi.81, em.12-25.vii.81); Carllops, PEEBLESHIRE (O.S. NT/1555). Ex *Ranunculus repens* L. (coll. as larvae 12-17.vii.81, em. 1-8.viii.81); Isle of Coll, MID EBUDES (O.S. NM/2257, 2457, 2763). Ex *Ranunculus repens* L. (coll. as larva 1 viii.81, em.18.viii.81); Moorfoot Hills, MIDLOTHIAN (O.S. NT/3447). Ex *Ranunculus ficaria* L. (coll. as larva 14.vii.81, em. 3.viii.81); Isle of Coll, MID EBUDES (O.S. NM/2257). Ex *Ranunculus* sp. (coll. as larvae 14.vi.81, em.4.vii.81); Endrick Mouth, Loch Lomond NNR, STIRLINGSHIRE (O.S. NS/4290).

\**Phytomyza obscurella* Fallén, ex *Angelica sylvestris* L. (coll. as larvae 13.xi.77, em. 11-12.iv.78); Romannobridge, PEEBLESHIRE (O.S. NT/1547). Ex *Aegopodium podagraria* L. (coll. as larvae 8.vi.81, em. 7-8.vii.81); Blackford Hill, EDINBURGH (O.S. NT/2570).

\**Phytomyza periclymeni* de Meijere, ex *Lonicera periclymenum* L. (coll. as puparia 15.vii.81, em.2.viii.81); Isle of Coll, MID EBUDES (O.S. NM/2561).

\**Phytomyza petoei* Hering, ex *Mentha* sp. (coll. as larvae 12.xi.77, em. 16-18.iv.78); Blackford, EDINBURGH (O.S. NT/2571).

*Phytomyza primulae* Robineau-Desvoidy, ex *Primula veris* L. (coll. as larvae 20.x.79, em. 14.iv.80); Fairliehope, Carllops, PEEBLESHIRE (O.S. NT/1556). Ex *Primula vulgaris* Huds. (coll. as larvae 21.vi.80, em. 9.vii.80); Blackford, EDINBURGH (O.S. NT/2571).

\**Phytomyza sphondyliivora* Spencer, ex *Heracleum sphondylium* L. (coll. as larvae 8.vi.81, em. 29.vi.81); Blackford Hill, EDINBURGH (O.S. NT/2570).

\**Phytomyza tussilaginis* Hendel, ex *Petasites hybridus* (L.) Gaertn., Mey. & Scherb. (coll. as larva 9.vi.81, em. 28.vi.81); Blackford Hill, EDINBURGH (O.S. NT/2570).

\**Phytomyza virgaureae* Hendel, ex *Solidago virgaurea* L. (coll. as larvae 21.vi.81, em. 8.vii.81); Talla Reservoir, PEEBLESHIRE (O.S. NT/1420). Ex *Solidago virgaurea* L. (coll. as larvae 7.vii.81, em. 15-25.vii.81); Rannoch Moor NNR, PERTSHIRE (O.S. NN/4255).

*Cerodontha (Dizygomyza) ireos* (Goureau), ex *Iris pseudacorus* L. (coll. as larvae 13.vii.81, em. 31.vii.81); Arinagour, Isle of Coll, MID EBUDES (O.S. NM/2257).

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NOTES ON THE INCIDENCE, ETC., OF CERTAIN  
*CARABUS* SPP. (COL.) MOSTLY IN SOUTH-EASTERN  
ENGLAND

By A. A. ALLEN\*

The object of these notes is to follow up the interesting observations of Mr. D. R. Nash (1979, *Ent. Rec.*, **91**: 138-9) on two of our species, *Carabus monilis* F. and *C. nemoralis* Mull., in which he invites the comments of other coleopterists. Like him, I have always looked upon these two ground-beetles as decidedly scarce, particularly the former — despite indications to the contrary in most of the literature. Fowler (1887, *Co. Brit. Isl.*, **1**: 9) wrote of *monilis* “common and generally distributed in the middle and south of England. . .”, an estimate that would certainly call for revision to-day; for it seems not only to occur extremely sparingly (with occasional exceptions as exemplified below) but even to be virtually absent from quite large areas within its general range. This last point is well shown by Mr. Nash's finding that the beetle, while sporadic in N. E. Essex, appears not to occur in Suffolk except very rarely about Ipswich nor does it figure at all in the list of Coleoptera of the Isle of Wight (Newbery, n.d.). In the Oxford District list (Walker, 1907) it is given as rare, while (interestingly) *nemoralis* is “very common” and *violaceus* L. “much less common”. In the Windsor Forest list (Donisthorpe, 1939) *monilis* is stated to be rare, and *nemoralis* scarce.

I never saw *monilis* in all my years of collecting in the Blackheath district, S. E. London, nor does the late W. West appear to have met it when he worked the area in the late 19th and early 20th century. In the past 50 years it has occurred twice only to my knowledge in N. W. Kent: Farningham, one taken by my father under rubbish in a chalky spot and passed to me, iv.33; and Darenth wood, one in the late '40s or early '50s by my friend A.W. Gould (For mid and East Kent, see below.) On the northern fringe of London, one was brought to me from an air-raid shelter at Enfield, Middx., iii.42. On the present status of *monilis* in Surrey I have no information. In Sussex (at any rate the eastern vice-county) it is perhaps less uncommon; Mr. R. D. Dumbrell finds it not infrequently in his garden in the Eastbourne district, and it was in H. Dinnage's collection from Haywards Heath (ix.31), St. Leonards Forest<sup>1</sup> (vi.25), and Moulscombe (Cribb, ix. 54); also a very fine ♀ v. *consitus* from Deal (Cribb, v.25). Mr. L. S. Whicher used to find it in the garden of his parents' house near Petersfield, Hants, about the late '40s and early '50s. Further west, the sole example of *monilis* I have personally encountered was running across a road up which I was cycling at Stratton-on-Fosse, near Bath (vii.32); two years earlier one had

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<sup>1</sup>Taken from his record book; the specimen was not in his collection when I acquired it.

been sent to me from the same district, found under a stone on a grassy hillside. One was found running on a path near Llandudno, N. Wales (2.vii.71) by Mr. Chalmers-Hunt, who kindly brought it to me. I have the impression that it is perhaps more frequent in country gardens than elsewhere.

A few instances of the occurrence of this species in numbers are worth a mention; all but one, as it happens, relate to Kent. E. C. Rye, in an early volume of the *Ent. mon. Mag.* (ref. not to hand), reported it to be common along the edges of fields at or near Folkestone; in April 1920, J. J. Walker found "many hundreds" in flood rubbish from Sparsey Bridge, Water Eaton, Oxon. — a truly remarkable record; E. C. Bedwell once met with it in plenty at Tunbridge Wells climbing walls, fences, etc. after dark (collecting diary, entry for 23.v.26); and, far more recently, Mr. S. Bowstead (of Ormskirk) was told of its having been found in quantity on one occasion in 1969 running about on paths etc. at night, somewhere in the Maidstone district. Mr. E. G. Philp, despite much collecting in that area and farther east, has not seen it for a long period of years.

Turning now to *C. nemoralis*: the first I ever found was under a stone in a garden rockery at Pluckley, E. Kent, Aug. 1927 — the year that I began collecting Coleoptera; as it was badly damaged, I left it to its fate. Between 1929 and 1933 a few examples occurred in our garden at Blackheath, originally a damp field (drained in 1927); but I never saw it there after that, though *C. violaceus* continued to flourish. Farther south and east in Kent, Messrs. S. A. Williams and E. G. Philp report *nemoralis* as only sporadic in the Dartford and Maidstone areas respectively. On moving to the northern fringe of London (Cheshunt, Herts.) in 1940, I found this beetle a few times between then and 1946 (February) at night in the kitchen of my lodgings and once in the garden; but, so far as I remember, *violaceus* seldom occurred to me in that district. My other English captures of *nemoralis* include single examples from the Ridge Way below Hereford Beacon, under stone in thin woodland, viii.36; Wytham Wood near Oxford, on an open hillside, v.47; and (the latest) Bookham Common, Surrey, at foot of oak in woodland, iv. 62. Farther north, the picture may well be different. Mr. Bowstead informed me that this species is much the commonest *Carabus* in his area of S. W. Lancashire. As regards Scotland it should be noticed that Fowler's datum "Lowlands only" requires correction, both for *C. nemoralis* and for *Cychrus*, since both beetles are frequent in the Highlands also.

Interesting differences are detectable in the ecological preferences of the four *Carabus* species traditionally classed as general and common (excluding *granulatus* L. which is strongly hygrophilous; see further below). If we formulate three groups, two relating to macro- and one to micro-habitats, thus: more or less cultivated land, fields and gardens (a), woodlands, heath and moorland (b), under bark and in rotten wood (c), then, assigning the appropriate symbols to each species, we obtain the following: — *problematicus* Hbst., b, c; *violaceus*, a, b, c; *nemoralis*, a, b; and *monius*, a. It is hardly

surprising that the commonest species overall, *violaceus*, turns out to be the most eurytopic; while the least common, *monilis*, is the least so. Of course, collectors in distant parts of the country might not agree as to the preferences here indicated, but I think they will be found to hold good widely.

*C. granulatus* is another species that has become very much more local than it appears formerly to have been, and I have met with it only a few times: near Lulworth, Dorset, viii.30; Chilham and Godmersham, N. E. Kent, viii.31; occasionally in the New Forest; and a solitary specimen in the marshes of the Lea Valley near Cheshunt, v.40 – my sole capture anywhere near London, never repeated despite a further 8 years of constant collecting in the area. Farther out from the metropolis, however, I believe that the species still occurs in good numbers in suitable spots, though very locally. Its omission from the VCH list for Kent (Fowler, 1908) must surely be accidental, as Mr. Philp has pointed out. In my area of N.W. Kent it occurred under bark of willows (the most usual habitat) on the banks of the Ravensbourne at Catford in 1875 (West, "Woolwich Surveys"); these trees, or their offspring, still exist, but only an optimist would be confident of finding *C. granulatus* there to-day! According to the late Philip Harwood there are two races of this beetle in the New Forest: the normal one, gregarious and relatively small, occurring in the open along willow-lined stream banks etc.; and a larger, solitary, form living under bark of logs in the damp shady forest. I possess two of the latter; it is a very fine form or race apparently averaging 23 mm. in length, as compared with the average of 18 mm. for the normal form.

## Notes and Observations

MALLOTA CIMBICIFORMIS FALL. (DIPT.: SYRPHIDAE) ENTERING A TREE-HOLE: A SECOND KENT RECORD. — The sole known occurrence of this scarce Eristaline hover-fly in Kent appears to be a series of specimens caught in my former garden at Blackheath over a number of years (see Chandler, 1969, *Hover-flies of Kent*: 190). In Maryon Wilson Park, Charlton, on 5.vii.82, as I was watching the entrance to a water-filled cavity in the trunk of a balsam poplar, a female *M. cimbiciformis* suddenly appeared and entered the cavity which it proceeded to 'inspect'. It remained there barely a minute, during which — owing to the narrowness of the entrance — its exact movements could not be seen; if oviposition took place, the time taken to accomplish it was certainly brief. On the other hand, the conditions may have proved unsuitable. On issuing from the cavity it did not delay but flew straight off. It behaved just as did odd females of *Myiatropa florea* L. at the same tree on previous occasions — this being a typical oviposition site for that species. I am unaware of similar observations in the case of *Mallota*, though it is well known to develop in rotten wood (e.g. of elm). Nor have I otherwise seen the fly at Charlton, but as Blackheath is only a few miles away its existence at the former locality is not surprising. — A. A. ALLEN.

A SECOND RECORD IN BRITAIN OF PAMMENE AGNOTANA REBEL. (LFP., TORTRICIDAE). On the 25th April 1982 my son Alan and I spent some hours at the Fleam Dyke, Cambridgeshire. As the day was sunny and fairly warm, we hoped that *Eucosma pauperana* Dup. would find conditions good enough to tempt it to appear. However, at no time did we see one fly freely, though three were beaten out of the dense undergrowth.

Moths were more plentiful than usual on an April day, the species seen being, *Stigmella paradoxa* Frey, *S. dulcella* Hein. (these kindly determined by Col. A. M. Emmet), *Incurvaria masculella* D. & S., *Phyllonorycter oxyacanthae* Frey, *Parornix angelicella* Stt., *Caloptilia syringella* F., *Pseudoswammerdamia combinella* Hbn., *Agonopterix heracliana* L., *Pancalia leuwenhoekella* L., *Elachista rufocinerea* Haw., *Cosmiotes freyerella* Hbn., *Xanthorhoe spadicearia* D. & S., *Eupithecia dodoneata* Guen. The prize was a small dark Tortricid caught by Alan. As the only likely species was *P. agnotana* we went home rejoicing. This moth was put on the British list by the late Mr. F. M. Struthers when he caught a male on 15th April 1961 at Newlands Corner, Surrey. This specimen is now in the BM(NH) collection where I was able to see it in considering the identity of our capture. I am grateful to Dr. J. D. Bradley for confirming the identity of our moth by dissection. It is a female with a wing span of 12 millimetres. J. D. B. points out that this extends the size given by him and his fellow authors for this species in Vol. 2 of *British Tortricoid Moths* — R. FAIRCLOUGH, Blencathra, Deanoak Lane, Leigh, Surrey.

THE SWALLOWTAIL: PAPILIO MACHAON L. IN LANCASHIRE. — A live Swallowtail Butterfly was found by a nephew of one of the museum attendants in Farnworth, south of Bolton, on 5 August 1982. Judging by the pattern of the few scales remaining on the wings this insect is referable to the continental form. Although I know of no-one breeding this insect in the immediate area the most likely explanation is that it escaped from captivity rather than demonstrating the existence of a migrational movement of this species as far as the north of England. E. G. HANCOCK, Bolton Museum and Art Gallery, Le Mans Crescent, Bolton BL1 1SA.

CONOCEPHALUS DORSALIS (LATREILLE) (SALTATORIA: TETTIGONIIDAE) IN VC 34. — The only published record of *C. dorsalis* (Shortwinged Conehead) in the West Gloucestershire vice-county (VC 34), is an unusual one of two found in a suburban garden at Stoke Bishop, Bristol in 1962, as reported by J. F. Burton in his recent paper on the *Saltatoria* of the Bristol area and North Somerset (*Ent. Rec.* 93: 168). In September 1981, I found a single male on Sea Aster (*Aster tripolium*) along the bank of the R. Avon at Sea Mills, Bristol; and in late August and early September 1982, two females and a single male were located at the same site. This small colony is approx. one kilometre from Stoke Bishop where the previous two specimens were reported, and it seems likely that these originated from a salt-marsh colony on the bank of the tidal Avon. — R. H. POULDING, 76 Hill View, Henleaze, Bristol, Avon BS9 4PU.

COLEOPHORA RAMOSSELLA ZELLER IN KENT. — During the B.E.N.H.S. visit to Thornden Wood, Whitstable on 14th. June 1981, I noticed feeding signs of a *Coleophora* sp. on leaves of *Solidago*, but could find no trace of a case. Thinking it most likely to be a foodplant for *C. trochilella* Dup., I nevertheless made a note to make a follow-up visit during 1982, which I was able to do on 23rd May in the company of Philip Jewess, and we found eight cases. I decided to revisit the following day, and a more concentrated search produced several more cases. Without exception I found no more than one case per plant, each of which out of necessity was feeding upon the basal rosette of leaves, as the main stem had not then developed at such an early date. The larvae seemed to feed upon the most sickly stunted plants growing in almost a nil soil condition, as well as on the more luxuriant growth with equal relish. Some of the smaller leaves were almost totally consumed from numerous feeding positions, so that it must be a most active larva. The larvae fed up quickly on a potted plant, and the moths emerged between 26th June and 10th August, and Dr. J. D. Bradley very kindly confirmed their identification as *C. ramosella* by genitalia examination.

I was subsequently able to record the small first year cases on 11th September by which date they had been feeding for possibly 2-3 weeks, and an appropriate amendment can now be made to species number 515 in the B.E.N.H.S. *Field Guide to the Smaller British Lepidoptera*. I believe this species is only otherwise known in Britain from the West coast of Ireland. N. F. HEAL, Fosters, Detling Hill, Nr. Maidstone, Kent.

NOTABLE YORKSHIRE LEPIDOPTERA IN 1982. — Two species of macrolepidoptera were added to the Yorkshire list in 1982: *Trichoplusia ni* Hbn. and *Ennomos autumnaria* Werneburg. *T.ni* first occurred on 17.vii at Spurn, where one was taken by B. Spence; and I took a perfect specimen on 16.ix., at a lighted shop window in Selby. *E. autumnaria* was taken at light at Spurn on 17.ix.

Other interesting moths taken at Spurn by B. Spence in 1982 include *Euproctis chrysorrhoea* L., 9.vii; *Nola aerugula* Hbn., 9.vii (1), 10.vii(1); *Eilema complana* L., common 5.vii to 14.viii (Spurn is now its only known Yorkshire locality); *Mithymna vitellina* Hbn., 18.ix(1); *Rhyacia simulans* Hufn., common 14.vii to 10.viii, with one on 16.ix; *Spodoptera exigua* Hbn., 18.vii and 21.vii; *Parascotia fuliginaria* L., one worn 23.vii.

At Selby, I myself took several *R. simulans* in my garden in vii and early viii, all at buddleia bloom. I took a *Catocala nupta* L. at rest at Selby on 23.ix (the first I have seen in Yorkshire since the 1950s); another was taken this year by Dr. J. Marsden at Bursea, north-east of Howden. In April I found a larva of *Chloroclystis chloerata* Mab. near Selby, a new locality for this species. — S. M. JACKSON, 22, Armoury Road, Selby, N. Yorkshire YO8 0AY.

DIARSIA MENDICA F.: SMALL SQUARE-SPOT IN NOVEMBER. — Hardly a year goes by without at least one species of lepidoptera appearing well out of season, at m.v. light. In 1982 it was a male *D. mendica* in pristine condition, in the trap on November 5/6. — J. BRIGGS, Deepdale Close, Slackhead, Beetham, Cumbria LA7 7AY.

THE FIVE-SPOT BURNET: *ZYGAENA TRIFOLII* ESPER Ssp. PALUSTRIFLUA VERITY IN EAST KENT IN 1982. — *Zygaena trifolii* seemed to have disappeared from East Kent in recent years, so it was particularly pleasing to find this species on two Kent Trust for Nature Conservation reserves in June this year. The first was seen by John Duffield who was wardening the reserve, on 4 June, and the next day I found several freshly emerged specimens at the same site. None were to be found only a few days later, by which time the cocoons of *Z. lonicerae* Scheven were appearing high up on the grass stems. The first specimen of *lonicerae* was found, freshly emerged on 28 June. At another site, on 20 June, a very worn female burnet, almost certainly *Z. trifolii* was seen and photographed.

It will obviously be well worth looking for this species again, especially if we have another favourable spring and early summer in 1983, and it is interesting to speculate whether the appearance of these early five-spots might be related to the very warm weather experienced in May 1982. — M. A. ENFIELD, New Cottage, Warren Farm, Boughton Aluph, Ashford, Kent TN25 4HW.

CHLOROCLYSTIS DEBILIATA HBN.: BILBERRY PUG IN KENT. I note that J. M. Chalmers-Hunt in his *Butterflies and Moths of Kent*, Volume II, reports no record of this species in Kent since 1908 and then only from the Watlingbury area. I would therefore like to record that I bred two of this species on 7th and 11th June 1982, from two larvae collected by sweeping the Bilberry at Oldbury Hill, Nr. Ightham, Sevenoaks on 18th May 1982. — N. F. HEAL, Fosters, Detling Hill, Nr. Maidstone, Kent.

ORTHONEURA NOBILIS FALL. (DIPT.: SYRPHIDAE) IN W. KENT. — A small Syrphid which I swept in a shaded marshy spot in Maryon Wilson Park, Charlton, on 7 June last, turned out to be a male of this uncommon species. Chandler (1969, *The Hover-flies of Kent*: 171) gives three records only, all for the eastern vice-county, and notes that it is normally confined to extensive marshes. The present record thus seems likely to be a new one for West Kent and also for the London suburbs. The fly was accompanied by a male *Chrysogaster hirtella* Lw., the first I have met with in the district; *C. solstitialis* Fall. (stated to be very common) occurs sparingly in the same little area — I have seen it nowhere else near here — while *Orthonoeura splendens* Mg. is quite common there. This small group (the old genus *Chrysogaster sens. lat.*), said to be under-collected (Chandler, *l.c.*), is thus rather well represented at the spot, and others may possibly yet be found. Of them, *Lejogaster metallina* F. is the likeliest to turn up; it is not scarce in the district, having occurred at Blackheath (in my former garden) and more lately at Kidbrooke. At the Charlton locality these flies affect the flowers of goutweed or ground-elder (*Aegopodium podagraria*), but unfortunately the spot is so shaded as to receive little direct sunlight, making the flowers less attractive than they would otherwise be. Among the other flies found there this year (1982) which may be worth a passing notice are *Melangyna labiatarum* Verr. sparingly, *M. umbellatarum* F. (1 ♂), a hitherto unrecognized *Cheilosia*, and several *Empis grisea* Fall. (to mention only the less common species). — A. A. ALLEN.

ANDRICUS QUERCUSCALICIS BURGSDORF (HYMENOPTERA: CYNIPIDAE) IN EAST KENT V.C.15. — On August 25th Norman Heal and myself paused to examine the leaves of a small Pedunculate Oak growing in an area of marshland at Murston, near Sittingbourne, Kent (TQ 927648). Numerous unfamiliar gall formations were noticed at the apex of young acorns and these were subsequently identified as the 'Knopper Galls' of *A. quercuscalicis*. This would appear to be a new record for the vice county. — L. CLEMONS, 76, Tonge Road, Sittingbourne, Kent ME10 3NR.

SETINA IRRORELLA L. IN SOUTH HAMPSHIRE. — My recent observations of *Setina irrorella* L. on the Hampshire coast near Lymington may be of interest because they differ in several respects from those details given in *The Moths and Butterflies of Great Britain and Ireland* (Ed. J. Heath) Vol. 9, where it is stated the larvae feed exposed in sunshine, are difficult to see and the moth flies at the end of June.

In May 1981, I searched together with Mr. I. Farwell an area of shingle at the south end of a spit of land projecting some 2½ kilometres into the Solent for larvae of this moth which Mr. Farwell had previously seen around 1960. We quite easily found a number of larvae feeding exposed in light drizzle, approaching dusk. The larvae looked similar to small *Panaxia dominula* L. and were very conspicuous on the lichen covered stones, which form the shingle beach. They were feeding on a grey lichen which I believe to be *Verrucaria maura* (Wahlenb. ex. ACH) and in captivity steadily grazed the stones clean of lichen. The lichen is extremely hard and difficult to scrape off with ones thumb nail, some of the stones having the appearance of being covered in tar. Good size specimens of the moth were reared in early June.

In 1982 larvae were searched for in hot sunny weather on the 8th May and subsequently and none were found exposed. Lifting the stones, however, disclosed larvae and pupae in abundance, in one instance my son found six pupae under one house brick.

Some of these pupae which were collected produced specimens which were markedly smaller than those from the wetter spring of 1981. The moths were well on the wing by the 1st June and both sexes could easily be put up during the day over an area of a kilometre by 250 metres in extent, inspite of this being a popular tourist area where the shingle which forms their habitat is constantly trampled. — A. J. PICKLES, 2a Park Avenue, Lymington, Hampshire, SO4 9GX.

THE DEATH'S-HEAD HAWKMOTH: ACHERONTIA ATROPOS L. IN BURY, LANCS., 22 OCTOBER 1982. — A specimen of the Death's-head Hawkmoth was brought into Bolton Museum for identification a week after it had been found alive in Woodhill Street, Bury (NGR: SD (34) 7911). It would seem from this evidence that this insect is the progeny of a migrant earlier in the year. Other records of this magnificent moth represented by specimens in the museum collections are Bolton, 3 September 1903; 14 June 1907; 3 September 1956; 25 August 1964; Blackpool, 1912; Atherton, 13 September 1964. — E. G. HANCOCK, Bolton Museum and Art Gallery, Le Mans Crescent, Bolton BL1 1SA.

## FOURTH EUROPEAN CONGRESS OF LEPIDOPTEROLOGY. —

As was anticipated, the Ministry of Culture and the Biological Department of the Hungarian Academy of Sciences have approved the 4th European Congress of Lepidopterology to be held in Budapest during the Spring of 1984.

Dr. Lancelot A. Gozmany, Hungarian Natural History Museum, Baross utca 13, H-1088 Budapest, will serve as head of the local Committee in charge of the organisation of this international event, acting in close collaboration with SEL Council. Further announcements will keep the interested parties updated on the main themes and any other details dealing with this 1984 Congress.

Should you plan to attend the Budapest Congress, please write to Meetings Secretary, Dr. Miguel R. Gomez Bustillo, Torre de Madrid 5-12, Madrid 13, Spain. This means no obligation; data are needed to plan accommodations, etc. well in advance by the host authorities. A more detailed attendance form will be available later. — W. DE PRINS, Berchem, Belgium.

A MELANIC EARLY THORN: *SELENIA DENTARIA* F. IN WARWICKSHIRE IN 1982. — I was very pleased to find a chocolate brown, male *Selenia dentaria* F. ab. *brunnearia* Mansbridge, flying around a low street lamp in a small wood on the University of Warwick campus, on 25 April 1982. My thanks to the editor for his identification of this aberration. — M. F. HALSEY, 157 Tachbrook Road, Leamington Spa, Warwickshire, CV31 3EE.

FURTHER RECORD OF RHYACIA SIMULANS HUFNAGEL: DOTTED RUSTIC IN HAMPSHIRE 1982. — I took a specimen of this species at my actinic trap in the garden here on the night of 23rd July 1982. Bearing in mind the comments on the previous status of this species in Hampshire (in Goater, *Butterflies & Moths of Hampshire & Isle of Wight*), recent records would now appear to indicate encouraging evidence of this insect in the county. — J. W. PHILLIPS, 16 Grove Road, Havant, Hants.

THE DOTTED RUSTIC: RHYACIA SIMULANS HUFN. IN LINCOLNSHIRE. — I can unhesitatingly confirm Martin Townsend's note (*Ent. Record*, 94: 237) on the population explosion of this species in Lincolnshire. The first record of the species is, however, of a male taken by Geoffrey Wright in his garden four miles south of Louth on Aug. 6th. 1976. Martin Townsend's is the second. I know of no others until in 1981 I took two in my garden, a male at light and a female found very dead and desiccated but full of eggs, impacted in the spray-bar adaptor of my watering can. The eggs did not hatch.

In 1982, the first *simulans* appeared in my trap on July 1st. and thereafter there were ones or twos most nights. On Aug. 3rd. there appeared to have been a considerable irruption locally of *Vanessa atalanta* L. and *Cynthia cardui* L. and I decided to take my traps to the coast to see what other migrants were coming in. A M.V. trap placed on a high part of the dunes and plugged into the Warden's house at Saltfleetby was found at dawn to contain one *Agrilus convolvuli* L., sixty-eight *Autographa gamma* L. and three *Nomophila noctuella* D. & S., and amongst a host of non-migratory species

fifteen *simulans*, three of them females. A Heath actinic trap placed far out on the saltings held three male *simulans* and several more appropriate species such as *Agdistis bennetii* Curt. and *Eucosma tripoliana* Barr. An actinic trap placed on the landward side at the foot of the sand dunes produced three *simulans*, all males, a total of twenty-one for the night.

*Simulans* continued to visit the trap in my garden and the now fading flowers of *Kentranthus ruber* until early September. The total seen must have been at least fifty. — R. E. M. PILCHER, South Thoresby, Alford, Lincolnshire.

## Obituary

### DOUGLAS COTTRILL

Douglas Cottrill died peacefully in his home at Colyford, Devon on 8th March 1982. Born in Birmingham on 8th September 1916, he was educated at the King Edward VI Grammar School, Camp Hill, Birmingham, subsequently qualifying as a Chartered Surveyor at the Birmingham School of Architecture. During the early part of his career he practised osteopathy for a short period and published a booklet on general health; in 1953 he moved with his family to South Devon where he formed what was to become a successful property development company of which he was director.

In the entomological world he was perhaps better known on the continent than in England, his business commitments having prevented him from attending the meetings of entomological societies in London, although he made frequent visits to the Natural History Museum to name some of the butterflies which he had collected. His collecting trips took him to Italy, France and Spain, but he was especially interested in the fauna of North Africa and the Middle East, having made several visits to Morocco, Algeria, Turkey, Lebanon and Iran. I was privileged to join him on several expeditions to Iran where many new and exciting butterfly discoveries were made. Unfortunately, and again because of business reasons, he was never able to find the time to publish the results of his collecting, consequently much knowledge has been lost while others have claimed credit and priorities which in fact should be attributed to him. For example, he was the first person to find and collect the female sex of *Melitaea sarvistana*, and with the writer he first discovered a new species of Marbled White butterfly (subsequently named *Melanargia evartianae*) in the subtropical forest of eastern Mazandaran, Iran.

In addition to entomology, his interests included the affairs of his local community; he supported many local charities and events, and was a founder member of the Colyton Badminton Club and an accomplished player. Such was his generosity that he designed, built and bore much of the cost of a multipurpose hall for Colyton Grammar School. Recently the building was officially opened by his daughter and has been named Cottrill Hall, a fitting memorial. He leaves a wife, two sons, a daughter and five grandchildren and will be sorely missed by them and his many friends.

W.G. Tremewan



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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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## TO OUR CONTRIBUTORS

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# THE ENTOMOLOGIST'S RECORD

## AND JOURNAL OF VARIATION

*Edited by J. M. CHALMERS-HUNT, F.R.E.S.*

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## TWO BUTTERFLY SURVEYS – CAN YOU HELP US?

Concern over the status of the Marsh Fritillary (*Eurodryas aurinia*) and the High Brown Fritillary (*Argynnis addippe*) has led the Joint Committee for the Conservation of British Insects to undertake surveys of these two local butterflies in 1983.

The main aims of the surveys are to locate and measure the size of all remaining colonies in England and Wales. Some details of all known sites in Scotland and Ireland will also be collected.

We would be most grateful to receive any records for these two butterflies, including sites where they are now extinct. All information will be treated with discretion and acknowledged in the concluding report.

Our thanks in anticipation.

Please contact: **D. J. Simcox,**

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## THE IMMIGRATION OF LEPIDOPTERA TO THE BRITISH ISLES IN 1982

By R. F. BRETHERTON\* and J. M. CHALMERS-HUNT\*\*

For numbers of records of many immigrant species, both common and scarcer, 1982 was a bumper year, equalling or excelling the memorable season of 1976. The number of species which are usually regarded as wholly immigrant, at 40, was not indeed outstanding; but special interest was provided by many records of probable or possible immigrant examples of resident species. These have been marked with a star in the list of species in Annexe II, and the reasons for uncertainty about some of them are discussed below.

The most striking event was the invasion of *Trichoplusia ni* Hbn., of which nearly 70 were reported. This was probably the largest yet known, as the numbers given in the annual migration records for the previous best years, 1958 and 1953, are only 24 and 20. Of *Eublemma parva* Hbn. only one adult was reported, at Dumfries in July; but many larvae were found in south Devon in August and September from which moths were reared. The very scarce Plusias were well represented by three *Chrysodeixis acuta* Walker in Essex (one in September) and Sussex (two in September and November), two *Diachrysia orichalcea* Fab. in Sussex in August and October, and two *Macdunnoughia confusa* Steph. in Norfolk and Essex in August. The third known British specimen of the African *Earias biplaga* Walker was trapped at Lymington, Hampshire on July 23: this may have been naturally immigrant or, possibly accidentally introduced. The butterfly *Araschnia levana* L. was previously known in England only as a result of artificial introduction and temporary establishment about 1912; but on May 21 1982 one was disturbed from bilberry in Surrey. As immigrations of *Vanessa atalanta* L. and of the moths *Autographa gamma* L. and *Plutella xylostella* L. were taking place around that date it is reasonable to suppose that it came with them from France.

Other good single records were of *Euchromius ocella* Haw. in Wiltshire, in October, *Lampides boeticus* L. seen in Suffolk on July 23, *Hippotion celerio* L. in Roxburghshire on November 7, *Mythimna loreyi* Dup. in Cornwall in August, *Catocala fraxini* L. in Hampshire in September and *Utetheisa pulchella* L. in Co. Kerry in October.

For much of the season, from March until late June, most of England had dry and very sunny weather with long periods of high temperatures by day and, when there was cloud, by night also. Winds were mainly from the east, but veering fairly often to south east, south and even occasionally south west, so allowing varied arrivals of immigrants, though mostly in small numbers and from relatively near sources. In July and early August conditions became

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more unsettled, with rain and longer intervals of variable wind; but day and night temperatures remained very high. After about the middle of August, however, the easterly air-stream disappeared altogether, giving place to alternations of north west with south west and occasionally south winds more favourable for arrivals of the usual autumn immigrants from Spain and possibly from north Africa. This background serves to explain the sequence and content of the immigrations.

No late winter influx appears to have been noted, and in April only a few *Agrotis ipsilon* L. were seen. About May 15 *V. atalanta* L., *A. gamma*, *P. xylostella*, *Cynthia cardui* L. and a few *Nomophila noctuella* D. & S. arrived, and influxes of these species appear to have continued in good numbers at intervals through June and into July. In the last days of the month and in early June there was a more varied immigration which included *Mythimna vitellina* Hbn. in Cornwall, *Senta flammea* Curtis and *Papilio machaon* L. in Kent, *Colias croceus* Fourc., *Orthonama obstipata* Fab. and a number of *Macroglossa stellatarum* L. A further wave which began about June 14 added the first *Heliothis peltigera* D. & S., *Rhodometra sacraria* L. (in Ireland) *Mythimna unipuncta* Haw. and *Hyles livornica* Esp. All these presumably came from the south west during short breaks in the easterly winds. The last days of the month and July 1 and 2 saw another small invasion of mainly similar origin which included three more *H. livornica*, the first English *sacraria*, *Agrius convolvuli* L. and *Palpita unionalis* Hbn., as well as two probably immigrant *Lithosia quadra* L.

After some days of cool northwesterly winds the most interesting immigration of the year came in between July 9 and 20, with winds varying from south east to south west and very high temperatures. It began with a major influx of *Spodoptera exigua* Hbn., *M. stellatarum*, *L. quadra*, with records of a dozen *T. ni* spread in the period, many more *H. peltigera*, eight *Nola aerugula* Hbn., *Hyles gallii* Rott. in Sussex and Orkney and the only recorded adult of *E. parva*, as well as several probable immigrants of resident species; there were large scores of *Autographa gamma* along the south coast, and on July 13 three coastal traps in Dorset were filled by an estimated 6,000 *Noctua pronuba*, thus establishing its credentials as an immigrant. Including the commoners, at least 30 immigrant and probably immigrant species were reported between July 8 and 23. The arrivals were mainly on the south coast of England, but with considerable extension up the east coast to Yorkshire; western Britain and Ireland seem to have received little at this time. In the last few days of July and in early August, with a strong recurrence of east and south east winds and high temperatures, there was further movement across the North Sea, bringing *H. gallii*, a number of *Eurois occulta* L., probable immigrants of several other resident species, and a single specimen of *M. confusa* in Norfolk; but records of *Mythimna albipuncta* D. & S. and *A. convolvuli* in Dorset and Sussex suggest that arrivals from the south were still continuing. There was also a sharp rise in the records of the common butterflies *V. atalanta*, *C. cardui* and *C. croceus*; but it is not

clear whether this was mainly due to immigration or to the emergence of offspring from May and June arrivals. During the remainder of August also, most of the scattered records of these and other species were probably of locally bred examples; but another *M. confusa* was trapped in Essex, on August 24 and in the last days *M. vitellina* was common in Cornwall and there were the first of the main invasion of *A. convolvuli*.

Mass immigration began early in September, and reached its peak both of species and numbers about September 17 in south west and south winds, which blew round the areas of high pressure moving slowly from the Azores across Spain, France and southern Britain. After a week's pause, there was a further influx in the last week in more disturbed conditions with fronts moving rapidly over the British Isles from the south west. The peak period was distinguished by the second invasion of *T. ni*, of which over 50 were reported, and of *S. exigua* and *P. unionalis* and, among the common species, by many *C. cardui*, *V. atalanta* and *C. croceus*, apparently moving by night: these were trapped together at Portland on the night of September 19, and of *V. atalanta* about 50 were counted at Padstow, Cornwall on the morning of September 14, sitting exhausted on trees and grasses. *M. stellatarum* was also reported in large numbers; of *A. gamma* 272 were trapped in co. Cork on September 16, *A. ipsilon* and *P. saucia* were widely common with, for the first time this year, *N. noctuella*. *A. convolvuli* was numerous, but reached its peak at the end of the month and in the first days of October. It is to be noted, however, that single specimens were seen on North Sea oil rigs on September 11, 26 and 29, in Aberdeen City on September 28, and a *Nymphalis antiopa* L. in Orkney on September 16, being apparently exceptions to the exclusively south western origins of these immigrations, which provided almost all of the 20 scarcer species recorded in the month.

In October the weather was dominated by a succession of depressions over the British Isles, during which the winds originated mainly in the North Atlantic. Records were chiefly of immigrants surviving from September or of local descendents of still earlier arrivals; of *V. atalanta* large southward movements were noticed in several places along the east coast. The considerable numbers of *A. ipsilon*, *P. saucia* and *P. unionalis*, however, may have included some new immigrants, and the second Irish example reported of *T. ni* was probably a primary immigrant, as may have been the Irish *U. pulchella*. Early November, which is sometimes an interesting period, showed some improvement on October, with some 15 records of *O. obstipata*, several of *M. vitellina*, *M. unipuncta*, *P. saucia* and many *Udea ferrugalis* Hbn., as well as two *Uresiphita limbalis* D. & S. and singles of *H. armigera*, *A. atropos*, *C. acuta*, and the only *Hippotion celerio* L., which was found on November 7 in Roxburghshire. These records coincided with more southerly winds, and most of them probably represented primary immigrants. The few *V. atalanta*, *A. ipsilon*, and *A. gamma* which continued into December were probably locally bred.

Some explanation is needed of the unusual number, twenty-five species, listed as probable or possible immigrants of resident species. The uncertainty of status mainly concerns examples of resident species which occurred in 1982 on or near the south and east coasts extending to Yorkshire, and also some in Orkney, coinciding with undoubted immigrants in mid July and early August. Thus of *N. aerugula* between July 9 and 15 four were recorded at Minster-in-Sheppey and Orlestone in Kent, one on the coast of Essex and three at Spurn Point and Flamborough in Yorkshire. The only known British colony, in Kent, became extinct about 1900, and the few records of singles there, and of two trapped at Spurn in 1980 have been regarded as immigrant. It seems highly probable that all the examples in 1982 came in south east winds from the coast of Belgium, where the species is said to be common. More doubt must, however, attach to the numerous *M. albula* trapped on the same and later nights at Minster-in-Sheppey and also at Bradwell-on-Sea in Essex, and also to examples of *Deltote bankiana* Fab. on the cliffs above St. Margaret's Bay and Boughton Aluph in Kent, since *M. albula* is certainly resident in Kent and been spreading elsewhere, while *D. bankiana*, once thought to be only an immigrant to Kent, appears to have become recently established in its eastern corner.

*Autographa bractea* D. & S., recorded for the first time in Kent at Minster-in-Sheppey and St. Margaret's Bay on July 13 and 14, at Muston on the Yorkshire coast on July 17 and 20, and also in Hertfordshire on July 31, presents a rather different problem. Always resident in Scotland and northern England, in recent years it has spread steadily southwards through the west Midlands and Wales. During the same period, however, it has also moved south and west through the Netherlands, and scattered records on the coasts of Yorkshire and Sussex probably result from this movement rather than from the internal spread. *Euproctis chrysorrhoea* L., of which two were found in Yorkshire on July 7 and 15, was known there previously only from captures in similar circumstances in 1973; it is a local coastal plague from Kent to Suffolk. On the south coast, the wide spread of records of *Lithosia quadra* L. and the great weight of those at traps in Hampshire appear to establish them as immigrant, despite the known residence of the species in the New Forest; the fact that all were males is, however, a curious feature. For *Enargia paleacea* Esp., distance from its nearest English habitats in Worcestershire and further north is sufficient indication of immigrant status for the examples in Dorset, Sussex and Surrey on July 16 and 18 and of that in Kent on August 1.

Coincidence with the immigration of late July and early August gave a similar set of problems for the status of *Parastichtis suspecta* Hbn., *Rivula sericealis* Scop., *Parascotia fuliginaria* L. on the Yorkshire coast, and for *Celaena leucostigma* Hbn. f. *typica* there and in Orkney, which have not previously been suspected of immigration. In judging these and similar uncertainties it should be remembered that high night temperatures combined with unwonted abundance caused wide dispersal of many purely resident species and enabled

them to be noted in unexpected places, as happened also in 1976. An alternative explanation for the appearance of some of the suspected immigrants far up the east coast might be their carriage from further south in winds of the same general direction as those which brought the undoubted immigrants. In the present state of our knowledge, firm verdicts may be best withheld.

Seven species of the scarce butterflies were reported, including the unique occurrence of *A. lerana* already mentioned; but unfortunately full confirmation of identity or natural immigrant status for some of the records is lacking. Of the common species *Vanessa atalanta* was abundant. Very early examples were seen on February 15 and April 4 in S. Devon, and it benefitted from strong immigrations about May 15, in early June and again in July, when conditions for local breeding were good. There were further influxes in the first week of August and in mid September, during which about 80 individuals were found in light traps. Southward flights were noticed in October, and in the south butterflies were still numerous in some places in November. The last record was of one settled in a house at Stourbridge, Worcestershire, on December 22. The species was also unusually common in Wales and Scotland, where its range reached Sutherland and Orkney.

*Cynthia cardui* L. was in above average numbers: records received probably cover about 1,000 butterflies and some larvae; but there was no mass immigration comparable to that in 1980. The first record was at Malborough, south Devon on April 14, but only five were reported in May. There was good immigration in early and mid June and again about July 17. Thereafter the majority of records probably referred to off-spring of the early immigrants, though the species certainly shared in the varied invasion of mid September, when some were found in light traps in several places. Early cold and rain in October killed off both larvae and adults; records are few, the last being at Spurn on October 15. *C. cardui* was recorded, outside the south coastal counties, most in Yorkshire, Lincolnshire and widely in Scotland, where it reached the Isle of Canna as early as June 2 and Orkney by June 26. In Ireland it seems to have been widespread and fairly common.

*Colias crocea* Fourc. had another poor season. About 120 were reported; but of these 40 were in west Cornwall, 20 in Dorset and 20 in Sussex, in which counties alone there were records of early immigrants in June and July. Elsewhere it was seen very thinly in twelve English and Welsh and three Irish counties, with the most northerly singles at Newbrough, Anglesey and Spurn, Yorkshire. Most of the records fell between August 8 and September 20. Their dates and places suggest that the earlier ones resulted from local breeding, the later from a few immigrants in the September influx. The last was at Eastbourne on October 14.

The common moths were all much above their usual numbers, except that *N. noctuella* and *U. ferrugalis* were few until September and October. Most remarkable was the diurnal *M. stellatarum* of which over 800 were reported, and also larvae in many places. The

first were seen at Burley, Hampshire and at Aberdeen on June 6 and 7, though some had been noticed on the Santander to Plymouth ferry in the Bay of Biscay on May 25. Thereafter there were almost daily records through July; the highest numbers were reached in September, with some through October and the last at Highcliffe, Hampshire on November 11. *P. saucia*, with over 300 covered by reports, was also much more plentiful and widespread than usual. The first record was of one taken at sugar at Rannoch, Perthshire on May 17, but immigrants in May and June were generally few. Later, larvae were found as far north as Gartlea, Dumbartonshire but it seems that most of the abundance of moths came from heavy and sudden immigration in September. They were still numerous in October, and the last was noted at Walberswick, Suffolk on November 11. All the common immigrant species, however, gained from good breeding conditions in the early summer, and it is not possible to judge the proportions which primary immigration contributed to their totals.

The great invasion of *T. ni* was in two parts. A dozen were recorded from July 9 to 23; except for one at Spurn, Yorkshire, these were confined to Sussex and Hampshire. A much bigger influx began probably on September 9 and reached its peak between September 15 and 18. Several anomalous records in August and the first week of September were perhaps of offspring from early July arrivals; but no larvae were reported, and several females retained for breeding failed to lay other than infertile eggs. This may indicate that the immigrant females were sexually immature on arrival. The second invasion was more widespread than the first, the 50 records being spread round the coasts from south Devon to south Yorkshire and in four inland counties to Warwickshire. The last English record was in Essex on September 25; but the only two Irish records received were in co. Cork on September 19 and October 10.

The abundance of other usually scarce immigrants is fully indicated in Annexe II, and needs little comment. It is, however, interesting to note that the two main invasions of *S. exigua* coincided fairly closely with those of *T. ni*, which may indicate a common origin. *P. unionalis*, with nearly 80 examples, did conspicuously better than usual, and *H. livornica* with seven did well; but the long distance sub-tropical immigrants did not appear.

In judging the season as a whole, it needs to be remembered that the high numbers recorded of both the scarce and the common immigrants were probably somewhat raised by the generally good conditions for trapping and observing, and certainly by a large increase in the numbers of recorders, whose names are given as far as possible in Annexe I. To all of these the authors wish to offer their thanks and congratulations. We are particularly grateful to those who have supplied detailed records from continuously run light traps, and also to those who have them from others in their area.

(To be continued)

IN SEARCH OF *EURYNEBRIA*

By DAVID R. COPESTAKE\*

I first saw *Eurynebria complanata* L. (or *Nebria complanta* L. as I believe it has now reverted to) in the Coleoptera collection of the National Museum of Wales in Cardiff. I was immediately impressed by it and was told that it could be found along the banks of the Ogmore river near to the sandhills of Merthyr Mawr Warren, to the East of Porthcawl, Glamorgan. The old county list of the Coleoptera of Glamorgan (1912) says of this beetle. "This is one of the finest and most interesting of our local Coleoptera".

*Eurynebria* is a large Carabid about 18-20mm long and is a light sandy colour with variable black markings on the elytra. They are well camouflaged when seen on a sandy shore covered in debris, and when encountered in large numbers (I have seen over 60 together) they are the sort of insect to give the non-entomologist the creeps, as they dash quickly over the sand.

It took me and my two boys four expeditions in search of *Eurynebria* before we found the beetle, and then we found dozens of them. Their preferred place of refuge has now changed from under old logs washed up on the shore, to rusty and battered oil drums which are full of nooks and crannies. Crowds of them will gather under one old drum. Their favourite food is yellow sand hoppers.

The Ogmore river winds its way to the sea near the village of Ogmore-by-sea, and Merthyr Mawr Warren is on the opposite side. Our first expedition was through the sandhills to the river side, and then along the river nearly to its mouth. It is fairly hard walking on the soft sand and with so many interesting beetles to be found on the way, the journey takes a long time. Following a dry stream bed in the summer of 1981 we eventually got to the Ogmore river to find the banks very muddy. At high water mark, which in places was 100 yards from the river, we looked under seaweed and old bits of wood and logs. All to no avail, there was no sign of a yellow and black Carabid. The large black *Brosicus cephalotes* L. was very common, together with some smaller beetles, but not the prize we searched for. After reaching nearly to the mouth of the river we turned back hungry and tired. Our second expedition was on the opposite side of the river where one can get down near to the river in a car. This saves the long trek through the sandhills. However, *Eurynebria* was clearly not to be found on that side, there was to be no short cut to finding him.

In the summer of 1982 we heard from the University Zoology Dept. that *Eurynebria* could be found further along the coast at a place called Kenfig dunes, and so one afternoon I took my youngest son (aged 9) on an expedition to find it. However the dunes at Kenfig seemed wider than at Merthyr Mawr and looked very easy to get lost in. We took a straight line to the sea, and after finding many new and interesting beetles on the way, even-

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tually found it. Unfortunately, evening was drawing in and we could only spare twenty minutes on the beach before we must make our return journey. We looked under hundreds of stones in that short time (where we had been told we could find them), but no *Eurynebria* was to be found.

Not daunted, we decided to have a full expedition at Merthyr Mawr, and take plenty of food and orange squash with us. We picked a warm sunny day in July and set off for the day visiting our carrion traps in a wood on the way. I decided to trek through the sandhills in a more westerly direction in order to reach the coast beyond the mouth of the river Ogmore. This entailed 1½ - 2 miles up and down the high dunes. We encountered many species of beetles on the way, *Cicindela maritima* Dejean (what we call the sand-tiger, which is very hard to catch), the black and white weevil on small poplars *Cryptorhynchus lapathi* L. the chafer *Anomala aenea* Degeer the black *Phylan gibbus* Fab. crawling on the sand, and the small hollows in the dunes provided natural beetle traps and my two boys crawled around them on hands and knees picking up minute specimens of one species or another.

Eventually we neared the coast line, and there the dunes towered some 200 feet high. From the tops there was a magnificent view and it was like a scene from a film in a foreign desert. We could see debris which very high tides had carried into the dunes and our excitement rose. We looked under all manner of debris as we made our way to the shore line. Then, some 50 yards from the beach, just as the dunes came to an end, there I found two of the yellow Carabids as I lifted up a large piece of plywood. We had found their habitat at last! Overjoyed, I popped them into the collecting jar. My two boys looked around eagerly — I had offered them a 50p reward for finding the beetle! I soon found four more under some wood, and then Stephen (aged 11) shrieked with delight, "Come quickly, there are hundreds of them, they're running all over the place." He had turned over a rusty and battered oil drum and there underneath must have been over 60 *Eurynebria*. We collected a few, and watched them for a while before putting the drum back carefully. Our expedition was successful, we had found our prize at last!

This part of the beach was covered with debris, brought down by the river, and is a place where a sandy beach merges with the dunes. It was worth the search to find this beetle at last, and we made the way home very happy after a good days outing.

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CLOUDED YELLOW AND DUKE OF BURGUNDY FRITILLARIES  
IN CUMBRIA. During the first two weeks of August, 1982, at least two near-perfect specimens of *Colias croceus*, were seen feeding from flowers along the tow-path of the Lancaster Canal, between Crooklands and Stainton, grid reference SD 5285. Perhaps it is also of interest to note that elsewhere in Cumbria, earlier on in the year, about 10 specimens of *Hamearis lucina* were seen in an area densely covered with primroses and cowslips. — DAVID C. HOCKIN, 12 Starling Close, Runcorn, Cheshire.

## SOUTHERN EUROPE IN 1980

By W. J. TENNENT\*

## Part 1: Corsica and Elba

Spurred by the accounts of collecting trips made in the 1960s by Bretherton, de Worms and Greenwood, I visited Corsica during July 1980 in the hope of obtaining some of the endemic butterflies for which the island is renowned. Unfortunately the weather, which cannot be relied upon nowadays even in Southern Europe in July, was not at its best and collecting suffered accordingly. This, together with the fact that this was a late season, resulted in very mixed fortunes.

The first stop of any entomological note after leaving England was the night of 7th July where, after driving through pouring rain for most of the day, I stopped at 1090m on the Col de la Croix Haute (Isere) in Southern France. There I was introduced for the first time to some of the small and very attractive 'tiger' moths among the surprisingly large number of moths attracted to the MV trap in the persistent drizzle. It may be appropriate here to mention that, although I had with me a trap and generator and caught a large number of moths, they figure little in this account simply because many remain unidentified for the moment. There is a dearth of reasonably priced up-to-date literature to aid identification of European moths in the English language; it may be that this goes some way to answering the question posed by C. L. Nissen in his letter to the Editor (Vol. 94. (5-6) p.88)?

The rain continued all of the following day as I motored south through Digne to Cannes and then west toward Marseille. No butterflies were seen; the only ray of sunshine was the ready availability of good coffee which makes such a pleasant change from the coffee generally sold in England (no wonder we English drink so much tea) However, the following day dawned dry and by 10 o'clock the sun shone weakly although a fresh breeze was blowing. The morning and early afternoon were spent between 400 and 725m on the slopes near the Col de L'Espigoulier a few miles to the east of Marseille. Butterflies were by no means plentiful. *Vanessa cardui* and *Gonepteryx cleopatra europaea* were not uncommon and a single *Fabriciana adippe* was netted. On a small peak at 725m, small numbers of *Coenonympha dorus*, *Plebejus argus* and *Nordmannia esculi* were to be found resting in the short grass amongst the rocks. They were not easily disturbed and when they chose to fly were whisked away by the wind, making collecting frustrating, if rather sporting.

I drove to Marseille later that afternoon to catch the ferry and after an uneventful crossing, arrived at Ajaccio early on the 10th of July. The intention was to head directly into the mountains around Vizzavona but a heavy mist obscured all but the very base of the mountains. Although conditions seemed ideal, a look around the

lower ground during the morning produced no butterflies at all, even in some flowery fields at sea level. During the drive up into the mountains at midday only a single *Papilio* was seen crossing the road some distance in front of the car. The weather in the mountains was miserable; the Col above Vizzavona was shrouded in mist with visibility reduced to only a few yards. At Vizzavona itself the mist cleared during the afternoon and although the sun remained hidden, a few very dark *Lycaena phlaeas*, one or two *Celastrina argiolus* and several *Polyommatus icarus* were disturbed in the wet grass near the village railway station. A worn male *Lasiommata megera paramegera* was also captured in the same area.

The next day dawned overcast but by mid-morning the clouds had gone, the sun was shining brightly and the only hinderance was a fairly gusty wind. The short grass and many flowers around the old Genoese fort above the Col de Vizzavona proved a lucrative area although it soon became apparent that many butterflies were just emerging. Two *Coenonympha corinna* and three male *Plebejus argus corsica*, all in very fresh condition, were taken near the fort as were several *L. megera paramegera*, past their best. Slightly higher up a single *Aglais urticae ichnusa* was found resting on the bare ground; there were a few *Artogeia napi meridionalis*, *Pararge aegeria*, *Lepidodea sinapis* and the odd *Colias croceus*, including form *helice*. A single *Pseudophilotes baton* was taken and one *Inachis io* seen. A climb to a mountain summit at 1500m yielded nothing other than a number of *V. cardui* but the climb was enjoyable and the view from the top magnificent.

The following two days were mainly spent in the same area. On the 12th it rained for most of the day but the 13th dawned fine and dry and both *C. corinna* and male *P. argus corsica* were to be found in small numbers, though a careful search failed to turn up a female of the latter. *C. croceus*, *P. icarus* and *A. napi* were common as was *L. megera paramegera*, mainly chipped. Several *A. urticae ichnusa* were seen but were not easy to net as most seemed to be merely 'passing through' and I climbed again to the high point at 1500m, mainly for the view and to take some photographs. Around the summit careered a *Papilio* which I assumed, probably because of its fresh condition, to be *P. machaon*. I sat on a rock and watched it for some time until it settled on a patch of bare ground and it was only when I was in striking distance that I realised it was a male *P. hospiton*. This and another rather more worn male caught five minutes later in the same place, constituted the only records of *P. hospiton* and indeed of almost any *Papilio* whilst in Corsica.

The 14th of July dawned bright again and I was pleased to find my first Striped Hawk Moth, *Celerio livornica* amongst the more usual *Hyloicus pinastri* in the trap. *C. corinna* and *P. argus* were now in fair numbers above the Col and, moving to slightly lower levels to escape the wind, I stopped just below 900m where the narrow gauge railway crosses the road and disappears into a tunnel above Tattone. I walked the mile or so along the track into Tattone;

the banks on either side were overgrown and supported plenty of flowers and trees, ideal for the fair numbers of *C. argiolus*, *L. sinapis*, *A. napi* and *Maniola jurtina*. *P. megera* was common although almost all were females, in contrast to the area only 300m higher where almost all were males (I only saw three females above the Col throughout my stay). There were many *P. icarus* flying with small numbers of *Lampides boeticus* and one or two *Issoria lathonia* but only two male *P. argus* were seen. A very brightly coloured Satyrid disturbed from between the railway lines disappeared into the undergrowth 50m further along the track and turned out to be *Hipparchia neomiris*, the only example seen although a careful search both then and again two days later was made. I ran the trap in the forest near Tattone that night and was visited by a local gendarmarie patrol who after a very cautious approach and much gesticulation, eventually decided that I was probably harmless and left me to ponder, not for the first time, why I don't have a consuming interest in stamps!

The 15th of July was my last full day around Vizzavona and the Col; *C. corinna* was now very common on the rough ground and on the grassy slopes nearby. I found the first female *P. argus* in mid morning and a further three during the day, *A. urticae* was to be found in small numbers at flowers below the ruins but little else of interest was noted. The following day both sexes of *P. argus* were quite common and I was able to take a good series of females before driving again to Tattone where only those species noted on the visit two days earlier were flying.

I set off in the direction of Bastia without having seen sign of *Fabriciana elisa* and stopped in mid morning at 500m in an open area on the edge of a forest near the village of Francardo. There I saw (but did not catch) a single *Papilio (machaon?)*, flying with several *Polygonia c-album*, *Pandoriana pandora*, *Hipparchia aristaeus* and *Pyrgus amicanus*. A field full of pink thistles growing in some cases to shoulder height was the home of a large colony of *Brintesia circe* and very large numbers of *V. cardui* including some extremely small specimens of the latter which when seen on the wing were at first unrecognisable as that species. Forewing lengths of *V. cardui* here varied from 17mm to 34mm! A single fresh but badly damaged *Argynnis paphia immaculata* was seen and a small colony of fresh *Everes alcetas* was found near a marshy area flying in the company of *P. icarus*, *Pyronia tithonus* and *M. jurtina* were to be found in moderate numbers along the hedgerows.

The following day, 17th of July, it rained all day and I took the opportunity to look around Bastia and to book my ferry for the Italian mainland the following day. In so doing I learned that the ferry stops at Piombino and leaves again almost immediately for Elba, a journey which could be booked with minimal extra cost and I decided to spend a day on the island. The next day was dry but dull and the only butterflies to be found flying in an area close to sea level south of Bastia were *L. phlaeas*, *Coenonympha pamphilus*, *P. tithonus*, *Pyronia cecelia*, *C. argiolus*, *P. icarus*, *A. napi* and *M. jurtina*. A female of the last species was taken with almost

all of both hindwings white. I caught the ferry that afternoon and arrived at Portoferraio, on the north side of the island of Elba, about 9 o'clock that evening.

The next day was sunny and warm and although not too many butterflies were to be found on the hills around Procchio, *Gonepteryx cleopatra cleopatra* and *L. sinapis* were not uncommon. I caught large numbers of *Artogeia rapae* in the hope of finding *Artogeia manni* amongst them but didn't find any at all, whilst *Pontia daplidice*, *Thymelicus acteon*, *Carcharodus alceae* and *L. megera* of the nominate form were found in small numbers. Only two or three *Coenonympha elbana* were seen fluttering weakly over the rough ground at this low level but at 320m in similar surroundings on the slopes of nearby Mt. Perone, they were very common. The moth *Syntomis phegea* was also flying at this latter locality in very large numbers in the late afternoon. From the little I saw of the island it is most attractive and worthy of a longer stay in the future.

### Part 2: Arquata Scrivia and the Alpes Maritimes

I left Elba on the 20th of July on the ferry to Piombino, drove up the west coast of Italy to Genoa and thence inland to the town of Arquata Scrivia, recorded by Baron de Worms (1960) and also recommended to me several years ago by Lt. Col. W. B. L. Manley, who said this was one of the best areas he knew for Lycaenids, an appraisal with which I was to agree completely. Having arrived in the town I found a track wide enough for the car, bordered on one side by a narrow stream and on the other by garden allotments stretching from the track to the slopes of a ridge. The opposite side of the stream consisted of flowery slopes and thick luxuriant grass and although it was almost 8 o'clock in the evening when I came to the end of the track at the head of the valley, a walk through the flowers disturbed one or two large blues which turned out to be *Meleageria daphnis*. The following morning I woke early and heard an irregular and very unusual bird call from the tree beneath which I had camped; the owner turned out to be a Golden Oriole, a bird which I had not seen before but of which I saw a lot that day and the next. The entomological wealth of the area soon became apparent. One of the first butterflies to appear was the large Satyrid *Minois dryas* which was common but difficult to approach. *Nordmannia ilicis* and *Strymonidia spini* were sparse and rather worn as was *Quercusia quercus* and among the other Lycaenids of the area were *Cupido minimus*, *Lysandra coridon*, *Polyommatus icarus*, *Everes alcetas*, *Aricia idas*, *Agrodiaetus escheri* and *Agrodiaetus theristes*. *M. daphnis* was common, all the females being of the blue form and *Maculinea arion ligurica* was in fair numbers, most of them very large and of a very attractive silvery blue.

The genus *Colias* was represented by *croceus*, *hyale* and *australis*, *Leptidea sinapis* was common on the track near trees overhanging the stream and *Leptidea duponcheli* rather less so. *Artogeia manni* was present among the numbers of *Artogeia rapae* and one or two very fresh examples of *Limenitis reducta* flew in the com-

pany of some battered brethren, remnants of an earlier brood. *Melitaea didyma*, *Clossiana titania*, worn *Brenthis daphne*, *Melanargia galathea*, *M. jurtina*, *Coenonympha arcania*, *Thymelicus acteon*, *Carcharodus flocciferus* and *Pontia daplidice* flew on the hillsides and at the top of the ridge I took a single *Papilion machaon*. In the wood at the head of the valley were *Argynnis paphia*, *Pararge aegeria* and several very fast flying *Nymphalis polychloros*.

I moved on the morning of the 23rd of July and took the autostrada with its many tunnels and picturesque viaducts, from Genoa until the French border where I turned off towards Sospel, heading for St. Martin Vesubie in the Alpes Maritimes. There was a fair amount of traffic on the mountain road and it was a while before I was able safely to park to investigate the identity of large Satyrids, commonly seen crossing the road. The butterflies were *Hipparchia alcyone* and were very common, flying up and down the mountain side, often pausing to sit on the hot road until disturbed by passing cars. *M. galathea*, *A. paphia*, *P. icarus*, *V. cardui* and *A. rapae* were to be found with singles of *A. manni* and *Erebia ligea*. I did not stop for long but continued to St. Martin Vesubie where I took the right fork above the village to the valley of the Boreon where, around 1500m, *Parnassius apollo* flew commonly on the flowery slopes with *Erebia alberganus*, *C. arcania*, *C. titania*, *Mesoacidalia aglaja*, *Cyaniris semiargus*, *Plebejus argus*, *Paleochrysophanus hippothoe* and *Aricia artaxerxes*. Skippers included *Erynnis tages*, *Pyrgus malvae* and *Pyrgus alveus*. Higher on the mountain at 1900m, on rocky ground, flew a few *Erebia epiphron*.

The 24th of July was dull for most of the day, I returned to St. Martin Vesubie the next morning and took the left fork up the winding road to an area near the La Colmaine chair lift. The sun appeared occasionally but at least it remained dry. This was a rich area. *Coenonympha glycerion* was common and in fresh condition between 1600 and 1800m whilst among the common *Maculinea arion obscura* were to be found *Maculinea alcon rebeli*, mainly worn but obviously an established colony restricted to a very small area. *L. coridon*, *Heodes tityrus*, *Eumedonia eumedon*, a few *Lysandra bellargus*, several *Agrodiaetus amanda* and a single *Pseudaricia nicias* flew over the short grass with the odd *P. apollo*, *C. croceus* and the inevitable *V. cardui* (1980 was obviously a good year for *V. cardui* throughout Europe, it was to be found everywhere at all altitudes, generally in greater numbers than I have ever seen it). Slightly higher, around the station at the top of the chair lift, was *Lasiommata maera*, *E. epiphron*, *Heodes virgaureae*, *P. hippothoe* and *P. machaon*.

The following day, 25th of July, I decided to climb a high peak on the opposite side of the valley and set off early through the pine woods. *Erebia meolans* was flying quite commonly among the trees but not above 1800m, whilst *E. eumedon* and *L. phlaeas* were plentiful in the forest clearing. Above the tree line it was very windy and none too warm, no butterflies were flying although around a weather station at the 2220m peak and in a sheltered grassy hollow just below, they were to be found in reasonable numbers. *Colias phicomone* and *Pontia callidice* were found near the top, the for-

mer being far more tiring to catch than the latter; at least with *P. callidice* it was only necessary to select a suitable spot and wait for them to fly close whereas *C. phicomone* settled often and was easily disturbed, flying a further 20m, generally either straight up or straight down the hillside, even when approached with stealth! Two *P. machaon* dashed around the peak and *L. macra* was present but impossible to catch as they made no attempt to fly against the wind and were whisked away as soon as they were disturbed. Such was also the difficulty with *Hypodryas cynthia alpicola* around the hollow, though I fared rather better with *Boloria pales* which flew very close to the ground and settled on the short grass. The only *Erebias* found before the rain clouds put a stop to collecting were singles of *E. alberganus* and *E. pluto* and the last capture was a *Callophrys rubi* in good order.

I left the general area in very dull conditions on the morning of the 26th of July, the poor weather persisted until late morning when the sun shone for about two hours at which time I was just west of Digne. Here on the overgrown edge of a cornfield not far from the main road were numbers of *N. ilicis*, *Agrodiaetus ripartii*, *A. thersites*, *A. escheri*, *C. australis*, *M. galathea*, *L. duponcheli* and quite large numbers of *Satyrus ferula* which seemed to have a penchant for the tall purple thistles. I also caught specimens of *A. manni* and *Hyponephele lycaon*.

I arrived at Domene, a few miles east of Grenoble that afternoon in the hope of obtaining *Coenonympha oedippus* and *Maculinea telejus*, both recorded from the nearby marshes by Bretherton and de Worms (1953). A search produced nothing of interest although the next morning produced a few *Aphantopus hyperantus*, *M. jurtina*, *Erynnis tages* and a single *Araschia levana* of the summer brood. I came across a large area of long grass, thistles and the foodplant of *M. telejus*; *Sanguisorba officinalis* which was the most productive area, although neither of the species I was particularly searching for were found. However, there was a flourishing colony of *Everes argiades* and *E. alcetas*, together with enormous numbers of *A. hyperantus* and my efforts were rewarded with the capture of a *A. hyperantus* ab. *obsoleta* with no trace of ocelli on the underside and the merest pinpoints on the upperside forewings. It began to rain heavily that afternoon and the next day dawned similarly disappointing, in addition to which I had caught a heavy cold through sleeping out for so long in such damp conditions. I therefore decided enough was enough and headed for home.

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PAROCYSTOLA ACROXANTHA MEYRICK (LEP.: OECOPHORIDAE) IN SOMERSET. — In 1981, while staying for three nights at the house of a friend in the town of Yeovil, six moths of this species came to the actinic trap that I was operating there. Four appeared on the 29th May, and one on the 30th May. — G. H. YODEN, 16 Castle Avenue, Dover, Kent. [I have seen the specimens, having been shown them in Mr. Youden's collection. This appears to constitute a new record for Somerset and a marked extension of its known range in this country. Moreover, the early dates suggest these were first generation insects and that the species has at least two broods in England. — J. M. C.-H.]

HYMENOPTERA IN LATE 1982. — On the morning of New Year's Eve which was fine and sunny we were interested to see a large queen *Bombus* (sp.?) gathering nectar and pollen on our Winter-flowering *Erica* in the garden here and soon afterwards a queen *Vespa* (sp.?) was also observed flying around a dwarf *Chamaecyparis lawsoniana*. — T. G. HOWARTH, 'Highview', 4 Clinton Rise, Beer, Seaton, Devon EX12 3DZ.

THE APPEARANCE OF THE VESTAL IN THREE CONSECUTIVE YEARS IN CROYDON. — In 1980 a male *Rhodometra sacraria* L. came to my Addiscombe trap and last year I reported three further examples and thought myself fortunate. This year on 25th September, I found in the trap a male and female of the same species and although *R. sacraria* has been observed widespread this year I find it very difficult to believe that this moth is making a habit of migrating to my part of the concrete jungle known as Croydon. Interestingly, the female is the smallest I have ever seen of this species, measuring only 21.5mm across the tips and I rather doubted its ability to produce ova. However, after much cossetting with sugar, water, honey, sherry etc. it laid 39 eggs. The imagines therefrom fed on dock and at normal temperatures, were full size, well coloured and with a strong tendency to aberration. With these almost regular arrivals of *sacraria* and the unusually small size of one specimen, do we possibly have a case for the presence of a local colony? I feel we have. — K. G. W. EVANS, 31 Havelock Road, Addiscombe, Croydon, Surrey CRO 6QQ, 10.xii.1982.

THE TIMING OF EMERGENCE OF PARASITIC  
HYMENOPTERA OF *PIERIS RAPAE* (L.)  
AND *PIERIS BRASSICAE* (L.)

S. C. LITTLEWOOD\*

In December 1979, an aggregation of pupae of two species of *Pieris* was discovered, together with clusters of the cocoons of their parasite, *Apanteles glomeratus* (L.) (Braconidae), on a small east-facing wall, about ten yards distant from the vegetable garden of

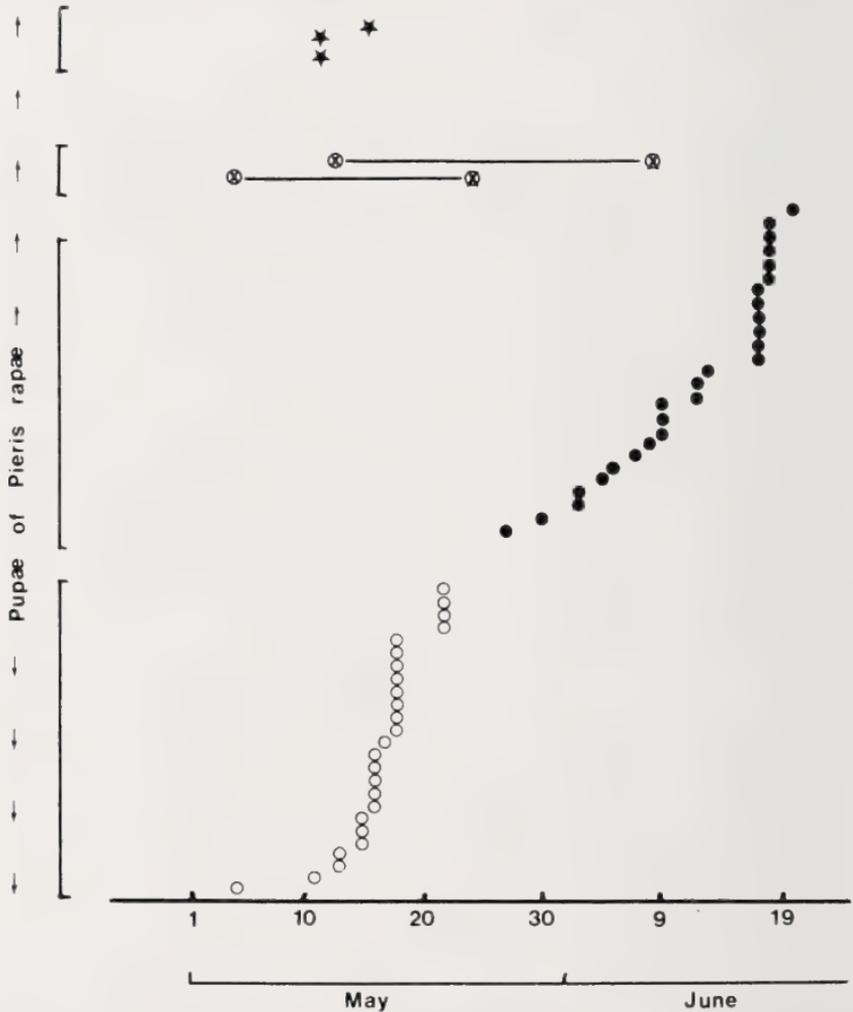


Figure 1. Species and dates of emergence from individual pupae of *Pieris rapae*.

★ = *Pimpla instigator* (Ichneumonidae). ⊗ = *Phryxe vulgaris* (Tachinidae). ● = *Pteromalus puparum* (Pteromalidae). ○ = *Pieris rapae*.

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Melverley, Rowton, near Wellington, Shropshire. In all, 60 pupae of *P. rapae* (L.), 7 pupae of *P. brassicae* (L.) and 29 clusters of *A. glomeratus* were collected and placed in individual, corked glass tubes. The tubes were placed in an outhouse to ensure that the pupae maintained their obligatory diapause.

Emergences began on April 8th., 1980 and continued until June 20th. and the results are shown graphically in Figures 1 and 2. Of the 60 pupae of *P. rapae*, 25 were normal emergences, 26 produced a total of 997 *Pteromalus puparum* (L.) (Chalcidoidea, Pteromalidae) and three produced the solitary parasite *Pimpla instigator* (Fabricius) (Ichneumonidae). Two pupae produced the fly, *Phryxe vulgaris* (Fallen) (Tachinidae), while the remaining four failed to develop. The seven pupae of *P. brassicae* all emerged normally, while the 29 clusters of *Apanteles* cocoons gave rise to 422 *A. glomeratus*, 12 *Tetrastichus galactopus* (Ratzeburg) (Chalcidoidea, Eulophidae) and 256 *Lysibia nana* (Gravenhorst) (Ichneumonidae).

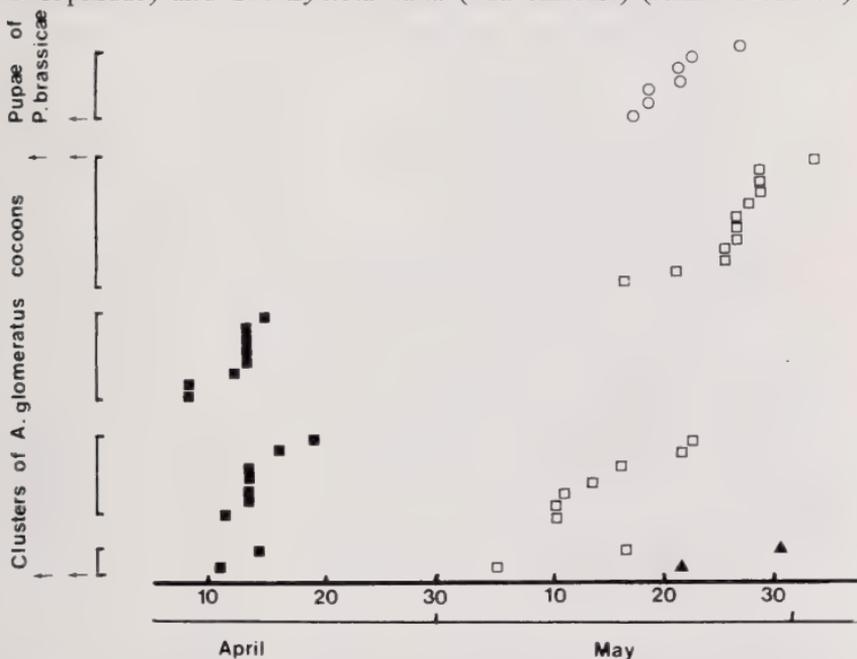


Figure 2. Species and dates of emergence from individual pupae of *Pieris brassicae* and clusters of cocoons of *Apanteles glomeratus* ex larvae of *P. brassicae*.

○ = *Pieris brassicae*. □ = *Apanteles glomeratus* (Braconidae).  
 ■ = *Lysibia nana* (Ichneumonidae). ▲ = *Tetrastichus galactopus* (Eulophidae).

*T. galactopus* is a true hyperparasite, in that it attacks the *Apanteles* while they are still feeding inside the *Pieris*, whereas *L. nana* is a pseudohyperparasite, since it attacks *Apanteles* cocoons after the Pierid host is dead.

Figure 1 shows that, while the Ichneumons emerged coincidentally with the *Pieris* imagines, the adult Tachinids did not finally emerge until after this period, having formed their puparia some three weeks earlier. The Chalcids emerged well into what would be the next larval generation of *P. rapae*.

Figure 2 shows similarly that the pseudohyperparasitic phygadeuontine ichneumonid *L. nana* emerged very much earlier than either the adult *A. glomeratus* or the *Pieris* imagines, while, in two clusters, there was a late emergence of the truly hyperparasitic Chalcid *T. galactopus*.

#### Acknowledgements

I am most grateful to Dr. Mark Shaw, of the Royal Scottish Museum, for his advice and assistance, so generously given; and to Mrs Joan Nicklen of Rothamsted Experimental Station for practical help with the diagrams.

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CELESTRINA ARGIOLUS L. IN 1982. — The Holly Blue was comparatively plentiful in both spring and summer broods at Kew Gardens, Surrey during 1982. The spring brood was first seen on 24th April; 16 had been observed up to the 15th May, more than double that of previous years. The summer brood commenced in the middle of July and could be seen at the rate of 3-4 per hour during the last 10 days of July. This the first time the summer brood has been observed to be greater than the spring one. About 50 years ago a large ivy covered barn here was demolished, up to that time the Holly Blue used to occur almost in profusion year after year. — A. J. BALDWIN, 33 Defoe Avenue, Kew Gardens, Surrey.

THE ANGLE-SHADES IN JANUARY. — The exceptionally mild weather of late may have stimulated the early appearance of a fresh specimen of *Phlogophora meticulosa* L., found in West Wickham on the 13th January 1983, by my friend Mr. L. Keegan. — J. M. CHALMERS-HUNT.

LARVAE OF PHALERA BUCEPHALA L. (BUFF-TIP) ON ROSE. — Mr. B. K. West (*Ent. Rec.* 94: 198) discussing foodplants of this moth, writes "There are very few instances for the Rosaceae in general — Wilson. . . (1880) . . . mentions rose". Perhaps, therefore, I should report having come upon a colony of young *bucephala* larvae on the latter plant in my garden in July or early August 2 or 3 years ago. They were thickly clustered on a single spindly shoot which had grown up through a dense mass of honeysuckle, and which they had almost defoliated. Several days later they had evidently dispersed. Lime appears to be the usual foodplant of the species in this district (S. E. London). — A. A. ALLEN.

THE RED ADMIRAL: VANESSA ATALANTA L. IN NOVEMBER IN S. E. DEVON. — My wife and I were very pleased to see two perfect specimens of the Red Admiral flying and settling a few feet from one another and then sunning themselves on a stone wall near here at about 11.30 a.m. on 20th November 1982. The morning was bright and sunny with a shade temperature of approximately 48° Fahr. (9° Cent.) with a cool S. W. wind. The species was common with *Cynthia cardui* (L.) the Painted Lady during the Summer and early Autumn in the garden and neighbourhood. — T. G. HOWARTH, 'Highview' 4 Clinton Rise, Beer, Seaton, Devon EX12 3DZ.

SOME NEW BUTTERFLIES FROM TANZANIA  
(LEPIDOPTERA: LYCAENIDAE)

JAN KIELLAND\*

## Abstract

Two species of *Rhopalocera* from Tanzania are described, *Ornipholidotos tanganyikae* sp. n. and *Alaena dodomaensis* sp. n.

## Introduction

While examining my own collection of *Ornipholidotos* from Tanzania, there turned out to be two species in the series of *O. overlaeti* Stempffer. Both species were taken in forest remains in a comparatively restricted area, but strangely enough, the two species were never taken together in the same forest (see map).

***Ornipholidotos tanganyikae* sp. n. (Figs. 1 and 2)**

Diagnosis. — Closest to *O. overlaeti* Stempffer, but *overlaeti* is whiter, more densely scaled and its hindwing marginal black band usually narrower and tapering towards tornus; in *tanganyika* the width of the band is quite even. The *tanganyika* male has a more prominent black patch at the end of the cell. The male genitalia differ considerably (see figs. A, B).

External characters. — Male; Length of forewing 19.5 mm.; wings, ground colour greyish-white; forewing black margin rather sparsely scaled, inner border somewhat uneven, broadest at apex, tapering towards tornus; costa black, inner border straight, not intruding cell (in *overlaeti* the black colour intrudes the cell in the basal area); there is a large, rounded black spot at the end of the cell, darker than the border. Hindwing distal margin with an evenly broad, black band, in one male 2 mm. wide, in the other 2.2 mm. There is a prominent black spot at the end of cell, darker than the margin. Underside as the upperside.

Female: Length of forewing 19 to 21.2 mm.; ground colour and markings as in the male; forewing a little more rounded.

Genitalia male. — (Fig. A) Uncus wide (broken in the preparation), composed of two rather unsymmetrically, divided lobes which protrude laterally; the tegumen (which is rather distorted in the preparation), is very large; special processes consist of two pairs of lobes, one small and a large pair, both pairs a little unsymmetrical; sternite almost symmetrically bilobed; aedeagus incurved near the dorsal end, vesica armed with fine cornuti.

\*4916 Boroy, Norway



Fig. 1 *O. tanganyikae*. Holotype male



Fig. 2. *O. tanganyikae*. Allotype female

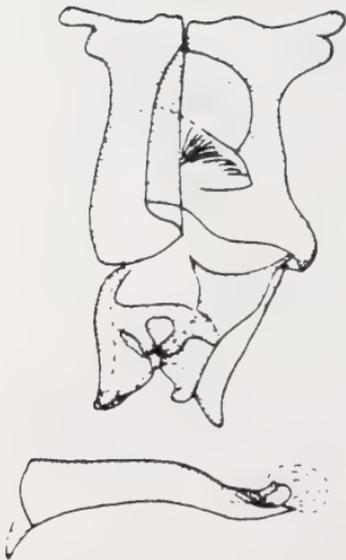


Fig. A. *O. tanganyikae*. Male genitalia

Fig. B. *O. tanganyikae*. Female genitalia

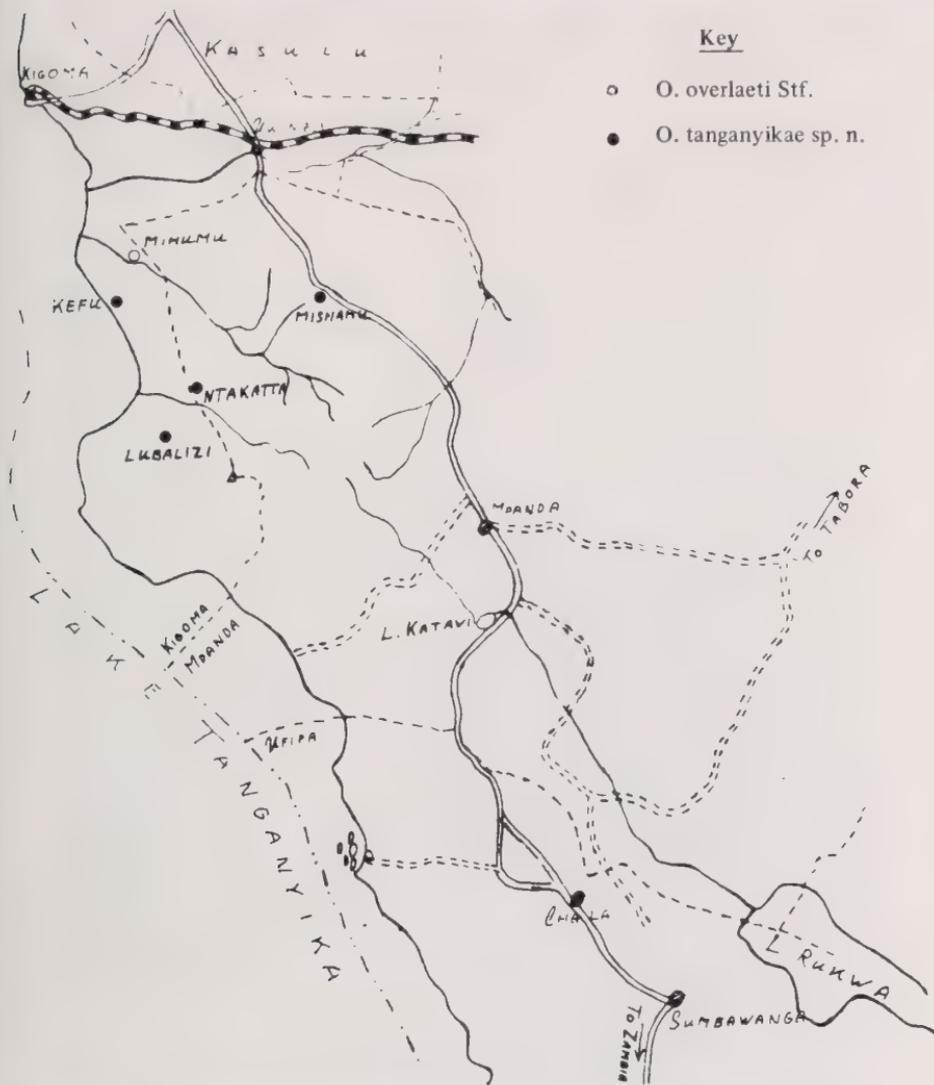


Fig. C. Map showing relative distribution of *O. tanganyikae* and *O. overlaeti*.

**Habitat.** — Riverine forests in half shade. The usual slow flight of the genus, settling on dry twigs, often several together. 900 to 1300 m.

**Known flight period.** — December and April-May.

**Known range.** — Lubalizi riverine forest and Kefu forest in Kigoma; Ntakatta forest and Mishamu in Mpanda.

**Holotype male:** Tanzania, Kigoma, Kefu for., 17-IV-1971, J. Kielland.

Allotype female: Same data and collector. Paratypes: Tanzania, Kigoma, Lubalizi, 18-V-1970, 1 ♂, 1 ♀; Kefu for., 13-IV-1971, 1 ♀; Mpanda, Mishamu, 7 & 8-XII-1979, 2 ♂, all J. Kielland.

Holotype and allotype to be deposited in the British Museum (Nat. Hist.), one male paratype to the National Museum, Nairobi, the rest in J. Kielland collection.

### *Alaena dodomaensis* sp. n.

Related to *A. caissa* Rebl. & Rog.

External characters. — Male: Upperside ground colour blackish grey; white markings strongly reduced; forewing cell with two white dots; the discal row of spots in space 2 to 7 small and only a little paler than the ground colour. Hindwing almost uniformly blackish-grey, with indications of paler markings in space 2 to 5 of the discal row. Underside somewhat greyer than in *caissa*; forewing with white discal markings in space 2 to costa, but much shorter than in *caissa*; space 1 uniformly grey from base to the marginal spot; there are three white spots in the cell and a basal streak as in *caissa*, but smaller; hindwing markings almost as in *caissa*, but greyer and the white marginal spots a little larger than the submarginal spots, while in *caissa* the submarginal spots are longer than the spots in the marginal row. Length of forewing 12.4 mm.; antenna-wing ratio 0.505; in *caissa* 0.466 (But only one specimen is available of each species). Female: Ground colour as in the male, but light markings a little more pronounced in the forewing and clearly defined in the hindwing; the wings are considerably larger and wider. Underside forewing with a white discal spot in 1; otherwise as in the male. Hindwing marginal white spots considerably larger than the submarginal spots. Length of forewing 15.6 mm.; antenna-wing ratio 0.45; male-female antenna-wing co-efficient is 1.122.

Habitat: Settling on rocks in thornbush country.

Holotype male: Tanzania, Dodoma, 30-XI-1965, J. Kielland.

Allotype female: Same data and collector.

Holotype and allotype are both in the British Museum (Nat. Hist.) collection.

### Acknowledgements

My thanks are due to the staff of the British Museum (Natural History). In particular to R. I. Vane-Wright, Philip Ackery and Ramnik Arora for their help while studying the Museum collection and to the Officers of the Department of Wildlife in Tanzania for issuing permits to collect butterflies in Tanzania and for valuable assistance.

*CALAMEUTA PALLIPES* (KLUG)  
(SYMPHYTA: CEPHIDAE),  
A SPECIES AND A FAMILY OF SAWFLY  
NEW TO IRELAND

By J. P. O'CONNOR and M. A. O'CONNOR\*

On 12th June 1982 we collected a female adult of *Calameuta pallipes* (Klug) at Curracloe, Co. Wexford (Irish Grid Ref T.113270). The specimen was swept from vegetation on sand dunes adjacent to a marsh between 8 and 9 p.m. No other specimens were observed. This species has not been previously found in Ireland. It is the first representative of the Cephidae to be discovered in this country.

Curracloe is situated near the extreme south-east of Ireland, just north of the town of Wexford. At Curracloe, there is a moraine marking the point where the Irish Sea ice (Midlandian age) was temporarily stationary. Sand dunes backed by marshes and lagoons, lie inland. The calcareous marsh flora includes the water parsnip, *Berula*, and the water dock, *Rumex hydrolapathum*. The area has been classified as a site of scientific importance with regional significance (Anon., 1981). Nevertheless during our visit, it was evident that drainage of the marsh had commenced.

The adults of *C. pallipes* have been recorded from May to July. It is widely distributed in England and Wales. It also reaches central Scotland (Quinlan and Gauld, 1981). Dr. M. C. D. Speight (pers. comm.) has found it as far north as Kincardineshire. Abroad, it has been recorded from central Europe north to Sweden and Finland, south to Greece (Benson, 1951). The larvae have not been recorded but its congener *C. filiformis* (Eversmann) inhabits *Calamagrostis epigejos*, small stems of *Phragmites communis* and various grasses (Quinlan and Gauld, *op. cit.*).

When the above distribution is considered, it is surprising that *C. pallipes* has not previously been found in Ireland. No records of the Cephidae are cited in a manuscript list of the Irish Symphyta, compiled by A. W. Stelfox and R. C. Faris, now in the National Museum of Ireland. Recent collecting for sawflies in a wide variety of grassland types in this country had not revealed *C. pallipes* suggesting that it is unlikely to be widely distributed here. In southern England, the species is not infrequent in small damp patches (e.g. by ditches) within dry grassland (Speight, *pers. comm.*). There was grassland (with grazing cows) and a wet ditch near the site of capture of our specimen.

It is of some significance that Stelfox failed to find *C. pallipes* at Curracloe despite several visits. It is unlikely that such an experienced hymenopterist would have missed this distinctive insect. It is possible therefore that the species is a recent immigrant.

The specimen has been deposited in the National Museum of Ireland.

\*c/o National Museum of Ireland, Kildare Street, Dublin 2.

### Acknowledgements

We are very grateful to M. C. D. Speight for confirming our determination of *C. pallipes* and for his most helpful advice. We also wish to thank A. B. O. Riordain and C. E. O'Riordan for their help and encouragement with this work.

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### The Red Admiral early in 1983

On January 8th 1983, a female *Vanessa atalanta* L. was observed at noon flying and basking near Plymouth. Strong and active. Rather tarnished. Shade temperature 43°F. At 12.25 a peacock was also seen. My notes show that *V. atalanta* has been seen in every month of the year over the last four years. I saw another female red admiral in excellent condition elsewhere in South Devon on January 15th 1983, in very windy conditions with a shade temperature of 53°F — A. ARCHER-LOCK, 4 Glenwood Road, Mannamead, Plymouth, S. Devon.

Whilst admiring some exceptionally early primroses in the Rewell Wood, near Arundel in West Sussex at noon today, I was astonished to be 'buzzed' by a red admiral, *Vanessa atalanta* L. in near mint condition. This seems to be further evidence that the species hibernates in this country with some degree of success. — E. C. M. HAES, 45 Grove Road, Worthing, W. Sussex BN14 9DQ, 13.i.83.

I was working in the garden this morning when suddenly there was a butterfly flying round me — the first of the season — it settled on the wall of the house on a climbing rose to sunbathe and I saw it was a Red Admiral! It must have been one of the ones we had last autumn and it must have hibernated — probably in the boiler house which has an unglazed window onto the garden. My last sighting of one last year was on 13th November. — Miss ELIZABETH WARREN, 31 Clifton Crescent, Flat 2, Folkestone, Kent CT20, 10.iii.1983.

I observed a Red Admiral on the 3rd March, an exceptionally warm and sunny day. It was on heather in the rock garden of the R.H.S. gardens at Wisley near Guildford, Surrey, about 2.30 pm. Surely not a migrant? — G. F. ARNOLD, Three Pines, Wisborough Green, W. Sussex.

NOTES CONCERNING CERTAIN WEST INDIAN  
BUTTERFLIES

By JOHN G. COUTSIS\*

In the period between 1952 and 1959 I was fortunate enough to spend my summers collecting lepidoptera on several West Indian islands. The totality of the material gathered there was deposited in the Peabody Museum, at Yale University, in New Haven, Connecticut, U.S.A.

The publication of the *Field Guide to the Butterflies of the West Indies* (Riley, 1975) and of Part 1 of the *Butterflies of the Neotropical Region* (D'Abrera, 1981), prompted me to present here a number of personal observations about some West Indian butterflies, which either do not quite agree with the opinions expressed by the authors of the two aforementioned works, or add new information about these butterflies.

1. *Prepona amphitoe* Godart: A single male captured and several other specimens observed in the El Yunque forest, in Puerto Rico. Not recorded by Riley from this island.

2. *Anaea johnsoni* Avinoff & Shoumatoff: The single male specimen taken by myself at Boutillier, Haiti, island of Hispaniola, was fresh, thus making it rather improbable that it was a chance vagrant from Jamaica, as suggested by Riley. Furthermore this butterfly does not possess any migratory habits.

3. *Hamadryas feronia* L.: Despite extensive collecting, I did not find this species in Haiti. Old records of it from that country probably refer to *Hamadryas februa* Huebner.

4. *Biblis hyperia* Cramer: I found this butterfly to be common in the xerophytic forests of St. John, Virgin Islands. This locality is not mentioned by Riley.

5. *Philaethria dido* Clerck: I did not find this species in Hispaniola despite extensive collecting. Old records of it from this area almost certainly refer to *Siproeta steneles* L. as suggested by Riley.

6. *Anteos clorinde* Godart: This species was found to be locally very common in the vicinity of the small town of Savannette, in eastern Haiti, near the border with the Dominican Republic. Recorded on several occasions and during different years, thus showing that it is well established there. Captured mostly at mud puddles. A series, both male and female, is deposited at Yale University. Neither Riley, nor D'Abrera, record it from Haiti.

7. *Phoebis editha* Butler: Quite abundant in the vicinity of Port-au-Prince, Haiti, but nowhere as common as *Phoebis sennae* L., which is sympatric and synchronic with it. D'Abrera considers the possibility of its being a localised and rare race of *sennae*, but in my opinion this butterfly is specifically distinct from *sennae* for the following reasons:

(a) The existence of anatomical differences in the genitalia.

\*4 Glykonos Street, Athens 139, Greece.

(b) The fact that despite sympatry and synchrony, no intermediate forms have ever been recorded. (c) The fact that the larval food-plant is different. I was able on several occasions to rear *senmae* on *Cassia*, from eggs laid either in the wild, or in captivity. Never once did I manage to get *editha* to lay eggs on *Cassia*, nor did I ever see it laying eggs on this plant in the wild. (d) The fact that females of *editha* observed in copulo, were always found mating with males of this morph.

An extensive series, both male and female deposited at Yale University.

8. *Phoebis avellaneda* Herrich-Schaeffer: I never saw this species in Haiti in spite of extensive collecting in almost all parts of the Republic. Perhaps older records are erroneous.

9. *Battus zetides* Munroe: The few specimens I observed and the single male I captured, were all found singly, at a considerable altitude and patrolling a specific area. Both sexes with tails on HW, so, apparently, Riley's tailless figure surely refers to a damaged specimen.

10. *Papilio machaonides* Esper: I reared this species on several occasions from eggs laid in the wild on the leaves of *Citrus*. The larva is astonishingly similar to that of *Papilio cresphontes* Cramer, thus showing the very close affinity between these two species, despite rather pronounced superficial differences in the imago.

11. *Papilio homerus* Fabricius: Though reported from Hispaniola in the 19th century, the possibility of its being presently found in Haiti should be excluded, because of the total destruction of the forests.

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## Obituary

T. D. FEARNEHOUGH. — It is with much regret that we have to record the death from lung cancer on the 22nd January, 1983, of T. D. Fearnough of Lymington, Hampshire. Born the 25th July 1911 at Sheffield, where he was employed as a metallurgist in the Admiralty, Mr. Fearnough contributed numerous notes and articles that were published in the *Record* from 1937 onwards. In 1961, he moved to Shanklin, and while there wrote an account of the butterflies of the Isle of Wight (in *Ent. Rec.*, 84: 57-64, 102-109). One of his most remarkable entomological achievements was the successful rearing of the Queen of Spain Fritillary: *Argynnis lathonia* L., from eggs laid by a female captured in 1949 by O. G. Watkins at Stoke Point near Plymouth (see *Ent. Rec.*, 61: 109-110). We understand his collection is to go to the Sheffield Museum. — J. M. C. -H.

## Notes and Observations

ERISTALIS TENAX L. (DIPTERA: SYRPHIDAE) IN JANUARY. — It may be of interest to note the occurrence of a single female Drone-fly, *Eristalis tenax* L. feeding on the winter-flowing Jasmine blossoms in my garden at East Ham, Essex, (O.S. Ref. TQ 4282) on the rather early date of 3rd January, 1983, during a period of mild weather. The species is, of course, one which hibernates as an adult in various sheltered locations, this individual probably having emerged from my garden shed. — C. W. PLANT, Assistant Curator, Natural Science (Biology), Passmore Edwards Museum, Romford Road, Stratford, London, E15 4LZ.

PANAGAEUS BIPUSTULATUS FAB. (COL.) IN GLAMORGAN. — Whilst searching a sandy area of the Merthyr Mawr Warren near Porthcawl (SS 872 767) which is covered with sparse grass and a few small poplars on the dull evening of June 22nd 1982, I discovered the pretty red spotted carabid *Panagaeus bipustulatus* running between the grass. This is not recorded in the old Glamorgan Coleoptera list of Tomlin (1933), and the National Museum of Wales has no record of it having been found before in South Wales. This would appear to be a new record for Glamorgan, and perhaps South Wales. The beetle is noted for a small square head with protruding eyes and a circular pronotum. The pronotum and elytra are covered in a fine golden pubescence which makes the insect very beautiful. — D. R. COPESTAKE, 5 High St., Gilfach Goch, Porth, Mid-Glam. CF39 8SS.

DORCATOMA CHRYSOMELINA STM. AND *D. FLAVICORNIS* F. (COL.: ANOBIIDAE) IN SUBURBAN KENT. — These two somewhat uncommon beetles are both noted as very rare in Kent in the VCH list for that county (Fowler, 1908), with one locality apiece: Tonbridge and Cobham Park respectively. I have seen no more recent records for Kent, but in any case it seems worth pointing out that both species occur in the extreme north-west of the county (S. E. London) — *chrysomelina* being *apparently* the more frequent. Of this, some half-dozen examples have occurred to me, singly and at longish intervals over a good many years, at m.v. light at Blackheath, and one or two more similarly at Charlton. Of *D. flavicornis* I have taken but one specimen in the district, on the trunk of a moribund hybrid poplar in a park at Charlton (18.vii.75). Perhaps my experience here reflects some unsuspected behavioural difference between the two species, but no such difference is detectable in ordinary collecting elsewhere. Both have their headquarters in the old forest areas where they are to be found not infrequently and sometimes together, in June and July, by brushing the foliage of ancient oaks, etc., where red-rotten wood is present, and may also be swept or found running on fallen branches. Fowler (1890, *Col. Brit. Isl.*, 4: 198) includes among his records of each species an old one for S. E. London.

The VCH entry for *Dorcatoma flavicornis* gives as the habitat "In fungi on trees" (unlike the data in '*Col. Brit. Isl.*' which are

virtually the same for both species). Tree fungi, however, are the development-medium not of *flavicornis* (nor of *chrysomelina* either) but of *serra* Panz. and *dresdensis* Hbst. — neither known to be British at that period — and also of the continental *punctulata* Muls. and *robusta* Strand (either or both of which might possibly yet be found here). Could, therefore, J. J. Walker's Cobham Park specimens of 1889 and 1895, or some of them, really have belonged to one of the other species just mentioned? Unfortunately, it seems unlikely that they could be traced after the lapse of a century. There appears to be no secure Kent record of *dresdensis* or *serra*, though the latter, at least, is now known to occur fairly widely. — A. A. ALLEN.

**TISCHERIA ANGUSTICOLLELLA DUPONCHEL IN KENT.** — During a visit to Thornden Wood, Whitstable on 11th September 1982, I found several mines of *Tischeria angusticollella* many of which had been parasitised. This is the first record for Vice County 15 and I believe only otherwise recorded in the West of the County from Chattenden. — N. F. HEAL, Fosters, Detling Hill, Nr. Maidstone, Kent.

**THE PRIVET HAWKMOTH: SPHINX LIGUSTRI L. IN VICE COUNTY 16 (WEST KENT).** — Apropos B. K. West's note in *Ent. Rec.*, 94: 242 on the apparent decline of this moth, I may say that while I was trimming my privet hedge here in 1982, I noticed a larva of this species, the first seen for many years. — W. G. St. JOHN, 11, Vancouver Road, Forest Hill, SE23 2AG.

**TELEIODES VULGELLA HBN. ON JUNIPER.** — On the 8th May 1982, whilst beating Juniper bushes in Surrey, two small Gelechiid larvae were dislodged from an isolated bush. These fed up on Juniper needles and two specimens of *T. vulgella* emerged on 31st May. The normal foodplants for this species are *Crataegus* or *Prunus spinosa*. PAUL SOKOLOFF, 4 Steep Close, Orpington, Kent.

**MOTHS ATTRACTED TO ROSE HIPS.** — Recently I came across the note written by Dr. N. Birkett (*Ent. Rec.* 69: 75) in which he relates finding moths of two species only, *Conistra vaccinii* L. and *Eupsilia transversa* Hufn. attracted to rowan berries at Kendal, Westmorland, in October 1953, a time of the year when ivy bloom or sugar may bring a wide variety of moths for sustenance. On March 10th, 1961, I was collecting freshly emerged *Earophila badiata* Hbn. which were settled on the wild rose bushes at Eynsford, Kent, when in the torch light I noticed several Noctuid moths resting upon the hips which were largely black rather than orange; they were of two species — *C. vaccinii* and *E. transversa*. Subsequent searching revealed that many of the fruits had attracted moths, some of which appeared to be imbibing, and all were of these two species with the exception of two specimens of *E. badiata*. Two days before, the common *Orthosia*s and other early species had fallen in showers when near-by mature sallows had been shaken, although very few *C. vaccinii* and no *E. transversa* were noted. It appears therefore that these two fruits at a certain stage of ripeness, while not attracting moths in general, may have a strong and selective attraction for *C. vaccinii* and *E. transversa*, one before and one after their hibernation. — B. K. WEST, 36 Briar Road, Bexley, Kent.

**SATURNIA PAVONIA (L.) IN ASSOCIATION WITH POTENTILLA PALUSTRIS (L.) SCOP. IN WEST CUMBRIA.** On reading the note by Dr. P. D. Hulme regarding the foodplant of *Saturnia pavonia* (*Entomologist's Record*, 93: 153) it prompted me to record the following brief observation. While searching for the weevil, *Phytobius comari* (Herbst) on Williamsons Moss, Eskmeals, SD09 on 26 June, 1982 I came across several large larvae (possibly final instars) of *S. pavonia* which were feeding low down on the leaves of a few individual plants of *Potentilla palustris* (L.) Scop. (Marsh cinquefoil). The larvae were quite difficult to detect at first while on the plants as the colour of the body resembled very closely that of the foliage. *P. palustris* was the dominant plant in the open areas on the moss, with smaller communities of *Potentilla erecta* (L.) Raush, *Calluna vulgaris* and *Erica* sp. — R. W. J. READ, 43 Holly Terrace, Hensingham, Whitehaven, Cumbria, CA28 8RF, 22.xii.1982.

**CROCIDOSEMA PLEBEJANA ZELL. IN KENT.** — On 9th. September 1982 a specimen of *Crocidosema plebejana* Zell. was captured in my garden m.v. trap. This species is normally confined in the British Isles to the Scillies and South-West England where it feeds on *Lavatera arborea* (Tree Mallow). It would seem probable that my specimen was an immigrant, as an example of *Spodoptera exigua* (Hübner) was captured on the same night. — P. J. JEWESS, Boyces Cottage, Newington, Sittingbourne, Kent ME9 9JF.

**THE NI MOTH AND OTHER INTERESTING LEPIDOPTERA IN 1982.** — On the evening of 18th September 1982, I accompanied Bernard Skinner to the Peacehaven area, Sussex, where we met Mr. C. Pratt prior to working an area of agricultural land for *Trichoplusia ni* Hb. Shortly after dusk on the first inspection of a series of MV lights being run, one female *T. ni* Hb. was taken. What promised to be a most interesting evening after this record, was thwarted by the arrival of heavy mist and a drop in temperature. No other moths of note appeared that evening, but my MV trap kept producing the same two butterflies, one *Cynthia cardui* L. and a *Vanessa atalanta* L., despite repeated efforts to lose them in a nearby hedge. The *T. ni* Hb. was retained by Mr. Skinner in an attempt to obtain ova, but without success.

The MV trap in my garden produced the first specimen of *Autographa bractea* D. & S., that I have seen in the area, on the night of 31st July/1st August 1982. With it in the trap were about 75-100 *Autographa gamma* L. Two nights later, together with a reduced number of *A. gamma* L., I found a worn specimen of *Eurois occulta* L. It was a mid grey hue consistent with the continental form.

In mid. September I noted a steady arrival of specimens of *Ennomos autumnaria* Wernerb. at light. Some seasons pass here without any records of this species. At the same time, the first specimens of *Rhyacia simulans* Hufn. arrived. Probably about a dozen moths, and I have not noted this species here prior to 1982. — D. E. WILSON, Joyce House, Green Tye, Much Hadham, Herts. SG10 6JJ.

THE BROWN-TAIL: *EUPROCTIS CHRYSORRHOEA* L. AND SCARCE BLACK ARCHES: *NOLA AERUGULA* HBN. IN S. E. YORKS IN 1982. — By midnight on 13th July, 1982, a slight offshore breeze had brought very cold air down the cliffs at Flamborough, near Bridlington, and few moths were coming to the m. v. lamp. I was about to switch off the generator when a male *Euproctis chrysorrhoea* settled on the sheet, so I stayed a little longer. Five or ten minutes later my attention could not fail to be drawn to a tiny, white moth, eight or nine feet from the lamp and flying on a steady course from the beach with no intention of stopping. I netted it, expecting a micro, but on examination realised it was one of the Nolidae. The fore-wings were entirely white, having only the faintest trace of a grey submarginal line, but the three raised scales were prominent. The following morning I confirmed that it was *Nola aerugula* and as it sat quietly all day and seemed to tolerate being moved, I decided to photograph it. Alas! It escaped and vanished within seconds. Although the room was besieged for several days, it never even appeared in the window and I must confess that I now possess neither specimen nor picture.

Following the first capture in Yorkshire two years ago, at Spurn (*Ent. Rec.* 94. 99), this is now probably the most northerly record of *N. aerugula* in Britain. Up to 1981, seven *E. chrysorrhoea* had been seen this century in Yorkshire: all were coastal and five appeared on 16th July, 1973 (*Yorkshire Naturalists' Union, Annual Report*, 1973). It is perhaps more than coincidence that, on that date, the only county specimen of *Meganola albula* D. & S. (Kent Black Arches) accompanied three of them into my garden trap near Filey. — P. Q. WINTER, West End Farm, Muston, Filey, N. Yorks, YO14 0ES. [Mr. Winter's *aerugula* appears to conform to *ab. candidula* Stdgr. — J. M. C.-H.]

POLYDESMUS ANGUSTUS LATZEL (DIPLOPODA: POLYDESMIDA) FEEDING ON CARRION. — During a stay in Haltwhistle, Northumberland, in November 1982 one of us (JR) had occasion to examine the corpse of a red squirrel, *Sciurus vulgaris* L., which had been flung onto a rocky outcrop of a quarry. The squirrel was killed and brought to the house by a cat on 1 November when it was disposed of on the quarry. On 2 November the corpse was examined and was found to be covered with very large numbers of Polydesmid millipedes. All parts of the squirrel, including the tail, were covered with millipedes at various stages of development. The weather and soil were damp, and the area was overgrown with grass, nettles and willowherb. A sample of the millipedes was preserved in alcohol. The specimens were examined by YZE and it was found that all the identifiable specimens belonged to the common species *Polydesmus angustus* Latzel. Also present were several specimens of the woodlouse *Oniscus asellus* L., one light-coloured aphid and a few small Staphylinid beetles.

The presence of this species on a corpse is interesting, as Polydesmids are generally regarded as being feeders on decaying vegetable, rather than animal, matter; *P. angustus* is, in particular, associated with cultivation. These observations are also of interest in

the field of forensic entomology where the succession of insects and other arthropods is of use in attempting to determine the time of death. Further observations on this point would be of interest. Y. Z. ERZINCIOGLU and J. RICHARDSON, Department of Zoology, University of Durham, Science Laboratories, South Road, Durham DH1 3LE.

*EUXOA CURSORIA* HUFN. IN MID-KENT. — On 3rd. August 1982 a male specimen of *Euxoa cursoria* Hufn. in excellent condition was captured in my garden m.v. trap at Newington, N. Kent. I believe that all the other confirmed Kentish records of *E. cursoria* are from G. H. Youden at Dover and this would constitute the first inland record for this species. — P. J. JEWESS, Boyces Cottage, Newington, Sittingbourne, Kent ME9 7JF.

APATELE EUPHORBIAE F.: ONE NIGHT OF ABUNDANCE. — On August 4th, 1974, near Fanore on the coast of Co. Clare I operated my m/v light on the open limestone hills overlooking the coastal road. The night was mild and somewhat illuminated, despite a little patchy cloud, by a near full moon in the eastern sky. Having seen *A. euphorbiae* but once previously, a specimen at Aviemore, I was amazed to find this insect arriving at the sheet in embarrassing numbers: sixteen were recorded definitely but there must have been over twenty, mostly in excellent condition, and so far as I could tell all males. Only one other species arrived in quantity, that being *Selidosema brunnearia* Vill., mostly males and also in good condition, although surprisingly the three females seen were ragged.

The light was in operation at the same place the following night, under seemingly not dissimilar meteorological conditions, but whereas *S. brunnearia* was again much in evidence, *A. euphorbiae* did not appear, and it may be added that of those seen the previous evening less than half were taken. — B. K. WEST, 36 Briar Road, Bexley, Kent.

THE DEATH OF A BUTTERFLY. — This day, 22 August 1962, was one of the few, warm, sunny days of a dreadful August. A female brown hairstreak had hatched in my study on 21 August. I put it in a pill-box and at 14.30 hrs 22 August I went out with my youngest son, aged nine, to release her at the spot where I had found her as an egg. This egg, and 24 more, I had found in September 1961 by watching her dam lay on little, stunted sloe bushes on the edge of Kimpton Down Wood, 2 miles from my home.

All through the long, cold winter of 61/62 this small white egg had remained glued to the sloe twig on which I had found it. I had kept it in my cellar. In May, when the first young leaves appeared on the sloe bushes, the egg was placed in warmer surroundings. Soon the very small larva emerged and took its first meal of sloe leaf. It thrived, pupated, and then appeared as a perfect butterfly. I released her at the exact spot where I had first seen her mother. She fanned her lovely orange and black wings several times, and then took her first flight. With astonishing speed she mounted to the top of a tall oak tree; the same tree to which I had seen her mother fly after a bout of egg laying: a remarkable fact.

While watching the oak tree to see if I could see my brown

hairstreak again, I noticed a dozen or more purple hairstreak flying round the top of a neighbouring oak. Soon I saw some much lower down, and shortly took two very worn females as they sipped nectar from bramble blossoms at the foot of the tree. When released they quickly mounted to tree-top height. Then, suddenly, I saw one purple hairstreak start coming earthward. It pitched on oak leaves several times, but seemed not to have the strength to hang on to the leaves, shaken by a brisk breeze. Slowly it fluttered ever lower and collapsed in the grass at my feet. I let it cling to my finger and examined it. It was a very worn and tattered male. Soon he fell from my finger and expired in the grass. I imagine the sight of his fellows, playing in the warm sun, had made him try one last fling. But old age had caught up with him: he just had no strength left in his little body. So his short, gay and charming dance of life had come to its appointed and apparently painless end.

Thus my young son, so early in his life, had learnt the orderliness, the inevitability, and the kindness of nature. I was left wondering how seldom it must be that one is fortunate enough to witness the death, from old age, of a tiny butterfly. — BRIG. E. C. L. SIMSON, 4 Durnford Close, Chilbolton, Stockbridge, Hants. 9.xii.1982.

ZERINTHIA RUMINA L.: A SECOND BROOD, AND OTHER INTERESTING BUTTERFLIES IN SPAIN. — On the 14th September 1982, we visited a coastal locality in the Province of Granada, Spain, in which we encountered four fresh imagines of *Z. rumina*, which must represent a second generation; an event for which we have been unable to find previous reference.

The locality was all the more interesting for we observed two examples of *Danaus plexippus* L. and four of *D. chrysippus* L. In condition they varied from fresh to very worn, and the presence of some *Asclepias* species suggested local emergence. Other butterflies noted included *Gegenes nostradamus* Fabricius and *Zizeeria knysna* Trimen. — SHEILA and DAVID HOWELL, 12 Harrow Dene, St. Peters, Broadstairs, Kent.

EPIPHYAS POSTVITTANA WALK. NEW TO KENT AND THE LONDON AREA. — An unfamiliar Tortrix taken at my m.v. lamp here on 1st June, 1982, was tentatively named much later from Bradley, Tremewan & Smith (1973, *British Tortricoid Moths*, 1) as the above species; it is a male in very fair condition. Of the four examples figured it most resembles fig. 15 (pl. 32), but the forewings are redder in tone and rather more variegated, besides other minor differences. At the recent Verrall Supper, through the kind offices of Lt.-Col. Emmet, I was able to show the specimen to Mr. E. C. Pelham-Clinton, who with two expert colleagues obligingly confirmed it as *E. postvittana*.

This native of Australia has been established in south-west England, chiefly west Cornwall, for about half a century; it has occurred also in Devon, and once in Hampshire (*op. cit.*: 127). I am informed that it has recently been taken in Essex, but the present capture appears to be the first in Kent or the London suburbs. It is clear that the species has lately been spreading eastwards. — A. A. ALLEN, 49 Montcalm Road, Charlton, London SE7 8QG.

NEW VICE-COUNTY RECORDS OF RHIZOPHAGUS SPECIES (COL., RHIZOPHAGIDAE). — I have in my collection the following species from vice-counties not listed in the distribution given by Peacock (1977, *Handbk. Ident. Br. Insects* 5(5a)).

*Rhizophagus depressus* (F.), Slindon Common, West Sussex (VC 13), 23.v.1969, under bark of unidentified conifer stumps; *Rhizophagus nitidulus* (F.), Brampton Bryan Park, Herefordshire (VC 36), 21.v.1980 and Reddings Inclosure, Forest of Dean, Monmouthshire (VC 35), 31.v.1980, in both cases under the bark of fallen oak. — J. COOTER, 20 Burdon Drive, Bartestree, Herefordshire, HR1 4DL.

THE DRINKER: PHILUDORIA POTATORIA L. IN JANUARY. — On the 9th January 1983, Mr. David Blake, a member of the "Mid-Sussex Breakers Entomological Group" found a male Drinker Moth on the pavement outside St. Francis Hospital, Haywards Heath. Although nearly dead when found, it was in perfect condition having apparently recently emerged. I have since seen the specimen which is a pale example, but of about average size with a wing span of approximately 52mm. — T. NEWNHAM, The Victory, Staplefield, Haywards Heath, Sussex RH1 76EU.

EARLY APPEARANCE OF THE HEATH FRITILLARY: MELICTA ATHALIA ROTT. IN 1982. — I found this butterfly on the wing in the Chestfield area of North Kent on 1st June 1982, in a rather patchy partly overgrown clearing mainly of sweet chestnut coppice. At least a dozen were seen, including several females. As quite a number were already fairly worn, the indications are that the insect started emerging about the 25th May. — J. PLATTS, 11 Maydowns Road, Chestfield, Whitstable, Kent.

OBSERVATIONS ON THE SMALL WHITE: PIERIS RAPAE L. AND AN ABERRATION. — In July 1982 while looking over numerous Small Whites on a nearby allotment, I noticed a pair *in cop.* that were flying strangely. The male was dangling from a hair-like cord attached to the female and spinning round. On closer observation, the female was seen to be aberrant, with a bold spot between the two forewing spots. I carefully took them home, put them in a cage with flowers and a choice of foodplants. I expected that in due course they would part naturally, but they were still joined together the following morning sitting on the cage muslin. The cord was about ½ inch long, so I decided to separate them and cut the cord about midway. Despite this, later on that day I was surprised to see the female actively depositing (on the underside of leaves, chiefly of Hedge Garlic: *Alliaria officinalis*). She died the following morning having deposited about 130 eggs. From these, the aberrant form in the F1 generation ranged from a light dusting of dark scales between the forewing spots, to a bold spot of the same size as the other two, and in one case a light dusting of scales carrying on to the apical blotch (ab. *fasciata* Tutt). Further matings produced many eggs, but the resulting larvae were not healthy, feeding was extremely slow and many have died. Notwithstanding this however, I have some pupae and one hopes to carry on the aberration in 1983. — J. H. PAYNE, 10, Ranelagh Road, Wellingborough, Northants, NN8 1JG.

LEPTURA SCUTELLATA FAB. (COL., CERAMBYCIDAE) ON THE SURREY/BERKS. BORDER. — Windsor Forest in Berkshire is generally given as a good locality for this longicorn. Therefore it was not too much of a surprise to find one in flight at Virginia Water on 7.vi.82 near to but outside the entrance of Windsor Great Park. However, Kaufmann (1948, *Entomologist's mon. Mag.*, 84: 66-85) does not record it from Surrey and there seems to be no such report since. — D. PRANCE, 23 Brunswick Road, Kingston Hill, Kingston-upon-Thames, Surrey.

AN EARLY MACROGLOSSUM STELLATARUM L. — During a sunny spell on a cold morning on 5th. April, 1983 I was greatly surprised to see a Humming-bird Hawkmoth, *Macroglossum stellatarum* L. flying in my garden. The moth inspected polyanthus in flower and a flowerless fuchsia (which attracted several last autumn) but soon flew off at high speed. The moth must have been hibernating near-by. — R. C. DYSON, 58 Stanford Avenue, Brighton, E. Sussex, BN1 6FD.

NOTES ON VANESSA ATALANTA L. IN 1982. — The larvae of this butterfly were abundant on nettles the end of July and much of August in a rough field a few miles south of Shaftesbury. On 22nd and 23rd August, Mr. John Simner and myself collected around 30 larvae from which 28 adults emerged in September. John Simner made the interesting observation that only one of these was a female. Whether this is normal or not we do not know, but it is surely remarkable and I should welcome comments or hear of any similar observations. It is also interesting to note that this brood contained abs. *bialbata* Cabeau and *fracta* Tutt and that the single female had a yellow streak in the red band on one forewing. Finally, I may mention that on 3rd October, a warm day, among 20 *atalanta* feeding on rotting apples here in our garden, one which I captured has the normal red band on right hindwing yellow and the bands on the other wings paler than normal (ab. *flavescens* Fritsch). — R. D. G. BARRINGTON, Old College Arms, Stour Row, Nr. Shaftesbury, Dorset.

BUDDLEIA DAVIDII AND LEYCESTERIA FORMOSA AS LARVAL FOODPLANTS OF THE VAPOURER MOTH. — Dr. D. F. Owen's note in *Ent. Rec.* 95:20 concerning lepidopterous larvae feeding on *Buddleia davidii* omits the species I most readily associate with this shrub, for in the 1950s when *Orgyia antiqua* L. was much commoner in N.W. Kent than now, my parents' garden at Dartford, Kent, possessed a colony of this species for many years, the larvae feeding on climbing and rambler rose and *Buddleia davidii*. My collection contains specimens from larvae collected there from this shrub on July 7th, 1968.

A larval foodplant of *O. antiqua* I have not seen noted is *Leycesteria formosa* [Caprifoliaceae], a shrub native of the Himalayas and Western China. Each summer from 1949 to 1955 the caterpillars largely defoliated two of these shrubs and rose bushes bordering a school quadrangle at Crayford, Kent, and the cocoons almost covered the ceiling of an adjacent porch. — B. K. WEST, 36 Briar Road, Bexley, Kent.

THE GREAT GREEN BUSH-CRICKET: *TETTIGONIA VIRIDISSIMA* L. AND SPECKLED BUSH-CRICKET: *LEPTOPHYES PUNCTATISSIMA* (BOSC.) IN PEMBROKESHIRE. — Although *Tettigonia viridissima* L. is well known as an inhabitant of southern Pembrokeshire (see Haes, E.C.M. 1979., *Provisional Atlas of the Insects of the British Isles: Part 6 Orthoptera*), as I had seen for myself in August, 1970, I think it is still worth mentioning here that I found it quite plentiful on the Marloes Peninsula during August, 1981.

At 1745 hrs. on August 25th I counted a dozen males stridulating in the little reed marsh which straddles the road from the Dale to Marloes where it crosses the head of a little estuary (map. ref. SM 812084). In and around Marloes village several were to be heard stridulating every afternoon and evening from the hedgerows, and my daughter heard and saw them above Marloes Sands.

My daughter also tells me that while on a Young Ornithologists' Club holiday based on Broad Haven and led by Noel Jackson they noted Speckled Bush-crickets *Leptophyes punctatissima* (Bosc.) on Dinas Island during August, 1981. Judging from Haes (1979) this species appears to have been unrecorded previously from this part of north Pembrokeshire. — J. F. BURTON, 11, Rockside Drive, Henleaze, Bristol, BS9 4NW.

LOZOTAENIODES FORMOSANUS GEYER AND PALPITA UNIONALIS HBN. IN WARWICKSHIRE. — In 1982, I took single specimens of these two moths at the m.v. light trap here in my garden. The Tortricoid *L. formosanus* occurred on 21st July, and the Pyralid *P. unionalis* on 8th July. I should be interested to know if either species has been previously recorded from Warwickshire. — C. WALE, 150 Dulverton Avenue, Chapelfields, Coventry, Warwickshire CV5 8HB.

THE SATELLITE: *EUPSILIA TRANSVERSA* HUFN. FEEDING IN JANUARY. — I found an example of this species feeding from a damaged wild rose berry along a country lane near Great Chart, Kent, on 26th January 1983. There were only two 'hips' on the shrub, and the moth which appeared to be female had chosen the bruised berry. An hour later and two hours after dark the moth was still there. I also had one of this species at light and an early *Alsophila aescularia* D. & S. turn up on a mild evening before the February cold spell set in. — J. PLATTS, 11 Maydowns Road, Chestfield, Whitstable, Kent.

ANDRICUS QUERCUSCALICIS BURGSDORF. — The year was omitted from my Note (*antea* 86). It should read "On August 25th 1982 Norman Heal and myself . . ." — L. CLEMONS.

NEMOPHORA DEGEERELLA L. (LEP.: INCURVARIIDAE) IN SCOTLAND. — There appears to be no published confirmed record of *Nemophora degeerella* L. from Scotland. George Bolam (1930, *Hist. Berwicks. Nat. Club* 27 (2), 229) makes a tentative claim with the comment that 'James Hardy . . . thought that he had seen it in Pease Dean, Berwickshire.' It has however long been known from the border counties of England e.g. Fenwick Wood, Northumberland (Bolam, 1930 *ibid.*) and Carlisle, Cumbria (Day, F. H. (1901) *V. C. H. Cumberland* Vol. 1, 137) so its absence from Scot-

land would be surprising. It is now a number of years since I first met the species in Scotland and perhaps I should, somewhat belatedly, put the facts on record.

On June 25th 1977 it was flying in some numbers in the early afternoon in bright sunshine in and about a small clump of birch and sallows on open heathland at Longbridgemuir, Dumfriesshire (V.C.72: O.S.Ref. NY/05.69). The following year I met it again in another locality on the opposite side of the Nith estuary. About noon on June 16th 1978 there was a large swarm of 200+ individuals composed of both sexes, but with a heavy preponderance of males, flying between 3ft to 5 ft above the path leading into the N.N.R. at Kirkconnell Flowe from the south-east. I have since seen this species on numerous occasions in the last half of June and early July flying among the birches in both 'squares' covered by this reserve (V.C. 73; O.S. Ref. NX/9670 & NX/9769.) – (Sir) ARTHUR B. DUNCAN, Castlehill, Kirkmahoe, Dumfries DG 1 1RD.

MELICTA DEIONE BERISALII RUHL AT MARTIGNY. – After reading Dr. C. J. Luckens comment (*Ent. Rec.*, 95:13) "There have been few reports of *M. deione berisalii* recently – in fact we are unable to trace any records in literature for over thirty years". I feel rather guilty in not recording my experiences in the Rhone Valley for the years 1967 and 1969, when in the former year on June 20th, I found this species in reasonable numbers and took a dozen in perfect condition. They occurred in a small area 30 to 40 sq. yards in size, in the rock face about 100 yards up the Martigny/Salvan road which runs above what used to be called in Tutt's day – "The Undercliff Martigny to Vernayaz". Unfortunately owing to a heavy fall of rock, the path along the Undercliff at the Vernayaz end was blocked about 200 yards in from the Montreux/Martigny road but I found it could still produce 29 species in one morning. The following is a list of species observed. *Pyrgus malvae* L., *P. fritillarius* Poda, *Carcharodus lavatherae* Esp., *Thymelicus flavus* Brunn., *Ochlodes venatus* Bremer, *Parnassius apollo* L., *Aporia crataegi* L., *Artogeia napi bryoniae* Hbn., *A. rapae* L., *A. manni* Mayer, *Leptidia sinapis* L., *Heodes virgaureae* L., *H. alciphron gordius* Sulz., *Cupido minimus* Fuessly, *Aricia allous* Hbn., *Agrodiaetus amanda* Schneider, *Lysandra bellargus* Rott., *Polyommatus icarus* Rott., *Vanessa cardui* L., *Aglais urticae* L., *Melitaea cinxia* L., *M. didyma* Esp., *M. phoebe* D. & S., *Hipparchia alcyone* D. & S., *Melanargia galathea* L., *Maniola jurtina* L., *Aphantopus hyperanthus* L., *Lasiommata megera*, *L. maera* L. – L. J. EVANS, 73, Warren Hill Road, Birmingham B44 8HA.

ESPERIA SULPHURELLA (FABRICIUS) (LEP.: OECOPHORIDAE) PUPAE IN JANUARY. On 24th January, 1983, my attention was drawn by a colleague, Mr. C. Smith, to several lepidopterous larvae and pupae which he had discovered beneath the bark of a small dead stump of a sycamore *Acer pseudoplatanus* at St. Mary Magdalene Churchyard, Museum Nature Reserve, East Ham, Essex, (O. S. Ref. TQ4282). I collected a total of ten pupae and eight larvae and brought these into the laboratory where, at a temperature of 22° to 25° C., all the larvae pupated within 48 hours. The moths

emerged between 21st February and 9th March, 1983, and I was surprised to discover that they were all the Oecophorid *Esperia sulphurella* (Fab.).

Undoubtedly it was the short period of mild weather at the beginning of January, (which also brought forth from hibernation *Alucita hexadactyla* L. and *Agonopterix alstroemeriana* C1.), that was responsible for the early pupation of some of the larvae, but it is interesting that the ensuing frosty weather, with overnight temperatures down to minus 4°C. locally, did not harm these pupae. Presumably, those which failed to pupate during the early mild spell were not so well fed as those which did. Those ten insects collected as pupae all emerged within a seven day period, from 21st to 27th February; the eight collected as larvae, although they pupated within 48 hours of collection, all emerged somewhat later, between 6th and 9th March. There were no significant differences between the imagines of either batch. — C. W. PLANT, Assistant Curator, Natural Science (Biology), Passmore Edwards Museum, Romford Road, Stratford, London, E15 4LZ.

EARLY APPEARANCE OF *ORTHOZIA STABILIS* D. & S.: COMMON QUAKER IN SURREY. — I operate a Rothamsted light-trap at Haslemere, Surrey, as part of the Rothamsted Insect Survey. On the night of January 7th, 1983, a single *Orthozia stabilis* was the first moth to be caught this year. The weather during early January had been very mild with minimum air temperatures at Alice Holt Lodge (13 km north west of the trap) ranging from 1.4°C on January 7th to 10.4°C on January 6th.

The trap at Haslemere has operated continuously since 1973 and during this time the mean date for *O. stabilis* first appearance is March 25th, with a range from March 1st in 1975 and February 29th in 1976 to April 21st in 1979. The record on January 7th this year is 104 days earlier than the mean for the previous ten years, and 53 days earlier than in 1975 and 1976.

These dates for the first appearance of *O. stabilis* at light in Haslemere are in agreement with Heath (Ed.) 1979, *The Moths and Butterflies of Great Britain and Ireland*, where it is stated that this species "Occasionally emerges during mild weather in mid-winter, but the main emergence is from mid March". — T. G. WINTER, Forestry Commission Research Station, Alice Holt Lodge, Wrecclesham, Farnham, Surrey, 21.ii.83.

NOTES ON THE LARVA OF *OMPHALOSCELIS LUNOSA* HAW.: THE LUNAR UNDERWING (LEP.: NOCTUIDAE). — From eggs laid in October 1982 by a female of this species taken at Dartford, Kent, larvae hatched about three weeks later. They were kept in a plastic box and supplied with various grasses gathered from a weedy ditch at the back of my garden. Larval development was extremely slow throughout the early winter, and by Christmas most had moulted only once and were little more than a quarter inch long. The container was kept in the sun lounge where there was plenty of damp air. By New Year there had been a number of losses, and although a few larvae reached the third instar, only three survived to the end of January. By February only one larva

remained and was preparing for the third moult by the middle of the month. The final instar was reached by early March when feeding became more intense. Within a week the larva was full grown and eventually went to earth by the middle of the month.

E. Newman (*Illustrated Natural History of British Moths*) furnishes a good description of the larva (after Guenée), but South (*Moths of the British Isles*) gives a most inadequate one. For those not familiar with the full grown larva, here is my description of it.

Length about 25mm. Body greenish-whity-grey. Three whitish lines along back, dorsal one more distinct, the others edged darker. Each segment has four white-centred raised spots. On the first two rings these are in a line at right angles to the dorsal line. The other body segments have the front pair of spots much closer to the dorsal line than the pair behind. On the penultimate ring they are placed symmetrically, whereas on the last segment the spots are placed obliquely. Spiracles whitish, ringed with black, a darker somewhat indistinct line below them. Head: smooth, dark with a very distinctive dirty cream coloured prothoracic plate edged behind with dark brown. The larva tends to resemble an Agrotid with fairly firm skin texture and conspicuous raised spots, but the dark head and distinctive plate gives the impression of an *Apamea*.

In conclusion, I may add that in my experience of searching for larvae in the spring months, I have only infrequently encountered the larva of *O. lunosa*, and the only wild larvae of this species found by me were at Portland (Dorset). — J. PLATTS, 11 Maydowns Road, Chestfield, Whitstable, Kent.

COMBAT BETWEEN RED ADMIRAL AND SPECKLED WOOD OVER FALLEN FRUIT. — On the 9th September 1982, my wife Mary witnessed here a remarkable combat between a Red Admiral and a Speckled Wood over a decaying pear lying on a garden path. They buffeted each other with their wings in a most determined manner for some little time. Finally, *Vanessa atalanta* flew off, leaving *Pararge aegeria* to enjoy the spoils of victory. We had no idea that the latter had a penchant for the juice of over-ripe fruit. Red Admirals and Commas are the only butterflies we have noticed as having a liking for it. — P. B. SANKEY-BARKER, Plas Langattock, Crickhowell, Powys NP8 1PA.

THE BLOXWORTH SNOUT: HYPENA OBSITALIS HBN. IN 1983. — On March 6th I disturbed a moth in my garage, which flew and resettled on a beam, and was easily boxed. I recognised it as a specimen of this rare species and have checked its identity against the series in the B.M. (N.H.). The circumstances suggested that it had hibernated in the garage. — M. W. F. TWEEDIE, Barn House, Rye, Sussex TN31 7PT, 15.iv.83. [This appears to be only the eighth British specimen and the first for Sussex of this suspected immigrant. Previous records are: Bloxworth, Dorset, 21.ix.1884 (Pickard-Cambridge, *Entomologist*, 17:265); "Cambridgeshire 1895", one so-labelled (in RCK coll. in BMNH); Near the Frome at Iford, Dorset, 11.vii.1917 (Haines, *Entomologist*, 59: 256); Ummera, Co. Cork, 5.x.1936 (Donovan, *Entomologist*, 69:264); Boscastle, Cornwall, 12.ix.1943 (Richardson, *Entomologist*, 79: 22); St. Agnes,

Scilly Is., 8.ix. 1962 (Richardson, *Ent. Rec.*, 75:181); Brownsea Island, Dorset, 10.x.1965, A. T. Bromby (Lorimer, *Proc. Dorset Nat. Hist. Arch. Soc.*, 87: 39). The Paignton record in *Entomologist*, 50:44 referred to *H. obesalis* Tr. and was corrected in *Entomologist*, 79:212. — J. M. CHALMERS-HUNT].

## Current Literature

**A Key to the Families of British Diptera** by D. M. Unwin. 1981.

Field Studies 5: 513-553. An Aidgap Guide available from Field Studies, Nettlecombe Court, Williton, Taunton, Somerset TA4 4HT.

This new artificial key to the families of British Diptera was developed by Denis Unwin because of problems experienced in using the existing keys. It includes a brief introduction on the characters of flies in general and on the best means of taking identification to the species level within families. The keys employ easily seen characters, which are well illustrated by line drawings and a short diagnosis of each family is provided. In general it works well although some aberrant genera run down with difficulty. The key to the acalypterate families, which departs from previous practice in dispensing entirely with costal breaks, is not entirely satisfactory and it is in this area that difficulties are most often experienced by those familiar with the Diptera. A few minor inaccuracies in the figures, e.g. the Sciaridae wing have been noted and the numbers of species in some families is widely underestimated. This work should be of most assistance in the context of the Field Studies courses for which it was intended. — P. J. CHANDLER.

**Insect Neurohormones** by M. Raabe. xiv + 352 pp. 91 text figs., 48 tables. A5, boards. Plenum Press, 1982. price US \$ 51. (translated from original French).

It is a daunting task to attempt to produce an up-to-date textbook of any aspect of insect endocrinology, and this volume is a reasonable "primer" for many aspects of this complex and rapidly advancing subject.

The structure of the book is logical, beginning with the source sites and release modes of neurohormones followed by a consideration of the various functions in which neurohormones have been shown to be involved, such as endocrine gland activity, diapause, reproduction, visceral muscle functioning, colour change, behaviour, water and ion balance, protein, sugar and fat metabolism, tanning and other processes occurring at the cuticle level. Each section within each chapter is numbered for ease of reference, and the contents pages permit ready access to the desired information. The narrative style is terse, and the treatment of many topics is vanishingly brief — however the reader is never left without a reference from the bibliography, which extends to over 60 pages. Numerous text figures and tables attempt to give an overview to each topic.

This is not a book for the uninitiated, and at the price purchase will probably be confined to institutions. However most active physiologists and endocrinologists would benefit from having access to this volume. — PAUL SOKOLOFF.

**Large White Butterfly, The Biology, Biochemistry and Physiology of *Pieris brassicae* (Linnaeus)** by John Feltwell. Roy. 8vo., decorated hard cover, i-xvii, 1-535pp., 10 plates, 79 tables and 50 figures. Series Entomologica Vol. 18. W. Junk, P. O. Box 13713, 2501 ES The Hague, Holland. 1981. Price \$98 (about £52).

Few books have been published on a single butterfly species, and of those that have, still fewer cover the subject adequately. Not so the book under review, whose author seems to have left no stone unturned in his search for every scrap of information pertaining to the Large White, and in the process has collected 8,000 references to the species, of which 4,000 have been selected for this compilation with a brief indication of their contents.

Although a major pest of cabbages, it is the ease with which it can be reared in captivity — and on synthetic diets in particular — that makes the Large White so ideal for experimental purposes in the laboratory, and of such importance to the economic entomologist. With the research scientist especially in mind therefore, the author has in this monograph outlined the work already done and shown where to find the information resulting.

The preface by Miriam Rothschild is followed by 18 specialised chapters embracing an enormous amount of knowledge on every aspect of the Large White as under: Nomenclature (in part by R. I. Vane-Wright), Distribution, Life history, Foodplants, Breeding, Development, Morphology and anatomy, Physiology, Hormones, Biochemistry, Migration, Senses, Economic importance, Parasitic control (in part by M. R. Shaw), Pathogenic control (in part by H. D. Burges), Predators, Chemical control, Integrated control. To each of these chapters is appended an imposing list of bibliographical references.

Among those sections likely to be of particular interest to readers of the *Record* are that on variation (Chapter 1), with a list of subspecies and 75 aberrational names arranged alphabetically with their authors, based on that in the British Museum (Natural History). The references to original descriptions of early stages, the earliest by Maria Graffinn in 1699, and a selection of records of abundance or otherwise of the species in Great Britain since 1842. The section on breeding, with an account and list of synthetic diets, their preparation, together with a review of current research on *P. brassicae* and a world-wide list of addresses, and the various sections on migration in chapter 11, and on foodplants in chapter 4.

Regarding the make-up of the volume itself, the number of unnecessary blank spaces in the text is wasteful, and the paper used so heavy that one may have to exercise special care so as not to loosen the contents from its casing. The book is contained in a hard, durable cover however, and is well printed. — J.M.C.-H.

**FOR SALE** – Female specimen of *Lycaena dispar dispar* (British Large Copper) – Extinct for 135 years. £110 o.n.o. M. Elvidge, 29 Guildown Road, Guildford, Surrey.

**WANTED** – Oxford Scientific Films require news of a nest building queen of *Bombus pratorum* for filming on location. Would anyone who knows the whereabouts of such a nest please contact Karen Bishop on 0993 – 882819.

**FOR SALE** – “Entomological cabinet”. 30 drawers in two tiers, internal drawer measurements 19" x 13" x 2", corked and papered, no lids or built in cells. External cabinet 37" high x 28½" wide x 20½" deep. Polished mahogany. Made to order in Hong Kong but due to misunderstanding glass insert intended for front of drawers was placed across top giving viewing access to top drawers. Despite shortcomings specimens kept in it successfully for last 10 years. Offers? Buyer must collect – from North Yorkshire. John Tennant, 01-409 7380 HQ PM(A), Lansdowne House, Berkeley Square, London W1X 6AA.

**FOR SALE** – Republication of Frederick Valentine Melsheimer's 1806 “A Catalogue of Insects of Pennsylvania”, the first separate work devoted to American insects. The facsimile lists more than 1300 species of Coleoptera (other orders were not completed), and includes a short biography of Melsheimer. Price: U.S., \$ 5.00 (overseas, airmail \$ 6.50). Checks payable to Entomological Society of Pennsylvania, c/o Entomology Dept., Pennsylvania State University, University Park, PA 16802, U.S.A.

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## A YEAR OF ODONATA

By ANTHONY ARCHER-LOCK\*

Whatever the merits of beginning with *Micros* immediately on vacating the pram, it is never too late to supplement with dragonflies. The refreshing vignette by Lt. Col. C. F. Cowan in *The Record* (Vol. 92, page 282) prompted me; thus, late May 1982 found me camera stalking The Beautiful Demoiselle (*Agrion virgo* L.) on a Dartmoor stream, when suddenly there was a devastating clatter on the ancient granite hump bridge as a farmer shed his load of corrugated iron from his trailer. Whilst we re-loaded, and talked of otters, he suddenly remarked that a student up at the farm was "mazed on dragonflies". I was away.

Within a radius of a few miles around the south Devonshire market town of Newton Abbot, there are many dis-used ballclay pits which now form wonderful sedge and scrub-fringed ponds much frequented by loner fishermen pensive under immense green umbrellas. Here, towards the end of May, and during June, we watched Downy Emeralds (*Cordulia aenea* L.), and a female Hairy Dragonfly (*Brachytron pratense* Mueller) emerging – after an hour or two with wings folded over their backs in butterfly fashion, the wings spring flat in a twinkling; there follows a spell of quivering, and then a deliberate flight over the trees away from the water. Here too, The Emperor Dragonfly (*Anax imperator* Leach), largest of the hawkers, appeared in tireless majestic flight at every pond, sometimes hovering in tentative approach, inquisitive as with most of the hawkers and emeralds. Other company included The Broad-bodied Libellula (*Libellula depressa* L.), so fond of perching on a twig sentry post.

At the very end of May, a Bank Holiday trip to Wales enabled a stop at Whixhall Moss in Shropshire where the first males of The White-faced Dragonfly (*Leucorrhinia dubia* van der Linden) were flying over the cottongrass filled peat cuttings, very difficult to follow and approach. From a post-emergence sheltered corner of scrub, Four-spotted Libellulae (*Libellula quadrimaculata* L.) rose in a cloud. Not far from the west coast of Wales, beneath Craig-yr-Aderyn, The Bird Rock, around whose summit a flock of choughs with another of cormorants, drifted, The Large Red Damselfly (*Pyrrosoma nymphula* Sulzer) consorted with The Common Blue Damselfly (*Enallagma cyathigerum* Charpentier) in the ditches. The Golden-ringed Dragonfly (*Cordulegaster boltonii* Donovan) was first observed from the train at a halt 1500 feet up Snowdon, causing the crews' welsh chatter to pause at the pointing finger.

Returning, we stopped at Symonds Yat to search the huge loop in the River Wye. Soon, The Club-tailed Dragonfly (*Gomphus vulgatissimus* L.) was in evidence, very local, but in numbers. They alternated between mid-river hovering, and sweeping on to the banks for a bask. Banded Demoiselles (*Agrion splendens* Harris) were numerous, the males taking up territories from the floating flowers of River Crowfoot, whilst along the sedgy margins, White-

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legged Damselflies (*Platycnemis pennipes* Pallas) abounded in company with The Blue-tailed Damselfly (*Ischnura elegans* van der Linden). A sudden thunderstorm, blotting out the sun, caused all species to vanish.

A quick round trip to the Broads took in Surrey's Henley Park Lake, where a long watch proved necessary at this picturesque water of lilies, pink rhododendrons, and pine trees, before The Brilliant Emerald (*Somatochlora metallica* van der Linden) put in an appearance, fortunately to hover very close indeed. Meanwhile, numerous Red-eyed Damselflies (*Erythronma najas* Hansemann) were observed guarding their lily leaves with menace, and *C. aenea* was abundant upon this latter day of June.

During a long and somewhat vague walk along dyke paths around the eastern part of the Broads, pleasantly interrupted by a cheerful fenlady who intrigued me with the life history of her ancient treasured donkeys, I chanced upon a small colony of The Norfolk Hawker (*Aeshna isosceles* Mueller) waltzing around the edge of some carr, their wings glittering brilliantly against the sunshine in this flat landscape with distant windmills. A happy scene indeed, to which *B. pratense* also contributed. Bouts of communal activity alternated with synchronized spells of basking well down in the lush herbage of yellow iris and buttercups as if by secret command – one could easily pass by and miss the whole spectacle.

A test of identification was posed on the Somerset Levels, where The Azure Damselfly (*Coenagrion puella* L.) consorts with the much more local Variable Damselfly (*Coenagrion pulchellum* van der Linden) along the rhines. Textbook study is a necessary prerequisite, but the males are not too difficult to tell apart, especially because of the often broken and variable anti-humeral stripes of the latter species. *C. pulchellum* favours the lea-side of bushes. The rarer Southern Damselfly (*Coenagrion mercuriale* Charpentier) was seen in tentative wafting flight also in mid-June, the insect occurring on the Venn Ottery reserve in Devonshire and in the New Forest.

The Scarce Chaser (*Libellula fulva* Mueller), which is so local, best seen in the New Forest area, was seen on the River Frome, an interesting event because any degree of pollution is thought to be a fatal element. The males settle frequently on the riverside vegetation where they permit close approach with caution.

In the Fowey Valley of Bodmin Moor, full of the music of curlews, male Keeled Skimmers (*Orthetrum coerulescens* Fabricius), of a pleasing powder blue, were active over the orchid laden bogs where The Small Red Damselfly (*Ceriagrion tenellum* de Villers) flew feebly amongst the rushes, accompanied by numerous teneral Black Darters (*Sympetrum danae* Sulzer); during August, the males would mature to a glistening black.

Late July required another brief visit to the ballclay ponds, for here now, on the hard baked white shores, The Black-tailed Skimmer (*Orthetrum cancellatum* L.) indulged in prolonged basking although wiley when approached, whilst in the rushy areas, the migrant Ruddy Darter (*Sympetrum sanguineum* Mueller) which is only

locally resident, made short flights of electrifying speed. Discovered recently to be much more widespread than originally thought, The Scarce Ischnura (*Ischnura pumilio* Charpentier) was found in rushy marshes beside old china clay workings, and on the cornish moors. A common dragonfly of the south east. The Brown Hawker (*Aeshna grandis* L.) was found to be plentiful by early August, for example around the old gravel pits near Marlow – best photographed along verges of abundant vegetation.

No great degree of persuasion was needed for a scottish holiday consensus – essential to find four species. The Northern Emerald (*Somatochlora arctica* Zetterstedt), sometimes on the wing by late May, was located in late July on moorland pools near the famous Chequered Skipper country of Loch Arkaig, where they hovered interminably over one pool or the next; as for some other species, this enabled surprisingly good photography in flight, at one thousandth of a second using a 135mm lens, mutual curiosity closing the distance.

Rarest of all the species, The Northern Damselfly (*Conenagrion hastulatum* Charpentier) was eventually discovered in Speyside, roosting low down on pines around a boggy verge, and in the company of The Emerald Damselfly (*Lestes sponsa* Hansemann). One interesting specimen of the former was photographed, where the anti-humeral stripes showed broken irregularity typical of *C. pulchellum*, and the spear mark was replaced by a crescent.

Upon the first morning after the train drivers' strike ended, we waited on the immaculate station at Tyndrum, learning that the train had already broken down *en route*; strident bells rang frequently whilst an exceedingly attentive stationmaster fussed over his first passengers of many a day, with frequent bulletins. Not so fortunate was a german student who leaned his rucksack against a flower pot – there was a mighty roar from the office; the first time I have seen a sun tanned face turn pale. Eventually we reached Corrou station and Loch Ossian for a good view of The Azure Hawker (*Aeshna caerulea* Stroem), brilliant blue, and truly splendid over the pools fringed with all shades of sphagnum moss, snow patched Nevis towering behind. This dragonfly landed on a sundew, a second specimen visiting to show apparent concern, before struggling achieved freedom. In the meantime, my family had vanished, so it was with relief that I saw them breasting the brow of the track towards me, waving re-assuringly. Most heart warming I though until realising that they were merely fighting off the squadrons of horseflies. There must be, and is, an easier way of photographing *A. caerulea*! Go further north-west.

That left The Highland Darter (*Sympetrum nigrescens* Lucas). On the west coast, the locals said "the redyens are not aboot 'til August", and they were right, but on July 30th, we watched several at the far end of Loch an Eilein near Aviemore in Speyside – these had been out for nearly a fortnight. On the following and last day, sitting beside a tarn, at 2300 feet, above the White Corries chairlift in Glencoe during continuous sunshine, we admired several Common Hawkers (*Aeshna juncea* L.) flighting and breeding, whilst Mountain

Ringlets drank nectar from the Heath Spotted-orchids, and a golden eagle sailed against the heavens in wide sweeps.

The last of the summer wine, in the form of a final spell at the Devonshire pools, found The Migrant Hawker (*Aeshna mixtra* Latreille) locally abundant on the lowland sites including those at Slapton Ley, in September, sharing many such haunts with the very widespread ultra-curious Southern Hawker (*Aeshna cyanea* Mueller); at one pool, both were flying above a young otter endeavouring to stalk some panic stricken young coots. Extraordinary as it might seem, at a Dartmoor quarry pool, we watched a male *cyanea* pounce upon a laying female *juncea*, and pairing took place during an aerial flight in tandem. The *juncea* then immediately returned to the identical spot where she continued laying. Somewhat dumbfounded, although confident of the identities, we captured both, just to make sure — the released female made a whirlwind tour of the quarry, and then once again went back to lay exactly as before! On November 18th, two pairs of Common Darters (*Sympetrum striolatum* Charpentier) were still laying, the last specimen being seen on November 20th.

So that was the thirty seven species. It just remained to complete the all important Odonata Records cards from Monks Wood, and to place the photographs in the album. Such photography and observation is thoroughly challenging, enjoyable, sporting, and harmless to either party.

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MEMORIES OF EVELYN CHEESMAN. — I am preparing a programme for Radio 4 about the late Miss Evelyn Cheesman (1881-1969), entomologist and explorer, and would be glad to hear of any personal memories that readers may have of her and which they would not mind my using. The programme is due to be broadcast in August this year. There is no need to write in detail: a brief outline will do. Please give your telephone number. — JOHN F. BURTON, FRES, BBC Natural History Unit, Broadcasting House, Bristol, BS8 2LR (Tel: 0272-732211 Ext. 2406).

ACLERIS HASTIANA L. BRED FROM SALIX CAPREA IN SURREY. — I only lately noticed, to my surprise, that Surrey is not among the few southern counties given for this well-known polymorphic species in Bradley, Tremewan & Smith (1973, *British Tortricoid Moths*, 1: 203), where it is stated to be extremely local in southern England, and that the larva prefers small-leaved willows and is apparently not found on *S. caprea*. It is therefore doubly noteworthy that in 1957 I bred a few specimens of *A. hastiana* from spinings found on bushes of the latter species at Oxshott, among those of *A. emargana* F. and various other willow-feeders. They were of the first brood, and the first moth to emerge was of the very characteristic *ramostriana* form, the others being plain. Since writing this I find that *hastiana* is recorded from another Surrey locality, viz. Bookham Common — see *London Naturalist*, 56 (1977): 81. — A. A. ALLEN.

*CATOCALA NYMPHAGOGA* ESPER AND *HERMINIA ZELLERIALIS* WOCKE: TWO SPECIES OF NOCTUIDAE NEW TO BRITAIN

By I. J. L. TILLOTSON\*

In late July 1982 I encountered two species of moth new to Britain which had been taken at light traps. Two specimens of *Catocala nymphagoga* Esper were captured in Rothamstead traps at Tregaron, Cardiganshire and at Denny Lodge in the New Forest, Hampshire, on 28th July and 31st July respectively. I operate and identify catches from the Tregaron trap, and the Denny Lodge trap is operated by Mr. F. A. Courtier who sends the catches to me for identification. It goes without saying that these two specimens provided me with a great deal of interest, no small measure of puzzlement, and some delight, when their identity was finally revealed.

During the same week a single specimen of *Herminia zellerialis* Wocke was taken at Stackpole National Nature Reserve on the Pembrokeshire coast. During this busy period, this dull moth was set aside with a number of others for later identification and the precise date of capture became a little confused. It was taken by Miss Nicola Davies, a post-graduate student studying bat feeding behaviour, for whom I have been identifying moth catches. The insect was captured in a Heath trap which had been baited with a 'Vapona' type household insect killing strip.

[*C. nymphagoga*: Concerning this small oak-feeding *Catocala*, whose range abroad extends through Southern Europe to Western Asia and Algeria, Kirby (*Butterflies & Moths of Europe*, 277) has: "Fore-wings varied with grey and brown, with slightly dentated black transverse lines; hind-wings yellow, with the base dusky, a broad black border, narrower and almost interrupted in the middle, and a narrow central stripe forming a right angle at its lower extremity, and extending nearly to the hind margin. Expands from 1¼ to 1½ inches". The insect is figured in colour in Seitz (*Macrolep. Pal.*, 3: fig. 74g), Forster & Wohlfahrt (*Die Schmetterlinge Mitteleuropas*, 4: plt. 28, fig. 7) and Novak & Severa (*Field Guide*, p. 198, fig. 1); the latter adding that this is the most abundant of the yellow-coloured european *Catocala*. Lhomme (*Cat. des Lep. de France et de Belgique*, 1: 309) gives it as occurring in South France but mainly in the mediterranean region.

*H. zellerialis* Wocke (= *tarsicristalis* H.-S.): This central and southern european species whose larva is said to feed on "rotten leaves and low plants generally" (Seitz), agrees somewhat in size with *H. tarsipennalis* Treit. and *H. lunalis* Scop. (= *tarsiplumalis* Hbn.) (one taken in 1977, vide *Ent. Rec.*, 90: 37), but bears a closer resemblance to the latter. There are coloured figures of the moth in Seitz (*op. cit.*, 3: fig. 74g), Koch (*Wir Bestimmen Schmetterlinge*, 3: plt. 19, fig. 439), Forster & Wohlfahrt (*op. cit.*, 4: plt. 31, fig. 16) and Culot (*Noctuelles & Geometres d'Europe*, 2: plt.

\*Chief Warden, Dyfed-Powys Region, Ty Coed, Tregaron, Dyfed SY25 6JF.

79, fig. 14). According to Lhomme (*op. cit.*, 1: 333) the moth occurs in South France, with June as its time of appearance.

The specimens have been deposited in the Department of Entomology, British Museum (Natural History), where the identifications were confirmed by Mr. Honey in the case of the *C. nymphagoga*, and by Mr. D. Carter in the case of the *H. zelleralis*. One suspects that all three specimens were immigrants. — EDITOR.]

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**The Buprestidae (Coleoptera) of Fennoscandia and Denmark by S. Bílý.** Fauna Entomologica Scandinavica Vol. 10, 111 pages + two colour plates. 1982. Published by Scandinavian Science Press Ltd., Langasen 4, Ganlose 2760 Malove, Denmark. Ordinary price 100 D.Kr., subscription price 70 D.Kr.

This excellent entomological series was launched in 1973, but the Buprestidae form the subject of the first volume of the Coleoptera, another, covering the aquatic Adepaga is due to be published soon.

The present work follows the usual format of the series with an Introduction giving a brief history of Buprestid taxonomy; Morphology of the adult and immature stages; Bionomics and Ecology; Collecting and Preserving. There are separate keys to adults and larvae at sub-family, tribe and generic level, the key to species being included in the sections dealing with each genus; important sub-species are included. The main text is rather like "Fowler", with details of the genus followed by very adequate notes on each species including their biology and distribution.

Alas, *Agrilus sinuatus* has been omitted from the work, but this is the only "error"; other very minor points may well indeed be printing errors - viz the marking of five non-British species as British in the Catalogue (pages 100-105), but omitting *Aphanisticus emarginatus*. However, these minor points are not repeated in the text so any ambiguity is at once overcome by reference to the text *Phaenops cyanea* is included as British (in the catalogue) and given as "Not native in Great Britain" (p. 45); it is a pity this information was not expanded to "Britain, 19th century record" or similar.

In all this is a very sound work; possibly the first treatment of the north European/Scandinavian Buprestid fauna, and for the British Coleopterist, a great expansion on the Royal Entomological Society's *Handbook* (111 pages as compared to 8). A total of 48 species are treated in the book, and as the British fauna includes only twelve, all of which are instantly recognisable in the field, it might have restricted appeal to the general Coleopterist, but forms necessary reading for the serious student.

The standard of printing and quality of paper and binding are good, the 108 text figures excellent, and the two colour plates faithfully depict the metallic colouration of the adults. — J. COOTER.

AN INQUIRY INTO THE BRITISH STATUS OF  
*GYMNETRON PLANTAGINIS* EPP.  
(COL.: CURCULIONIDAE)

By A. A. ALLEN, B.Sc., A.R.C.S.<sup>1</sup>

This species has the dubious distinction of being perhaps our most misunderstood weevil, as well as apparently one of the rarest. The present paper attempts to expose the confusion, whilst affirming its position as a member of our fauna — though, for the moment, one or two small questions remain.

T. H. Edmonds (1930), bringing it forward as British, wrote:—

“In June, 1926, I took. . . . a very small *Gymnetron* which is obviously distinct from any species in the British list . . . . I sent it to Col. Deville and suggested to him that it was *G. plantaginis*. He agrees that it is probably that species, but points out that it is badly rubbed . . . .”

He goes on to list the differences between this species and *G. pascuorum* Gyll., which in a general way it much resembles. Unfortunately he omits some of the more important, and states others incorrectly. Thus, ‘narrower’ is true of the thorax only, not of the whole beetle; and he gives the antennae as ‘black’ instead of ‘red’, a point corrected by Donisthorpe (1931) in reproducing Edmonds’s note (actually the character is not diagnostic). These shortcomings were probably due partly to inadequacies in his source, and partly to the fact that his insect was in reality not *plantaginis* at all! This fact should occasion little surprise, given the failure<sup>2</sup> of authors in general to appreciate the variability of the common *G. pascuorum*, especially in size, and the frequency of dwarfism in the species — a failure evidenced in Edmonds’s case by the word ‘obviously’ above. He appears to have made up his mind that his specimen was probably *plantaginis* before sending it to Deville, whose agreement was, very properly, qualified and cautious. As the species is very rare in France and Germany, and perhaps everywhere, Deville may not have known it at first hand. Rather too much has been made of its allegedly close likeness to its commoner relative, which really is little more than superficial (cf. the table of differences to follow later).

Fortunately I was able to borrow Edmonds’s beetle for examination, and found it — not unexpectedly — to be only an undersized *G. pascuorum* in poor condition. On the basis of this erroneous record *G. plantaginis* has remained on our list, and is included by Joy (1932). He, however, gives quite other characters for it than did Edmonds, and they tend to prove that what Joy had before him as that species was a female *pascuorum*, perhaps rubbed and/or with reduced puncturation and pubescence on the elytral intervals such as is often found in that sex when underdeveloped. He seems

<sup>1</sup>49 Montcalm Road, Charlton, London SE7 8QG.

<sup>2</sup>A failure which also caused the addition to our list of *G. melas* Boh. and *G. marshalli* Donis. — now rightly synonymized. Truly *G. pascuorum* has much to answer for!

not to have realized that the difference in the point of antennal insertion on the rostrum, which he gives to separate the two species, in fact separates the two sexes of *pascuorum*.<sup>3</sup> The many good distinctions exhibited by the true *plantaginis* (see below) could not have escaped him, had he been able to examine a genuine specimen.

Besides the original example, I have been able to study two others in the BMNH purporting to be British *plantaginis*; they had been separated out by the late Dr. K. G. Blair from the Power series of *pascuorum*, with a label "from description and Bedel". Again, however, they are plainly nothing more than small females of the last-named. One would think that in view of the rarity of *plantaginis* Blair might have published a note on these insects, but possibly after all he was not fully convinced.

I have seen but one further reference to this weevil in Britain, and that is in Donisthorpe's list of Windsor Forest Coleoptera (1939): "One specimen by general sweeping 10.vi.38". Yet again, inspection of the beetle in question in his collection revealed it as merely a dwarf *pascuorum*; I have an almost identical one from the same locality. There may, possibly, be other records unknown to me; if so, they will certainly need to be considered very carefully.

What proved the most interesting specimen in the late H. Dinnage's collection when it came into my hands some 25 years ago was a small blackish weevil doing duty for *Gymnetron veronicae* Germ., with the data 'Burgess Hill, Sussex, ix.1901, A. C. Vine'.<sup>4</sup> Careful scrutiny showed it to be neither *G. veronicae* nor any other of our better known species. It is a male in good preservation except that the upperside seems abraded (see note 5 following the table). Not being sure that it could be referred to *plantaginis*, I submitted it to Dr. L. Dieckmann, the Curculionid specialist, with whom I was in touch at the time. He replied that it did indeed appear to be that very rare species, as far as he could say without an authentic example for comparison, and that it agreed at least tolerably with the description. As any other identity for the beetle is unlikely in the extreme, I propose to accept Dr. Dieckmann's expert opinion, and to regard the Sussex insect as giving sufficient grounds for retaining *G. plantaginis* on our list.

The accompanying table of characters, drawn up largely from this specimen (see, however, note 5 below), is supported substantially by the literature, e.g. Reitter (1916), Hoffmann (1958). Several of them may not have been previously noted, but should be useful in separating the two species. I compare it there with *G. pascuorum* because, as we have seen, it is always that often deceptive species which British coleopterists have hitherto mistaken for *plantaginis*; and not as implying specially close kinship. In fact, the latter is in some respects equally (though not closely) allied to *veronicae*, but differs in its narrower pronotum with more marked 'collar',

<sup>3</sup>Under 14(15) Joy mentions a tooth on underside of front tibia in *pascuorum* ♂; here 'tibia' should of course read 'femur'.

<sup>4</sup>Vine is remembered chiefly as a lepidopterist, but the Dinnage collection includes a number of beetles taken by him in E. Sussex.

	<i>plantaginis</i>	<i>pascuorum</i>
Clothing of upper surface	Extremely short, not concealing colour of surface; except at sides of pronotum, where it is thicker & whiter <sup>5</sup>	Surface fairly closely covered by long, pale, often shining scale-hairs, on elytra partly raised (except in worn or depauperated exx.)
Sides of body in lateral view	With a thick crust of whitish scales	Without such a crust of scales
Rostrum	♂ : about as in ♀ <i>pascuorum</i> ♀ : very long, much longer than head & thorax together (Reitter)	♂ : relatively short ♀ : considerably longer than in ♂
Insertion of antennae on rostrum	♂ : $\frac{2}{3}$ of the way to apex ♀ : ? (doubtless well behind middle)	♂ at or rather before middle ♀ : well behind middle
Antennal scape	Much longer, about as long as as funicle	Very short, much shorter than funicle
Pronotum	Narrower and longer, scarcely transverse, with a groove right across front forming a collar: surface dull	Broader, plainly transverse; if such a groove is traceable, it is very near apical margin, so that collar is much narrower; interstices shining
Pronotal punctures	Smaller, each bearing a minute light scale almost flush with the surface	Larger, each bearing a long decumbent scale-hair
Elytral humeri	Marked, somewhat callose	Not marked, not at all callose
Elytral intervals	With a row of extremely short white setules <sup>5</sup>	With more than one row of long raised scale-hairs
Femora	Unarmed in both sexes	With a tooth in ♂ , strong & sharp on front pair
Inner side of apex of tibiae	With a smaller, shorter tooth concolorous with tibia (rufous) & hardly visible from above	With a thorn-like <i>black</i> tooth set almost at a right angle, very small in ♀ (may be largely hidden by pubescence)
Segment I of hind tarsi	Longer than lobes of 3, which are broader	Shorter than lobes of 3, which are narrower
Tarsal claws	Small, rufous, concolorous with tarsi	Long, shiny black together with apical part of onychium

long antennal scape, flat eyes not disrupting outline of pronotal sides, and reddish antennae, tibiae and tarsi, of which the claw-joint is shorter than the rest together, and the claws much shorter. It is also generally smaller. It shares however with the *veronicae/beckabungae/villosulum* group the character of a band of lighter scales at sides of pronotum, on account of which Reitter and others place it in that section.

### Acknowledgements

I am grateful to Mr. Colin Johnson, of Manchester Museum, for the opportunity of studying Edmonds's putative *G. plantaginis*; to Dr. L. Dieckmann, Eberswalde, for his valued opinion of my specimen and much other help with weevils; and to the staff of the Coleoptera Section at the BMNH Entomological Department for their kind co-operation on various occasions.

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- Reitter, E., 1916. *Fauna germanica: die Käfer des deutschen Reiches*, **5**: 226, 228. Stuttgart.

<sup>5</sup>In two or three respects the Vine specimen appears not to fit the description: the uniformly scaled pronotum, i.e. scales not whiter and more thickly placed at sides; the broad flat elytral intervals, seemingly glabrous and filled with illdefined puncturation, compared with Reitter's "intervals narrow" and a row of punctures and of tiny white setules on them as he and Hoffmann indicate. Abrasion may possibly account for two of these discrepancies, but not for all. There thus remains a minute element of doubt about the identity of the Burgess Hill specimen; in any case the two characters marked 5 above are taken not from it but from the literature, since authors seem agreed that *plantaginis* possesses them.

It should be added that the elytra are either extensively red except towards base, or, as in the British example, black with an apical red patch extending broadly up the sides. In *pascuorum* the area of red coloration varies greatly, and Reitter is incorrect in stating, among his key-characters for its group (p. 226), that the elytra are "niemals einfarbig schwarz" – since uniformly dark examples are frequent, here if not in Germany.

Hoffmann states that according to Eppelsheim the species under notice lives on *Plantago media* L. British coleopterists able to recognize *P. media* should give it close attention when they meet with it, for this *Gymnetron* surely awaits rediscovery in our country.

THE WHITE-LETTER HAIRSTREAK  
(*STRYMONIDIA W-ALBUM* KNOCH):  
A NATIONAL SURVEY

By C. PEACHEY\*

As a follow-up to the request for information on the status of the White-letter Hairstreak by A. Archer-Lock (*Ent. Rec.*, 92: 254), the Nature Conservancy Council is organising a national survey under the auspices of the Invertebrate Site Register. Initially, a request for information on the butterfly was placed in the News of the British Butterfly Conservation Society (April 1982). Over 20 members responded and three major points emerged from the letters.

(i) The majority of the colonies mentioned, excepting the most northerly, appear to be on the decline and could become extinct in a matter of years. For example, in the Ruthin Valley in North Wales the White-letter Hairstreak was the commonest butterfly in the area prior to 1977. In 1977 Dutch Elm Disease hit the area and has been spreading very rapidly, and not surprisingly the butterfly has since undergone a decline. In fact in 1982 only two specimens were seen.

(ii) The White-letter hairstreak appears to have survived better on Wych elm rather than English elm. Smooth-leaved elm was also mentioned although it is not certain whether the butterfly will use this species as a foodplant.

(iii) There is evidence to suggest that the White-letter Hairstreak can utilize growth from suckers – but can they survive on these indefinitely? When the young trees reach a certain height elm disease has a tendency to recur.

Clearly more information is needed before any effective conservation measures can be undertaken. The means of doing this would be to have a team of recorders from all over the country – ideally one per county. Existing county lepidoptera recorders might like to take this up as an ongoing survey. A county survey could include:—

(a) a survey to check out all known colonies (surviving colonies could then be monitored each year), and a search for new colonies.

(b) a survey to locate elm trees. Elms which have survived the disease should be conserved for they could be used for future experimental introductions. Elm sucker growth, wherever it is still alive, should also be retained, particularly in areas which have been hit badly by the disease. (Do we know if Dutch Elm Disease has reached the furthest limits of the White-letter Hairstreak's range and are steps being taken to halt the spread of the disease?)

May I appeal to all butterfly enthusiasts to have a good search for the White-letter Hairstreak this summer. It is possible that the species is not as rare as we think it is. All Hairstreaks are secretive butterflies and tend to spend much of their time flying around

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tree tops and feeding on honeydew. Time and patience is certainly needed and binoculars will be helpful. Searching for eggs in late July/August is another way of locating a colony and becomes easier after finding the first egg!

I would be very happy to offer any advice to readers who wish to participate in such a survey. I would also welcome any views you may have on this species and would be interested to know of people who have successfully reared it on alternative foodplants. If you can help please write to Caroline Peachey, NCC, 19/20 Belgrave Square, London SW1X 8PY.

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**The Butterflies of Northern Europe** by Bjorn Dal. Edited by Michael Morris. Translated by Roger Littleboy. Croom Helm, London. July 1982. £5.95.

This is a particularly attractive book because of its fresh approach to illustration and lay-out, the author, Bjorn Dal, being an artist of skill and sensitivity. Described on the flyleaf as an identification guide and general introduction to the butterflies of Northern Europe, it covers Britain, Fennoscandia and the Baltic countries. The fascinating butterflies of the high Arctic are unfortunately excluded, although one of them, *Erebia pandrose* makes a mysterious, unidentified appearance on page 49.

The introduction is followed by short accounts under various headings – the section on conservation containing some eminently sensible comments on the subject of collecting. In the main part of the guide the butterfly species are not arranged systematically but are grouped under biotopes. This arrangement is quite effective in view of the difficulty with overlapping habitats in many species. It is surprising however to find *Argynnis paphia* in the Meadowland and Marsh group rather than with the woodlanders. Each species also has a concise but informative descriptive text and a distribution map. The latter is differentiated by three colours into the normal range in northern Europe, the normal range in the rest of Europe and areas where the insect occurs irregularly. This generally works well apart from the two maps on page 47 which are obviously incorrect.

The illustrations depicting butterflies in natural positions are delightful, and I know no other artist who has captured so well the attitudes of butterflies at rest and in flight. One is hard put to choose favourites but selected for special mention are the two hibernated *Nymphalis antiopa* (frontispiece), *Oeneis jutta* page 26, *Euphydryas maturna* page 47, the delicate trio of *Philotes baton* page 74, and *Aglais urticae* page 122. There are also enlarged figures of individuals' wings of those species more difficult to determine, such as the three members of the *Thymelicus* genus the Heaths and the *Clossiana*.

The English edition has been thoughtfully edited by Dr. Michael Morris. As a supplement and northern summary to the *Field Guide to the Butterflies of Britain and Europe*, it succeeds admirably. – C. J. LUCKENS.

## THE IMMIGRATION OF LEPIDOPTERA TO THE BRITISH ISLES IN 1982

By R. F. BRETHERTON\* and J. M. CHALMERS-HUNT\*\*

*(Concluded from page 94)*

An especially interesting novelty this year has been arrangements for recording on several of the North Sea oil rigs, which, if they can be repeated to cover longer periods and more species, could throw much light on the conditions for immigration from northern Europe.

### ANNEXE I

#### Names of recorders

Albertini, V. M.; Agassiz, Rev. D. J. L.; Allen, Dr. A. A.; Allen, D. per PB; Badmin, J.; Baker, B. R.; Baldock, D. W.; Baldwin, A. J.; Barber, T. per MANM; Batten, A. per CRP; Bell, R. A.; Beraet, P.; Billett, D. F. per JMW; Birchenough, R.; Birkett, Dr. N. L.; Blathwayt, C. S. H.; Bond, K. G. M.; Bonney, J.; Botwright, G.; Bradford, E. S.; Bretherton, R. F.; Briggs, J.; Brown, D. C. G.; Buckham, A.; Buddle, R. F.; Burgess, G. per RGW; Burrage, W. per CRP; Burton, J. F.; Campbell, Dr. J. L.; Carpenter, E.; Castle, E. per IH; Chalmers-Hunt, J. M.; Chambers, D. A.; Chatelain, R. G.; Chipperfield, H. E.; Christie, I. C.; Church, S. H.; Clarke, Dr. J.; Classey, E. W.; Clouter, F. H.; Collins, G. A.; Colombé, J.; Convey, P. per NMH; Corley, M. per DJLA; Courtier, F. A. per IJLT; Craddock, B. per RGW; Craske, R. M.; Dacie, Sir John; Davey, P. A.; Davies, Miss N. per IJLT; Dewick, A. J.; Dey, D.; Dillon, T. J.; Dixon, D.; Dobson, A. H.; Doe, B. per Dickerson, G.; Down, D.; Dunn, T. C.; Dyer, J. per B. Skinner; Dyke, R.; Dyson, R. C.; Eley, R. per JLF; Ellis, Dr. E. A. per HEC; Elliot, B.; Elvidge, M.; Emley, D. per RGW; Emmet, Col. A. M.; Enfield, M. A.; Evans, K. G. W.; Ezard, A. H. per PQW; Fairclough, R.; Fenn, J. L.; Fitzacerley, Mrs. per PS; Fordham, B. per CRP; Foster, A. P.; Gandy, M.; Gardiner, B.O.C.; Gardner, A. per DCGB; Gascoigne, J. per CRP; Gauld, S. V. per RIL; Gill, N.; Goater, B.; Green, J. E.; Greenwood, J. A. C.; Gregory, J. per CRP; Hadley, M.; Hall, N. M.; Halsey, M. & J.; Halstead, A. J.; Hancock, E. G.; Harman, T. W.; Harmer, A. S.; Hart, C.; Harvey, M. S.; Harvey, R. per MAE; Haynes, R. F.; Heal, N. F.; Heath, J.; Heckford, R. J.; Hogg, P.; Holborn, J. M.; Horton, Dr. G. A. N.; Hudson, I.; Ironside, Miss M. per MAE; Jackson, S. M.; Jenkins, A.; Jewess, P. J. & G. T.; Jordan, M.; Kiddie, R.; Knapp, D. per AHD; Knill-Jones, Dr. R.; Lane, C. G. & R. E.; Langmaid, Dr. J. R.; Lagen, R. E. per CRP; Lavery, J. W. per RFH; Levington, R. per BRB; Lorimer, R. I.; Lovell-Pank, R.; Luckens, Dr. C. J.; Lumley,

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\*\*1 Hardcourts Close, West Wickham, Kent BR4 9LG.

T.; Mackay, Mrs. L. per J. Heath; Mackworth-Praed, H. N.; McCormick, R. F.; McRitchie, B. B.; Majerus, Dr. M. A. N.; Mansell, G.; Mascard, I. per CRP; Merrifield, R. K.; Miller, J. R.; Milne-Readhead, E. per CRP; Mitchell, D. W. per J. Heath; Morgan, Mrs. M. J.; Morris, Dr. M. G.; Morris, R. K.; Moss, G. per RGW; Mowbray M. J. per CRP; Murray, R. J. H.; Myers, Dr. A. A.; Newnham, T.; Newton, J.; Notton, D. per BRB; Oates, M. R.; O'Connor, Dr. J. P.; O'Heffernan, H. L.; Owen, D.; Owen, J. Palmer, S. per MRY; Parsons, M. S.; Peet, Dr. T. N. D.; Pelham-Clinton, E. C.; Penney, C. G.; Philips, A. per CRP; Phillips, J. W.; Philp, E.; Philpott, V. W.; Phillpotts, J. L.; Pickess, B. P.; Pickles, A. J.; Pilcher, R. E. M.; Pittis, Rev. S. C.; Platts, J.; Pooles, S. W. P. per CRP; Porter, J.; Potter, T. A. per PQW; Prance, D. A.; Pratt, D. A.; Pratt, C. R.; Price, L. per JN; Pyman, G. A.; Radford, J. T. per B. Skinner, CRP; Reid, J.; Ralph, Miss J. M. per CRP; Rogers, M.; Rough, K. per CRP; Ruck, A.; Sankey-Barker, J. P.; Shearer, I. per NMH; Skidmore, P.; Skinner, B.; Smith, E. G.; Smith, Dr. F. H. N.; Smith, G.; Smith, Miss P. per RGW; Softly, R. A.; Sokoloff, P. A.; Spalding, A. per FHNS; Spence, B. R.; St. John, W. G.; Stallwood, B. R.; Statham, B.; Sterling, Col. D. H.; Sterling, M. J.; Sterling, P. H.; Sutherland, G. per RIL; Thomas, R. per DCGB; Tillotson, I. J. L.; Torlesse, Rear Admiral A. D.; Tremewan, W. G.; Tubbs, R. S.; Turk, Miss S. per J. Heath; Tweedie, M. W. P., Tyler, M. W. per J. Heath; Uffen, R. W. J.; Vice, M. per DCGB; Vincent, M. R.; Wake, A.; Wale, C. A. R.; Walters, J. M.; Warren, Miss E.; Warren, R. G.; Waters, P. per CRP; Waterton, P. W. per RWJU; Weddell, B. W.; Weekes, B. per MAE; West, B. K.; Whiteside, J. G.; Whittaker, E. per CRP; Wild, E. H.; Wilkes, Miss M. per MGM; Wilson, D. E.; Winter, P. Q.; Withers, B. per B. Skinner; Woodward, C. J. per CRP; Young, Dr. M. R.; Youden, G. H.

## ANNEXE II

Records of scarce immigrant species in 1982  
(probable or possible migrants of resident species marked\*)

\*AGONOPTERIX HERACLIANA L.(1) NORTH SEA: oil rig F Delta, August (per MRY).

\*TEBENNA BJERKANDRELLA Thunb. (16) DEVON: Budleigh Salterton, two bred 11/14.9; Heybrook Bay, 15/16.9, three bred; Axmouth, 24/25.9, two bred: all from cocoons on *Pulicaria dysenterica* (RJH). CO. CORK: Douglas, 20.8/4.9, nine at flowers or dusk flight (KGMB); is first Irish record.

\*PHTHORIMAEA OPERCULELLA Zeller (1) KENT: New Romney, 10.9, in trap with other immigrants (ECP-C); possible immigrant, or from imported tomatoes or potatoes.

EUCHROMIUS OCELLEA Haw. (1) WILTS: Steeple Ashton, 7.10 (G. Smith, *Ent. Rec.*, 95: 33).

\*MARGARITIA STICTICALIS L. (1) HANTS: Southsea, 7.8. (JRL).

URESIPHITA LIMBALIS D. & S. (2) ESSEX: Bradwell-on-Sea, 2.10, female (AJD). KENT: Westbere, 1.10, very worn (TWH).

\**SITACHROA PALEALIS* D. & S. (4) HANTS: Isle of Wight, July, n.d. (RK-J). SURREY: Milford, n.d. (DWB). SUSSEX: Walberton, 14.7 (JTR per CRP); Peacehaven, 15.7 (CRP).

*PALPITA UNIONALIS* Hbn. (c. 80) CORNWALL: Trebrowne-bridge, 25.10 (AS per FHNS). DERBYSHIRE: Kelstedge, 19.9, male (BE). DORSET: Portland, 12.9, female (PHS), 13.9 (RAB), 17.9 (NMH), 9.9, 17.9 (BWW). ESSEX: Bradwell-on-Sea, 31.7, 13.9, 2.10 (AJD); Grays, 1.7 (DJLA) HANTS: Highcliffe, 13.9, 15.9, 16.9, two 17.10 (EHW); Hayling Island, 15.9, female, 16.9, male, 18.9, male, 21.10, male, 30.10, male (JMW); Lymington, 17.9, male, 5.10, male (AJP, ASH). HERTS: Welwyn, 3.9, 18.9 (RWJU). KENT: Dover, 9.7 (GHY); Gravesend, 9.7, 10.7, worn, 9/28.9, nine (RK); Wye, 14.9 (MAE); West Wickham, 15.9 (RB), 17.9 (M & JH); Westbere, 12.9, 18.9 (TWH); New Romney, 10.9, four (JRL, ECP-C); Dungeness, 18.9 (J. Bonney per RD), 18.9, female (RKM). SURREY: Croydon, early 7 (GAC); Bramley, 18.9, male, 20.10, female (R. F. Bretherton); Buckland, 20.10, female, 21.10, male (CH); North Cheam, 16.9 (RFMcC); Wimbledon, 17.10 (Sir J. Dacie). SUSSEX: Peacehaven, 1.7, 19.9 (CRP), 17.9 (B. Skinner); Plaistow, 27.10 (SHC); Eastbourne, 12.7 (SWP per CRP); Walberton, 14.9, 15.9, 16.9, three, 17.9, 19.9, two, 17.10 (JTR per CRP); Ninfield, 18.9 (MSP per CRP); Rogate, 20.10 (JACG). WARWICKSHIRE: Chapelfields near Coventry, 8.7 (CARW). INNER HEBRIDES: Mull, n.d. (MC per DJLA). CO. CORK: Fountainstown, 12.9, 17.9, 8.10 (AAM).

\**DIORYCTRIA ABIETELLA* D. & S. (1) ORKNEY: Orphir, 5.8, with other immigrants (RIL); is probably first Orkney record.

*PAPILIO MACHAON* L. (3 or 4) DURHAM: Nevill's Cross, seen in a garden by Dr. P. Evans, 5.6; Durham City, 11.6, seen by Dr. P. MacDougal (TCD). KENT: Foreness Point, about 25.7, photographed by David Allan (PB). LANCS: Farnworth, 5.8, appeared to be of continental form, but much rubbed (EGH).

*COLIAS HYALE* L. or *C. AUSTRALIS* Vty. (2) DEVON: Branscombe, 2.6, male seen (ECP-C, JRL). SUSSEX: Seven Sisters cliffs, 15.7 (J. Gascoigne per CRP).

*LAMPIDES BOETICUS* L. (1) SUFFOLK: Freston, 23.7, seen by a reliable observer (EM-R per HEC).

\**NYMPHALIS POLYCHLOROS* L. (7 or 8) KENT: Park Gate near Elham, 16.5, photographed by Miss M. Ironside (MAE, EP); Hayes, 15.7, on buddleia (M. Halsey), 19.7 (BE); Beckenham, 29.7 on ground, and again on 30.7, on buddleia (BD per GD); Newington, three on buddleia, about 7.8 (GJJ per PJJ). SURREY: Ranmore Common, 9.5, watched settling and flying round tree trunks (MSH, *Ent. Rec.*, 94 : 203). WARWICKSHIRE: Langley Green, 12.8, possibly locally bred (JEG).

*NYMPHALIS ANTIOPA* L. (4) LINCOLNSHIRE: Saltfleetby, 9.8 (REMP). YORKS: Balby, Doncaster, 12.8, seen by K. Rich (PS). ABERDEEN: Brig of Don, 19.8 (SP per MRY). ORKNEY: Race-wick Hoy, 16.9, two witnesses (per RIL).

*ARASCHNIA LEVANA* L. (1) SURREY: Friday Street, 21.5, in mint condition, beaten from bilberry and retained (D. Down).

Suspected immigrant; previously known in England only as a result of artificial establishment about 1912, but is widespread in France; its foodplant is *Urtica dioica* (nettle).

DANAUS PLEXIPPUS L. (7) DEVON: Fingles Bridge, Drewsteignton, about 10.8, followed in flight by D. Liley (per JMH). DORSET: Durlston, 2.6, 30.6, 7.7 (RJHM). ESSEX: Laughton, end July, in garden, identified later from book (Miss Wilkes per MGM). KENT: Wye, August, early a.m., seen by B. Weekes (per MAE); Harty Ferry, Sheppey, 8.9, probably this species (RH). Recent prevalence of releases from captivity makes immigrant status for these very doubtful.

CYCLOPHORA PUPPILLARIA L. (5) CORNWALL: Lizard, 11.9, male; Poltesco, 12.9, male (B. Skinner). HANTS: Highcliffe, 31.8 (EHW, *Ent. Rec.*, 94: 204). CO. CORK: Fountainstown, 14.9, 17.9 (AAM).

\*SCOPULA RUBIGINATA Hufn. (1) KENT: Dungeness, 31.7, at light (J. Porter per B. Skinner).

RHODOMETRA SACRARIA L. (c. 130) CORNWALL: Ky-nance, 19.6 (M. Halsey); Lizard, 2.9 (J. Clarke), 11.9, 12.9, four males (B. Skinner); Perranporth, 9.9, 18.9, two (FHNS); Mawnan Smith, 11.9, two males (APF); Ruan Minor, several (BE); Mullion, 12.9 (HEC); Par, 15.9, onwards, many, 1.11, f. *sanguinaria* (JG per CRP). DEVON: Yealmpton, 9.8 (RL-P); Stoke Beach, 3.9, male (J. Clarke); Plymstock, 5.9, male (J. Clarke); Axminster, 18.9, 29.9 (ECP-C); Plymouth, 20.9, disturbed from grass (RFH). DORSET: Portland, 19.6 (AB per CRP); Brownsea Is., 5.9, male (AAA); Portland, 17.9, two (NMH), 18.9, two (DCGB), 23.9 (SCP); Poole, 20.9, 21.9 (SCP). ESSEX: Grays, 8.9 (DJLA); Bradwell-on-Sea, 10.9, 22/29.9, five (AJD). HANTS: Winchester, 4.9., 5.9 (DHS); Havant, 5.9, male, 25.9, male (JWP); Highcliffe, 7.9, two, 9/21.9, six (EHW); Weyhill, 8.9, male (MJ); Oakley, 10.9, Stockbridge, 11.9 (AHD); Hayling Is., 17.9, male, 20.9, male ab. *labda*, 29.9, male (JMW); Lymington, 25.9, 4.11, 7.11 (ASH); Sway, 25.9 (ADT); Sparsholt, 29.9, male, 3.11, male (RAB); Sutton Scotney, n.d. (DO). HERTS: Royston, 10.9, female (JR). KENT: New Romney, 9.9 (ECP-C, JRL); Minster-in-Sheppey, 17.9/20.9, four (FHC); Gravesend, 26.9, two, 28.9 (RK); St. Mary Cray, 28.9, male (RGC). SOMERSET: South Chard, 7.9/19.9, twelve including one f. *sanguinaria*, 3.11 (AJ). SUFFOLK: Walberswick, n.d. (HEC). SURREY: Addington, 20.9, female (B. Skinner); Bramley, 14.9, female, 1.10, male very worn (R. F. Bretherton); Croydon, 25.9, two (KGWE); Leigh, 25.9, male, 3.11, female (RF); Buckland, 28.9, male, 29.9, male (CH); Rushmoor, 19.9 (PAD); Wisley, 7.9 (AJH); Thursley, September, two (per DWB). SUSSEX: Amber-sham, 30.6 (B. Skinner); Peacehaven, 28.8, 7.9, 9.9, 23.9, all males (CRP); Brighton, 5.9 (KR per CRP); Ringmer, 6.9 (AB per CRP); Walberton, 10.9, 13.9, male, 1.10 (JTR per CRP); Ninfield, 14.9, 28.9 (MSP); Plaistow, 25.9 (SHC); Hassocks, 2.11 (D. Dey). WEST-MORLAND: Beetham, 10.9, 11.9, three (J. Briggs); Kendal Wood, 11.9, male, 12.9, female, 13.9, 16.9 (NLB). WILTS: Redlynch, 6.9 (ECP-C); Ashton Common, 12.9, 14.9 (G. Smith). MONMOUTH:

Usk, 10.9, male (GANH). CO. CORK: Fountainstown, 20.9 (AAM). CO. KERRY: Killarney, 23.6 (RFH).

ORTHONAMA OBSTIPATA F. (69) CORNWALL: Boscastle, 31.8 (ECP-C); Kynance, 9.9, female (B. Skinner); Lizard, 10.9, male, 11.9, male, female (B. Skinner); Poltesco, 12.9, female (B. Skinner) Par, 2.11 (per CRP). DEVON: Axminster, 1.11, male, 2.11, male, 3.11, female (ECP-C). DORSET: Portland, East Cliff, 18.9, B.O., 2.9, 3.11, two (MR per NFH). HANTS: Hayling Is., 17.9, 21.9, 28.9, males, 31.10, two females, 1.11, male (JMW); Highcliffe, 25.10, 4.11, two, 6.11, 8.11, two (EHW); Lymington, 2.11, two, 5.11, 7.11 (ASH); Sparsholt, 9.11, male (RAB). HERTS: Much Hadham, 2.8 (DEW). KENT: Dungeness, 9.9 (ECP-C); Wye, 24.10, female (MAE); Orpington, 2.10 (RGC). OXON: Caversham, 3.9 (BRB). SURREY: Bramley, 2.9, male, 30.10, male, 4.11, female (R. F. Bretherton); Wisley, 9.11, male; Leigh, 7.11, male; Rushmoor, 25.10 (PAD). SUSSEX: Peacehaven, 7.6, male, 19.9, female, 18.10, male (CRP); Walberton, 12.9, 28.9, 1.11, 4.11, two females, 6.11, 7.11, two females (JTR per CRP); Ninfield, 19.9, female, 1.10, female, 9.11, male (MSP); Rogate, 9.11, female (JACG). WARWICKSHIRE: Charlecote, 2.10, 21.10, 30.10 (DCGB, AG, *Ent. Rec.*, 94: 239). YORKS: Spurn, 3.11 (BRS). INNER HEBRIDES: Loch na Keal, Mull, 17.9, three (Corley, *Ent. Gaz.*, 34: 4). CO. CORK: Fountainstown, 4.9, 2.11 (AAM).

\*ENNOMOS AUTUMNARIA Werneburg (c.10) HERTS: Much Hadham, mid 9, "steady arrivals, some years none" (DEW). LINCS: Gibraltar Point, 22.9 (REMP). YORKS: Spurn, 17.9, first county record (BRS). Possibly immigrant, probably vagrant from Essex or Kent.

\*HYLAEA FASCIARIA L. (1) SUSSEX: Peacehaven, 17.9, female at light, f. *prasinaria* (CRP). Possibly immigrant: this form is very rare, except in Kent where it is resident.

AGRIUS CONVULVULI L. (c. 180 moths, two larvae) BERKS: Uffington, 3.8, 10.9 (EWC). CORNWALL: Mylor, 31.8 (RKM); Mullion, 10.9 (HEC); Lizard, 11.9, male (FHNS), 19.9, on light-house wall (DCGB); Poltesco, 12.9, male (B. Skinner); Perranporth, 6.9, male (per FHNS). DEVON: Chillington, 31.8, female (WLO'H, *Ent. Rec.*, 94: 237); Woodbury, mid. 8 / mid. 9, c.20 (VWP). DORSET: Weymouth, 30.8 (VWP); Portland, 10.9 (AJP), B. O., 10.8, 28.8, 2.9, 13.9, 20.9 (MR per NFH); Arne, 15.9 (BPP); Studland, 25.9, two (DCGB). ESSEX: Danbury, mid. 9 (GAP per AME); Bradwell-on-Sea, 18.9, 19.9, two, 26.9, three (AJD). Elmton, 19.9, with 200 *P. meticolosa* (AME); Saffron Walden, 5.10 (AME); Colchester, 7.10, three (AW). GLOS: Tetbury, 25.9 (JN). HANTS: Highcliffe, 2.8, worn, 1.10 (EHW, *Ent. Rec.*, 94: 204); Sparsholt, 20.9, male (RAB); Lymington, 22.9 (ADT); Fisher's Pond, 27.9 (AHD); Sway, 1.10 (ASH); Havant, 2.10, at nicotiana (E. Castle per IH); Ashurst, 3.10 (per RKM); Hythe, 7.10 (per RKM). HERTS: Royston, September, two (JR). KENT: Dover, 12.8, larva (GHY), 2.10, adult (TWH); Ashford, August, larva (per MAE); Boughton Aluph, 5.9, male, 25.9, male, female, 2.10, male (MAE); Sittingbourne, 17.9, 24.9 (JB); Minster-in-Sheppey, 17.9, 19.9 (FHC); Westbere, 17.9,

30.9, 4.10 (TWH); Deal, 17.9 (per TWH); Wrotham, 23.9 (AR); Kennington, 30.9 (per MAE); Brook, 30.9 (per MAE); Sandwich, September, several (per MAE); Cliffe Woods, 1.10, at window (per EP); Wye, 6.10 (MAE); East Malling, 6.10 (DC); Dymchurch, 7.7, battered, 2.10, 3.10 (JO); Whitfield, n.d. (per R. F. Buddle). LINCS: Saltfleetby, 3.8; South Thoresby, 18.9, 22.9, 25.9, all males (REMP). SOMERSET: South Chard, 19.9 (AJ). SUFFOLK: Nowton near Bury, 14.9, 27.9 (per HEC); Bury St. Edmunds, 29.9 and one earlier (RE per JLF). SUSSEX: Walberton, 27.7, 6.9, 10.9, 15.9/22.9, five, 26.9/30.9, nine, 1.10/5.10, eight, 11.10 (RTR per CRP); Eastbourne, 8.8 (DAC); Iden, 31.8 (BG); Anstye, 23.8 (TN); Plais-tow, 15.9 (SHC); Peacehaven, 23.9, male, 27.9, 30.9, male, 1.10, male, female at nicotiana, 3.10, female, 4.10, male, female, 5.10, two, 6.10, male (CRP); Ringmer, 26.9, two males (AB per CRP); Ninfield, 27.9 (MSP); Hassocks, 28.9 (D. Dey); Brighton, 30.9, male, 1.10, male, female (per CRP), 3.10 (RCD); Fairlight, 3.10, on a door (per CRP). WARWICKSHIRE: Charlecote, 23.9, 27.9 (AG per DCGB, *Ent. Rec.*, **94**: 239). WESTMORLAND: Beetham, 31.8, male, female, 14.9, male (J. Briggs). WORCESTERSHIRE: Sinton Green, late 9 (JRG). ABERDEEN: Aberdeen City, 28.9 (MRY); North Sea oil rigs: Fulmer, 26.9; Sedneth, 30.9; Sedco, 11.9; Auk, 28.10 (per MRY). AYRSHIRE: Kilmarnock, October (per J. Heath). DUMFRIES: Moffat, 28.9, on car (AB). INNER HEBRIDES: Loch na Keal, Mull, 17.9 (Corley, *Ent. Gaz.*, **34**: 4). ORKNEY: Orphir, 10.9, 18.9, two (RIL). SELKIRK: Galashiels, 12.10, on wall (AB). CO. CORK: Fountainstown, 17.9 (AAM). CO. WATERFORD: Villierstown, early 8, many 1.9 (per KGMB). CO. WICKLOW: Wicklow Harbour, 22.9 (JCO'C).

ACHERONTIA ATROPOS L. (12 moths, four larvae, one pupa) ESSEX: Colchester, 7.10, brought to museum (per curator). HANTS: Ashurst, 8.10, larva on potato (per RKM). KENT: Dover, about 1.10, brought to museum (per TWH); Whitfield, n.d., pupa (R.F. Buddle). LANCS: Bury, 22.10, later brought to Bolton Museum (EGH). NORTHANTS: Dean's Hanger School, 6.9, two full grown larvae, female emerged 20.10 (per DCGB). NOTTS: Harworth, 4.9 (Mrs. Fitzakerley per PS). OXON: Tackley, n.d., three larvae (PHS). RUTLAND: Stretton airfield, 10.11, at hanger lights (MWT per J. Heath). SUFFOLK: Felixstowe, 19.9 (per HEC); Southwold, early 10 (EAE per HEC). SURREY: Betchworth, 14.9, dead on path (J. Colombé). SUSSEX: St. Leonards-on-Sea, 30.9, at rest on garden path (MJM per CRP); Ore near Hastings, 25.10, at rest in garden (AW per CRP). ABERDEEN: Aberdeen City, 28.5 (MRY); North Sea oil rig F Delta, 3.10 (per MRY).

HYLES GALLII Rott. (3) ESSEX: Bradwell-on-Sea, 31.7 (AJD). SUSSEX: Ringmer, 14.7 (AB per CRP). ORKNEY: Stronsay, 13.7, female (G. Sutherland per RIL).

HYLES LINEATA LIVORNICA Esp. (7) DORSET: Portland B. O., 2.7 (MR per NFH). KENT: Orlestone Forest, 23.6 (RGC, *Ent. Rec.*, **94**: 204); Newington, 16.9 (CGL). OXON: Emmer Green, 2.7 (DN per BRB). SUSSEX: Peacehaven, 30.6 (CRP); Brighton, 8.7, 5.9 (KR per CRP).

HIPPOTION CELERIO L. (1) ROXBURGH: Hawick, 7.11, found under window (per AB).

\*EUPROCTIS CHRYSORRHOEA L. (2) YORKS: Spurn, 9.7, male at light (B. R. Spence); Rudston, 15.7 (AHE per PQW).

LYMANTRIA DISPAR L. (1) KENT: Sevenoaks, 4.8, male at light (JD per B. Skinner).

\*EILEMA LURIDEOLA Zincken SUSSEX: Walberton, 14.7, "abundant suddenly; hundreds on and around trap" (JTR per CRP). Possibly immigrant.

\*LITHOSIA QUADRA L. (c. 50) [CORNWALL: Perranporth, 31.7, three males (FHNS). Probably from resident colonies nearby.] DEVON: Axminster, 14.7 (ECP-C). DORSET: Portland B. O., 9.7 (MR per NFH); Arne, 10.7, two, 11.7, 14.7: all males (BPP). HANTS: Lymington, 28.6, 9.7, five, 11.7, four: all males (AJP); Highcliffe, 9.7, two, 10.7, seven, 12.7, 14.7, seven: all males (EHW); Sway, 11 & 12.7, six males (ASH). KENT: Boughton Aluph. 1.7 (MAE); Orlestone, 9.7, male (J. Halsey); Dover, 13.7, male (GHY). SURREY: Buckland, 28.6, male (CH). SUSSEX: Walberton, 1.7, 10.7, 14.7, males (JTR per CRP); Peacehaven, 10.7, male (CRP); Rogate, 11.7, worn male (JACG). Numbers, dates and association strongly suggest immigration.

UTETHEISA PULCHELLA L. (1) CO. KERRY: Fenit, near Tralee, 29.10, in good condition at car headlights (JWL per RFH).

\*EUPLAGIA QUADRIPUNCTARIA Poda (1) DORSET: Portland B.O., 28.8/2.9, one seen about the garden by day (MR). Possibly immigrant; otherwise vagrant from south Devon.

\*MEGANOLA ALBULA D. & S. (c.20) ESSEX: Bradwell-on-Sea, 2.7, 15.7, 1.8 (AJD). KENT: Minster-in-Sheppey, 13.7, three, nightly until 28.7 (FHC, *Ent. Rec.*, **94**: 203). Some possibly immigrant, others from local colonies.

\*NOLA AERUGULA Hbn.: TRITUBERCULANA Heslop: CENTONALIS Hbn. (8) ESSEX: Bradwell-on-Sea, 15.7 (AJD). KENT Minster-in-Sheppey, 13.7, three (FHC, *Ent. Rec.*, **94**: 203); Orlestone, 14.7 (B. Skinner & JMC-H). YORKS: Spurn, 9.7, 10.7 (B. R. Spence); Flamborough, 13.7 (PQW, *Ent. Rec.*, **95**: 118). Probably immigrants: regarded as perhaps extinct in Kent since c. 1898.

\*EUROIS OCCULTA L. (24) ESSEX: Harlow, 17.7 (BMcR). MIDDSEX: Grange Park, 1.8 (RD); Percy Green, 2.8 (DEW). MONMOUTH: Usk, 3.8, male (GANH). NORFOLK: Hickling, 29.7 (TNDP). STAFFS: Eccleshall, 28.7 (G. Moss per RGW); Penkridge, 31.7 (BG per RGW); Scot Hay, Newcastle-under-Lyme, 2.8, two, 3.8, two, 4.8, three (G. Burgess per RGW). This species only once before recorded from Staffs., a 19th cent. record (RGW). SUFFOLK: Cavenham, 31.7, male of continental form (CGP, *Ent. Rec.*, **94**: 202). WARWICK: Charlecote, 29.7, 31.7 (AG per DCG, *Ent. Rec.*, **94**: 239). WESTMORLAND: Kendal Wood, 31.7, 5.8 (NLB). YORKS: East Ayton (TAP per PQW). ORKNEY: Orphir, 7.8, three, 8.8, three, all pale, with broad ashen grey post-median fascia (RIL).

\*DISCESTRA TRIFOLII Hufn. (1) ORKNEY: Orphir, 5.8, with undoubted immigrants (RIL).

\*NOCTUA PRONUBA L. HANTS: Keyhaven, 13.7, a massive immigration; Highcliffe, 13.7, about 3,000 in cliff light trap, about 400 <sup>3</sup>/<sub>4</sub> mile inland, continuing plague until 25.7 (EHW). Long regarded as migrant on the continent, but not previously confirmed as immigrant to Britain.

MYTHIMNA ALBIPUNCTA D. & S. (1) DORSET: Portland, 29.7, one netted at dusk (AME, ECP-C).

MYTHIMNA VITELLINA Hbn. (in Cornwall many, 22 elsewhere) CORNWALL: Chyenhal, 30 & 31.5, several faded (MWFT, *Ent. Rec.*, **94**: 150). Mawnan Smith, 19.6, male, 29.8, male, 11.9, female, two males (APF); Porthleven, 20/25.8, six (NG, *Ent. Rec.*, **94**: 203); Lizard, 27.8, 28 & 29.8, twenty five (DCGB), 1.9, many (SCP), 2 & 3.9, seven (MJS), 9/12.9, very common (B. Skinner), 11.9, four (FHNS); Gunnalloe, 2.9, male (RJH); Sennen, 2.9 (M. Hadley); Mullion, 10.9, two, 11.9, 12.9 (HEC); Perranporth, 9.9, two, 18.9 (FHNS). DEVON: Stoke Beach, 3.9, two males (J. Clarke). DORSET: Studland, 2.5 (DCGB); Portland B. O., 1.9, 3.9, 10.9, 15.9, 19.9, 2.10, 5.10, 6.10 (MR per NMH), East Cliff, 14.9 (IS per NMH); Arne, 30.9 (BPP). ESSEX: Bradwell-on-Sea, 29.9 (AJD). HANTS: Weyhill, 23.8, male, Hayling Is., 8.9, female, 6.10, male (JMW). SURREY: Oxted, about 1.11 (TJD). YORKS: Spurn, 18.9 (B. R. Spence). CO. CORK: Fountainstown, 16.9, 17.9, 18.9 (AAM).

MYTHIMNA UNIPUNCTA Haw. (19) CORNWALL: Mawnan Smith, 23.6, worn male (APF); Lizard, 4.9 (EHW per AJP); Black Head, 11.9 (FHNS); Rocky Hill, Scilly Is., 13.10, at ivy (NMH). DEVON: Axminster, 1.11, male (ECP-C). DORSET: Studland, 25.9 (DCGB); Portland B. O., 2.10, 6.10, 10.10 (MR per NMH). HANTS: Hayling Is., 22.8, male 28.9, female, 18.10, female, 28.10, male (JMW). SURREY: Rushmoor, 18.9 (PAD). INNER HEBRIDES: Loch na Keal, Mull, 17.9, three (Corley, *Ent. Gaz.*, **34**: 4). CO. CORK: Fountainstown, 16.9, 18.9 (AAM).

MYTHIMNA LOREYI Dup. (1) CORNWALL: Porthleven, 25.8, dark (NG, *Ent. Rec.*, **94**: 203).

\*SENTA FLAMMEA Curtis (2) KENT: Sandwich B.O., 30.5, 5.6 (per TWH). The species is evidently established inland at Wye, having been noted there in numbers by MAE both in 1982 and in 1983.

\*ENARGIA PLAEACEA Esp. (4) DORSET: Arne, 18.9 (BP & DCGB). KENT: Long Rope, Orlestone Forest, 1.8, male (CGL). SURREY: Croydon, 16.7 (GAC). SUSSEX: Walberton, 18.7, male (JTR per CRP).

\*PARASTICTIS SUSPECTA Hbn. (6) YORKS: Muston, 17.7, 21.7, 23.7, three, 25.7: all darker than the local form and much worn (PQW).

\*CELAENA LEUCOSTIGMA Hbn. (24) YORKS: Muston, 18.7, 1.8/27.8, fifteen, 14.9 (PQW). ORKNEY: Orphir, 4.8, 6.8, 7.8, three: *f. typica* and *f. fibrosa*, not *f. scotica* (RIL).

**SPODOPTERA EXIGUA** Hbn. (c. 180) BERKS: Uffington, 25.7, 18.9 (EWC). BUCKS: New Bradwell, 13.7, male (M. Hadley). CORNWALL: Mawnan Smith, 21.6, worn male, 11.9, fresh male (APF); Lizard area, 9/12.9, eleven (B. Skinner, APF, BE). DEVON: Stoke Beach, 3.9, female (J. Clarke); East Budleigh, 11.9, female (RJH); Axminster, 12.7, two (ECP-C). DORSET: Portland B. O. and East Cliff, 12/18.7, about twenty, 28.8/29.9, about 22 (AJP, BE, MR); Poole, 15.9 (SCP); Arne, 18.9 (BPP); Studland, 25.9 (DCGB). ESSEX: Bradwell-on-Sea, 19.7, 4/27.9, eighteen (AJD); Grays, 23.7 (DJLA). HANTS: Highcliffe, 8.7/21.7, thirteen (EHW); Lymington, 9.7, 23.7, 27.8/17.9, four (AJP); Oakley, 13.7 (AHD); Medstead, 13.7, three (FHNS); Hayling Is., 10.7/21.7, nine, 1.9, 5.9 (JMW); Brockenhurst, 14.8 (M. Halsey); Weyhill, 9.9, 17.9 (MJ); Sparsholt, 19.9, three, 20.9 (RAB). KENT: Greatstone, 14.7 (B. Skinner); Westbere, 19.7 (TWH); Boughton Aluph, 22.7, Wye, 22.7 (MAE); Newington, 9.9 (PJJ); New Romney, 10.9, two (ECP-C). MONMOUTH: Usk, 6.9, 10.9 (GANH). OXON: Caversham, 9.7, 18.7 (BRB). SURREY: Bramley, 11/20.7, four, 9.9, 4.9 (R. F. Bretherton). SUSSEX: Peacehaven, 21/24.6, four, 14/18.7, six, 28.8/18.9, five (CRP, B. Skinner); Rogate, 23.6, worn, 24.8, 11.9, 19.9 (JACG); Ninfield, 14/19.7, four, 12/14.9, three (MSP); Plaistow, mid. 7 (SHC); Walberton, 9/18.7, four, 22.8 (JTR per CRP); Ringmer, 15.9, two, 28.9 (AB per CRP). WARWICKS: Charlecote, 8.7, 21.8, 17/19.9, four (DCGB, AG, *Ent. Rec.*, 94: 239). YORKS: Spurn, 18.7, 21.7 (B. R. Spence). DUMBARTON: Gartlea, 13.7, one at cersatium by day (ICC). DUMFRIES: Dumfries, about 10.7, two (RK-J). CO. CORK: Riverstock, 17.7, male (KGMB); Fountainstown, 9.9, 18.9 (AAM). CO. KERRY: Kilmaha, 9.7 (KGMB).

**HELICOVERPA ARMIGERA** Hbn. (14) CORNWALL: Lizard, 9.9, female (B. Statham per BE); Mullion, 10.9 (HEC). DEVON: Plymstock, 30.8, male (J. Clarke). DORSET: Portland B. O., 16.7, East Cliff, 17.7, 8.10 (MR, NMH). ESSEX: Bradwell-on-Sea, 20.9, 27.9 (AJD). HANTS: Lymington, 29.9, male (AJP). KENT: Newington, 24.9, female (PJJ). SOMERSET: South Chard, 18.9 (AJ). SUFFOLK: Walberswick, 26.8 (HEC). SUSSEX: East Dean, 9.10 (BG); Ninfield, 5.11 (MP). WARWICKS: Charlecote, 23.9, 27.9, females, both infertile eggs (AG, DCGB, *Ent. Rec.*, 94: 239).

**HELIOTHIS PELTIGERA** D. & S. (c. 50 moths, over 200 larvae) BERKS: Didcot, 9.9 (RL per BRB). CORNWALL: Loe Bar, late 8, larvae common on *Matricaria* (NG, *Ent. Rec.*, 94: 203). DEVON: Plympton, 18.7, female (RJH); Axminster, 19.9 (ECP-C). DORSET: Portland B. O., 21.6, 4.7, 9.7, 16.7, 20.7, 23.7 (MR per NFH); East Cliff etc., 18.6, two females, 17.9, dark male (AJP), 18.6, two males (EHW), 16.7 (NMH), mid.7, female (J. Porter); Swanage, mid. 7, two females (J. Porter). HANTS: Highcliffe, 16.7, 10.9, 15.9, 20.9, dark form (EHW); Hayling Is., 23.7, male (JRW). HERTS: Bushey, 19.7 (BG). KENT: Newington, 13.7 (CGL); Detling, 13.7 (NFH); Dover, 23.7, f. *pallida* (GHY); Sandwich Bay, July (TWH); Dungeness, 5.9, three, 18.9, three (B. Skinner, JMC-H, RFMcC), 3.8, larvae common on *Senecio viscosa* (B. Skinner),

10.9, about 50 larvae (ECP-C, DCGB). OXON: Caversham, 19.9 (BRB). STAFFS: Mill Meece, 17.7, at knapweed flowers by day (DE per RGW); Tettenhall near Wolverhampton, 26.7, in m.v. trap (Miss P. S. per RGW). Never before recorded from Staffs. (RGW). SUFFOLK: Walberswick, 19.9, 25.8, about 20 larvae (HEC). SURREY: Buckland near Reigate, 4.8 (CH); Rushmoor, 11.7 (PAD); Leigh, 21.7, male (RF); Addiscombe, 18.9 (KAGE). SUSSEX: Plaistow, 14.6 (SHC); Walberton, 23.6, 18.7, Petworth, 18.7 (JTR per CRP); Peacehaven, 24.6, 5/22.7, five (CRP); Lancing, 18.7, on knapweed (RMC per CRP); Rogate, 19.7 (JACG); Hove, 3.9, at rest (RMC per CRP); Fairlight, 3.10, on a door (per CRP). Larvae: Crumbles, 31.7, twelve (CRP), 5.8, fifteen (M. Hadley, JMC-H), 10.8, seventeen (MP); Church Norton, 4.8, five (SHC), Pagham, 10.8, many (RAB), 13.8, twenty-three (R. F. Bretherton), 3.9, full grown (B. Skinner), 18.9 (J. Clarke), 3.10, five full grown (JWP). WILTS: Ashton Common, 18.9 (G. Smith).

EUBLEMMA PARVA Hbn. (two moths, about 10 larvae) DEVON: Chudleigh Knighton, 20.8, larva feeding on flower head of *Pulicaria dysenterica*, bred 19.9 (RJH); Weston Bay, 8.9, two larvae feeding on flower head of *Inula conyza* (RJH); Maidencombe, 19.9, larva on *P. dysenterica* (RJH), 25.9, three larvae on *P. dysenterica* (ECP-C, EWC). DORSET: Portland, 23.7, at m.v. light (B. Withers per B. Skinner). DUMFRIES: Parkgate, Dumfries, 10.7, in m.v. trap (RK-J).

\*DELTOE BANKIANA F. (2) KENT: St. Margaret's Bay, on cliffs, 14.7, male (J. Platts, *Ent. Rec.*, **94**: 200); Boughton Aluph, 15.7 (MAE). Possibly immigrant, or from recently established colony.

EARIAS BIPLAGA Walker (1) HANTS: Lymington, 23.7, male at light, det. D. S. Fletcher (AJP). Third British record; possibly introduced.

CHRYSODEIXIS ACUTA Walker (3) ESSEX: Bradwell-on-Sea, 17.9, female, ova reared (AJD). SUSSEX: Walberton, 18.9, 2.11 (JTR per CRP & B. Skinner).

TRICHOPLUSIA NI Hbn. (69) BERKS: Didcot, 9.9 (R. L. per BRB). DEVON: East Budleigh, 7.9 (RJH). DORSET: Portland East Cliff, 10.9 (AJP), 18.9 (DCGB), 18.9 (PC & IS per NMH); Poole, August (TB per MANM), 15.9 (SCP); Arne, 17.9 (BPP). ESSEX: Grays, 15.9 (DJLA); Bradwell-on-Sea, 25.9 (AJD). GLOS: Tetbury, 16.9 (JN); Stroud, 16.9 (LP per JN). HANTS: Old Basing, 10.7 (PAD); Medstead, 11.7 (FHNS); Southsea, 14.7 (JRL, *Ent. Rec.*, **94**: 204); Weyhill, 11.9, 16.9 (MJ); Lymington, 11.7, male, 16.9, female, infertile eggs (AJP); Hayling Is., 12.9, male (JRW); Sparsholt, 17.9, female, 20.9, male (RAB); Sway, n.d. (ASH). HERTS: Royston, 17.9, male (JR). KENT: Gravesend, 13.9, two, 15.9, 17.9, three (RK); Newington, 15/17.9, three (CGL); Dungeness, 17.9 (RD). LINCS: South Thoresby, 18.9 (REMP). NORFOLK: Hockwold, early 9 (JLF). SOMERSET: South Chard, 15.9, 18.9 (AJ); Weston-super-Mare, 17.9 (CSHB). SUSSEX: West Chiltington, 9.7 (JTR per CRP); Peacehaven, 16.7, male, 18.7, female, eggs infertile, 20.7, male, 22.7, male, 23.7, female, 12.9, male, female,

14.9, female, 15.9, two males, 18.9, male, female (CRP), 18.9 (DEW); Walberton, 17.7, 18.7, 21.8, 17.9 (JTR per CRP); Brighton, 16.9 (KR per CRP); Glynde, 12.9 (WB per CRP). WARWICKS: Hartshill Hayes, 18.9 (RT); Charlecote, 19.9, 20.9, Marton, 20.9 (DCGB, *Ent. Rec.*, **94**: 239); Coventry, 19.9 (MV per DCGB). YORKS: Spurn, 17.7 (B. R. Spence); Selby, 16.9 (SMJ). CO. CORK: Fountainstown, 19.9, 10.10 (AAM).

DIACHRISIA ORICALCEA F. (2) SUSSEX: Walberton, 3.8, 9.10 (JTR per CRP).

MACDUNNOUGHIA CONFUSA Steph. (2) ESSEX: Bradwell-on-Sea, 24.8 (AJD). NORFOLK: Hickling, 3.8 (TNDP).

\*AUTOGRAPHIA BRACTEA D. & S. (5) HERTS: Much Hadham, 31.7 (DEW). KENT: St. Margaret's Bay, 14.7, on cliffs (Platts, *Ent. Rec.*, **94**: 200); Minster-in-Sheppey, 14.7 (Clouter, *Ent. Rec.*, **94**: 203). YORKS: Muston, 17.7, 20.7 (PQW). Probably immigrants; alternatively, resulting from internal spread.

\*SYNGRAPHIA INTERROGATIONIS L. (2) NORFOLK: Hickling, 3.8 (TNDP). ORKNEY: Orphir, 5.8, of Scandinavian form (RIL).

CATOCALA FRAXINI L. (1) HANTS: Highcliffe, 10.9, escaped from house wall above light trap (EHW, *Ent. Rec.*, **94**: 204).

CATOCALA NYMPHAGOGA Esp. (2) CARDIGAN: Tregaron, 28.7, in Rothamstead light trap (IJLT). HANTS: Denny Lodge, New Forest, 31.7, in Rothamstead light trap (FAC per IJLT). Species new to Britain.

\*RIVULA SERICEALIS Scop. (23) YORKS: Spurn, 31.7, 1.8, two, 3.8, 4.8, 5.8, four (B. R. Spence); Wykham Forest, 30.7/1.8, 3.8, 4.8; Hornsea, 1.8; Flamborough, 1.8; Muston, 2.8, 4.8, two, 6.8, two, 8.8, three (PQW). These sudden appearances on or near coast, coincidentally with undoubted immigrants, suggest the arrival of a migratory swarm, either from abroad or possibly from East Anglia.

\*PARASCOTIA FULIGINARIA L. (1) YORKS: Spurn, 23.7, in trap (B. R. Spence). Probably the first county record. Origin possibly similar to that of *R. sericealis*.

HERMINIA ZELLERLIS Wocke (1) PEMBROKE: Stackpole NNR, about 29.7, in light trap (Miss ND per IJLT). New to Britain.

[POLYPOGON TARSICRINALIS Knoch SUFFOLK: an apparently strongly established colony was discovered in July, moths and larvae from which were shown (B. Skinner & BE, AES exhibition, 9.10.1982). The only two British specimens previously known were taken on the Suffolk coast in 1965 and 1966 and have been regarded as immigrants.]

## POSTSCRIPT

A number of records, including three of considerable import, were received too late for mention in the first part of our paper, notably those of *Catocala nymphagoga* and *Herminia zelleralis*

(but see the Note in this issue by I. J. L. Tillotson). Likewise, the record of the single example of *Lymantria dispar* and of the Dorset specimen of *Eublemma parva*. Furthermore, we have since learnt that *Autographa bractea* was in fact taken in Kent as long ago as 1974, but was never recorded, so that its occurrence in Kent in 1982 does not constitute a new county record.

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A NOTE ON FOODPLANTS OF TWO CHRYSOLINA SPP. (COL.: CHRYSOMELIDAE). — Two notes have appeared in recent volumes of this Journal (93: 27, 94:199) recording *Chrysolina polita* L. as feeding in at least moderate numbers on Gipsywort, *Lycopus europaeus* L. Evidently, therefore, this is a major foodplant of *polita* in some parts of the country — more especially, I would think, in the midlands and north. In the south my experience is that the primary host is water mint, *Mentha aquatica* L.; for where the beetle does occur on it, it is often present in large numbers. A secondary host at any rate in the south-east is marjoram, *Origanum vulgare* L., a plant of chalk downs. Here, however, there is a great difference, the beetle always occurring — so far as I have found — singly and, as it seems, in complete isolation, even when the marjoram is swept over quite wide areas. Since the plant often grows extensively and forms large masses, one can but speculate as to why populous colonies of the *Chrysolina* do not build up in such circumstances.

The rather uncommon *C. brunsvicensis* Grav. is usually stated to feed on *Hypericum* (e.g. by Joy, 1932, for Britain and by Mohr, 1966, for mid-Europe). I have taken it once on that plant (Shefford, Beds., 1930) and seen the imago thereon (Epping Forest, 1941), likewise several larvae (N. Somerset, 1931); unless these last belonged to *C. hyperici* Forst., which I doubt. But it also, and even perhaps more often with us, lives on *Mentha aquatica* — a fact that appears to have escaped notice very largely. My first specimen (1928) was actually on a leaf of the mint, with a *C. polita*, in a N. Somerset valley, the second not far away by a stream where again there was no St. John's wort, but certainly mint at no distance. At Rickmansworth, Herts. (24.ix.46), I took two by sweeping among thick beds of water-mint, and a few at roots of herbage on the cliffs at Totland Bay, Isle of Wight (23.v.48) in a damp spot where *Mentha* may well have been present, but again no *Hypericum* was visible.

The attachment of *C. brunsvicensis* to foodplants of different families is paralleled in the genus by *C. graminis* L., which has been found (in Britain) on both *Mentha* and *Tanacetum*. In each case, be it noted, both plants are strongly aromatic, and this is doubtless the crucial factor. Sometimes it is hard to reconcile host data in *Chrysolina* as between Britain and the Continent: thus for *C. staphylea* L., Mohr gives three Labiatae (one of them *Mentha*) whereas here it appears only to have been certainly associated with *Ranunculus*. — A. A. ALLEN.

RELATIONSHIP BETWEEN *NORDMANNIA ESCULI*  
HUEBNER (LEP.: LYCAENIDAE) AND  
*CAMPONOTUS CRUENTATUS* LATREILLE  
(HYM.: FORMICIDAE)

By J. MARTIN and P. GURREA \*

### Introduction

Associations between ants and Lycaenid larvae are known since the nineteenth century, though the biological meaning as well as the origin and evolution of this relationship and the "myrmecophilous" organs have not been thoroughly explained. One of the causes of this, is a lack of knowledge evidenced by the scarcity of bibliography of this subject which has, until now, hampered a global understanding of a phenomenon which seems rather generalized in nature. This is the reason why we would like to give a new reference of these relationships in this paper.

### Results

Results come from direct field observations in the locality known as "Dehesa de Arganda" (UTM 30tvk66). This area corresponds to a man-altered oak forest on basic (alkaline) soil, *Cephalanthero-Quercetum faginae* (RIVAS-MARTINEZ, 1982).

The caterpillars of *Nordmannia esculi* Huebner fed on leaves of *Quercus coccifera* and were attended by ants of the species *Camponotus cruentatus* Latreille. The relationships were normal inside the group of facultative phytophagous myrmecophilous larvae of WARNECKE (1932). The ants were observed close to the caterpillars, slightly touching them with their antennae and buccal parts.

Two caterpillars were taken to our laboratory in order to continue their development until the attainment of the imago phase. The butterflies, a male and female, as well as the accompanying ants have been placed in the collections of the Instituto Español de Entomología.

### Discussion

We have found no previous citation of *N. esculi* in association with ants, though other closely-related species of Lycaenids are known to do this as stated by MALICKY (1969). Among the closest references we can point out that of FIORI (1957) of *N. ilicis* Esper accompanied by *C. arthiops* Latreille. The ant, *C. cruentatus*, is rather frequent on mediterranean forests and, after the experiments of MALICKY (*op. cit.*) and bibliographical data given on other species of the same genus, becomes readily associated with Lycaenid larvae. Ants of this species have been previously found by us (MARTIN, 1982) with other Lycaenids.

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### Summary

Caterpillars of *Nordmannia esculi* have been found accompanied by *Camponotus cruentatus*. The larvae of the Lycaenid fed on leaves of *Quercus coccifera* in Arganda (Madrid).

### Resumen

Se han encontrado orugas de *Nordmannia esculi* acompañadas por *Camponotus cruentatus*. Las larvas del Licenido se alimentaban de hojas de "coscoja" (*Quercus coccifera*) en Arganda (Madrid).

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OCHTHERA MANTIS DEG. (DIPT.: EPHYDRIDAE) IN NORFOLK. — It is difficult to discover what is known of the British distribution of this remarkable Ephydrid, since records relating to flies of this family are few and scattered. *O. mantis* may, possibly, be already well known from the Fen and Broad districts of East Anglia; but as it appears to be both uncommon and extremely local (cf. Colyer & Hammond, 1951, *Flies of the British Isles*: 219-221), it may be worth recording my capture of a specimen at Catfield, Norfolk, on 22 June 1981. It was flying low down among lush herbage in open wet fen, and accompanied by another fly characteristic of such habitats — *Tropidia scita* Har. (Syrphidae). Colyer & Hammond (*l.c.*), in an interesting account of their experiences with the present species, mention finding it in some numbers in a very small area in the New Forest, in mid-April, but that in June the flies were scarce, and by September they had all disappeared. This may explain my finding but one specimen at Catfield, and the indication is that *O. mantis* is basically a spring insect. — A. A. ALLEN.

EARLY STAGES OF THE AFRICAN NYMPHALID  
*NEPTIDOPSIS FULGURATA PLATYPTERA*  
ROTHSCHILD AND JORDAN

by R. C. DENING, M.A., F.R.E.S.\*

ABSTRACT

A description is given of the ovum, larva and pupa of *Neptidopsis fulgurata platyptera*, together with notes on oviposition.

BIOLOGICAL NOTES

This butterfly is common in gardens on the Msasani Peninsula outside Dar es Salaam, Tanzania. It appears to be much commoner than species of *Neptis* in this locality, flying continuously from December to May, and probably well into the dry season.

On 11th January 1981, a female was observed flying at short intervals up and down a hedge and attempting to oviposit on the tender shoots of the common climbing vine *Dalechampia scandens* L. var. *hildebrandtii* (Pax) Pax (Euphorbiaceae). On examining the shoots, no eggs could be found. The procedure continued for about half an hour, exasperating alike for an entomological observer and no doubt also for parasitic wasps and Phorid flies. Suddenly, after a short absence, the female returned and in a quick, purposeful manner oviposited in the middle of a developing flower; thereafter it flew away immediately and was not seen again. Unfortunately the egg did not adhere and was seen to fall out of the flower, but examination of other flowers revealed another egg and numerous larvae. The latter feed on the fresh flowers and developing seedpods almost throughout their life, although some were seen to eat young leaves during the 4th and 5th instars. The oviposition procedure suggests how this species may have derived a special advantage through utilising a new niche on a foodplant, which may also be occupied by its relatives in the genera *Byblia* and *Eurytela*, both of which occur in the same gardens.

Colour slides were obtained of the life cycle.

OVUM

The egg is very pale green and is difficult to distinguish from the plant tissue with the naked eye. It is about 0.8 mm high and 0.6mm in diameter. It has longitudinal ribs, but unlike *Byblia*, *Eurytela* and *Ariadne*, no spines. The egg hatches in about five days.

LARVA.

Instar sizes are approximately: 1st 1-2 mm, 2nd 5-7 mm, 3rd 10-15mm, 4th about 20 mm and 5th 22 mm. The ground colour of the larva is light green, with a black head and two pronounced

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spiny cephalic horns, which are always black. In the first three instars, there are brown patches or bands on segments 2 and 3, 6 and 7, and 10, surmounted by black spines; some of the other spines are also black. In the last two instars, corresponding to the period when the larvae may emerge from the seedpods to eat young leaves, the brown and black pigments largely disappear (except on the head), and at most the tips of the spines are black. The first segment has three short greenish spines on either side of the thin dark dorsal stripe, without any branching thorns. Segments 2 and 3 also have three spines on each side, black in the early instars, and branching into about five sharp thorns. Segments 4-9 have similar spines and thorns, but four sets on each side, coloured green or black according to the segment as described above. Segments 10 and 11 have a thorned spine in the middle on the dorsal line, black in the early instars, and three thorned spines on each side. The 12th segment has only two thorned spines, always green. The amount of brown varies from larva to larva, even in the early stages. The larval stage lasts about 14 days.

#### PUPA

The pupa is 15mm long, pale green with a pale reddish ventral stripe on the abdomen. The back of the thorax is slightly lighter than the sides and the abdomen. There is an overall light pink, even brownish suffusion. The head is bifid. Attachment is by the cremastral hooks. The pupal stage lasts 5-6 days.

#### DISCUSSION

The larva is almost identical to that described by Aurivillius for *Neptidopsis ophione vellea* and is characteristic of the Tribe *Biblini*. The egg lacks the spines common to the other genera, but possibly these would confer no advantage inside the head of a flower. The pupa is closer in appearance to *Byblia* than *Eurytela*, not having the latter's winged sides.

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VAN SON, G. 1979. *The Butterflies of Southern Africa*, Part IV *Nymphalidae: Nymphalinae*, Transvaal Museum, Pretoria.

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TROX SABULOSUS L. (COL.): A NEW COUNTY RECORD IN GLAMORGAN. — 1982 was a good year for dead sheep in the S. Wales mountains following heavy winter snow. In a remote and tiny valley where dead sheep are not removed, to the N.E. of Gilfach Goch (of 'How Green was my Valley' fame), Mid-Glamorgan, (SS 97391), I discovered *Trox sabulosus* under a dried sheep carcass on July 24th. It was covered in dirt like a ball of dung. No previous record of this species in Glamorgan is known to the National Museum of Wales. In spite of investigating several other carcasses and setting traps, no further specimens were discovered. — D. R. COPESTAKE, 5 High St., Gilfach Goch, Porth, Mid-Glam. CF39 8SS

A CHECK-LIST OF BREEDING BRITISH MOTHS  
(MACROLEPIDOPTERA)

By C. I. RUTHERFORD\*

*(Concluded from page 64)***Geometridae** – Archiearinae (B. & F. p. 79)

R Archiearis parthenias, A. notha . . . . . 2

**Geometridae** – Oenochrominae (B. & F. p. 79)

R Alsophila aescularia . . . . . 1

**Geometridae** – Geometrinae (B. & F. pp. 79-80)

R Aplasta ononaria, Pseudoterpna pruinata, Geometra papilionaria, Comibaena bajularia, Thetidia smaragdaria, Hemithea aestivaria, Chlorissa viridata, Thaleria fimbrialis, Hemistola chrysoprasaria, Jodis lactearia 10

**Geometridae** – Sterrhinae (B. & F. pp. 80-82)

R Cyclophora pendularia, C. annulata, C. albipunctata, C. porata, C. punctaria, C. linearia . . . . . 6

TR or SM C. puppillaria

R Timandra griseata, Scopula nigropunctata, S. ornata, S. rubiginata, S. marginepunctata, S. imitaria, S. emutaria, S. immutata, S. floslactata, S. ternata . . . . 10

ER S. immorata (? date)

R Idaea ochrata, I. muricata, I. vulpinaria, I. sylvestraria, I. biselata, I. dilutaria, I. fuscovenosa, I. humiliata, I. seriata, I. dimidiata, I. subsericeata, I. contiguaria, I. trigeminata, I. emaginata, I. aversata, I. degeneraria, I. straminata . . . . . 17

OM I. serpentata, I. inquinata

FM Rhodometra sacraia

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**Geometridae** – Larentiinae (B. & F. pp. 82-94)

ER Lythria purpuraria (1861)

R Mesotype virgata, Orthonama vittata . . . . . 2

\*Longridge, Macclesfield Road, Alderley Edge, Cheshire SK9 7BL.

- FM** *O. obstipata*
- R** *Xanthorhoe biriviata*, *X. designata*, *X. munitata*, *X. spadicearia*, *X. ferrugata*, *X. quadrifasciata*, *X. montanata*, *X. fluctuata*, *Scotopteryx bipunctaria*, *S. chenopodiata*, *S. mucronata*, *S. luridata*, *Catarhoe rubidata*, *C. cuculata*, *Epirrhoe tristata*, *E. alternata*, *E. rivata*, *E. galiata* . . . . . 18
- ER** *Costaconvexa polygrammata* (1880-1908)
- R** *Camptogramma bilineata*, *Entephria flavicinctata*, *E. caesiata*, *Larentia clavaria*, *Anticlea badiata*, *A. derivata*, *Mesoleuca albicillata*, *Pelurga comitata*, *Lampropteryx suffumata*, *L. otregiata*, *Cosmorhoe ocellata* . . . . . 11
- R** *Coenotephria salicata*, *Eulithis prunata*, *E. testata*, *E. populata*, *E. mellinata*, *E. pyraliata*, *Ecliptopera silacea*, *Chloroclysta siterata*, *C. miata*, *C. citrata*, *C. concinnata*, *C. truncata*, *Cidaria fulvata*, *Plemyria rubiginata*, *Thera firmata*, *T. obeliscata*, *T. variata*, *T. cognata*, *T. juniperata*, *Eustroma reticulatum*, *Colostygia olivata*, *C. multistrigaria*, *C. pectinataria*, *Hydriomena furcata*, *H. impluviata*, *H. ruberata* . . . . 26
- R** *Coenocalpe lapidata*, *Horisme vitalbata*, *H. tersata*, *Melanthia procellata*, *Pareulype berberata*, *Spargania luctuata*, *Rheumaptera hastata*, *R. cervinalis*, *R. undulata*, *Triphosa dubitata*, *Philereme vetulata*, *P. transversata*, *Euphyia biangulata*, *E. unangulata*, *Epirrita dilutata*, *E. christyi*, *E. autumnata*, *E. filiagrammaria*, *Operophtera brumata*, *O. fagata* . . . . . 20
- R** *Perizoma taeniatum*, *P. affinitatum*, *P. alchemillata*, *P. bifaciata*, *P. minorata*, *P. blandiata*, *P. albulata*, *P. flavofasciata*, *P. didymata*, *P. sagittata* . . . . . 10
- R** *Eupithecia tenuiata*, *E. inturbata*, *E. haworthiata*, *E. plumbeolata*, *E. abietaria*, *E. linariata*, *E. pulchellata*, *E. irriguata*, *E. exiguata*, *E. insigniata*, *E. valerianata*, *E. pygmaeata*, *E. venosata*, *E. egenaria*, *E. centaureata*, *E. trisignaria*, *E. intricata*, *E. satyrata*, *E. absinthiata*, *E. goossensiata*, *E. assimilata*, *E. expallidata*, *E. vulgata*, *E. tripunctaria*, *E. denotata*, *E. subfuscata*, *E. icterata*, *E. succenturiata*, *E. subumbrata*, *E. millefoliata*, *E. simpliciatia*, *E. distinctaria*, *E. indigata*, *E. pimpinellata*, *E. nanata*, *E. extensaria*, *E. fraxinata*, *E. virgaureata*, *E. abbreviata*, *E. dodeoneata*, *E. pusillata*, *E. phoeniceata*, *E. lariciata*, *E. tantillaria* . . . . . 44
- R** *Chloroclystis v-ata*, *C. chloerata*, *C. rectangulata*, *C. debilitata*, *Gymnoscelis rufifasciata*, *Anticollix*

sparsata, *Chesias legatella*, *C. rufata*, *Carsia sororiata* . . . . . 9

**R** *Aplocera plagiata*, *A. efformata*, *Odezia atrata*, *Lithostege griseata*, *Discoloxia blomeri*, *Venusia cambrica*, *Euchoeca nebulata*, *Asthena albulata*, *Hydrelia flammeolaria*, *H. sylvata*, *Minoa murinata*, *Lobophora halterata*, *Trichopteryx polycommata*, *T. carpinata*, *Pterapherapteryx sexalata*, *Acasis viretata* . . . . . 16

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**Geometridae – Ennominae (B. & F. pp. 94-101)**

**R** *Abraxas grossulariata*, *A. sylvata*, *Lomaspilis marginata*, *Ligdia adustata*, *Semiothisa notata*, *S. alternaria*, *S. liturata*, *S. clathrata*, *S. carbonaria*, *S. brunneata*, *S. wauaria* . . . . . 11

**ER** *Isturgia limbaria* (? date)

**R** *Cepphis advenaria*, *Petrophora chlorosata*, *Plagodis pulveraria*, *P. dolabraria*, *Pachycnemia hippocastanaria*, *Opisthograptis luteolata*, *Epione repandaria*, *E. paralellaria*, *Pseudopanthera macularia*, *Apeira syringaria*, *Ennomos autumnaria*, *E. quercinaria*, *E. alniaria*, *E. fuscantaria*, *E. erosaria*, *Selenia dentaria*, *S. lunularia*, *S. tetralunaria*, *Odontopera bidentata*, *Crocalis elinguaris*, *Ourapteryx sambucaria*, *Colotois pennaria*, *Angerona prunaria* . . . . . 23

**R** *Apocheima hispidaria*, *A. pilosaria*, *Lycia hirtaria*, *L. zonaria*, *L. lapponaria*, *Biston strataria*, *B. betularia*, *Agriopsis leucophaearia*, *A. aurantiaria*, *A. marginaria*, *Erannis defoliaria*, *Menophra abruptaria*, *Peribatodes rhomboidaria*, *Selidosema brunnearia*, *Cleora cinctaria*, *Deileptenia ribeata*, *Alcis repandata*, *A. jubata*, *Boarmia roboraria*, *Serraca punctinalis*, *Cleorodes lichenaria* . . . . . 21

**ER** *Fagivorina arenaria* (1872)

**R** *Ectropis bistortata*, *E. crepuscularia*, *A. consonaria*, *E. extersaria*, *Aethalura punctulata*, *Ematurga atomaria*, *Bupalus piniaria*, *Cabera pusaria*, *C. exanthemata*, *Lomographa bimaculata*, *L. temerata*, *Aleucis distinctata*, *Theria primaria*, *Campaea margaritata*, *Hylaea fasciaria*, *Gnophos obfuscatus*, *G. obscuratus*, *Psodos coracina*, *Siona lineata*, *Aspitates gilvaria*, *A. ochrearia*, *Dyscia fagaria*, *Perconia strigillaria* . . . . . 23

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## Geometridae total 280 species

This list thus gives a total of 691 (99 + 312 + 280) species of macrolepidoptera as defined by the generally accepted classification in use today. However, rightly or wrongly, ever since South's original publication those of us who concentrate on the macrolepidoptera have almost invariably included five other families in their sphere of activity and for this reason these families are treated in the same way.

Families of the Microlepidoptera which have over the years been traditionally included in collections of Macrolepidoptera.

**Zygaenidae** (B. & F. pp. 7-9)

R	Adscita statices, A. geryon, A. globulariae, Zygaena exulans, Z. loti, Z. viciae, Z. filipendulae, Z. trifolii, Z. lonicerae, Z. purpuralis . . . . .	10
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**Limacodidae** (B. & F. p. 9)

R	Apoda limacodes, Heterogenea asella . . . . .	2
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**Cossidae** (B. & F. p. 7)

R	Phragmataecia castaneae, Zeuzera pyrina, Cossus cossus . . . . .	3
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**Sesiidae** (B. & F. p. 18)

R	Sesia apiformis, S. bembeciformis, Synanthedon tipuliformis, S. vespiformis, S. spheciformis, S. scoliaeformis, S. flaviventris, S. anthraciniformis, S. myopaeformis, S. formicaeformis, S. culiciformis, Bembecia scopigera, B. muscaeformis, B. chrysidiformis . . . . .	14
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ER	Paranthrene tabaniformis (1909)	
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**Hepialidae** (B. & F. p. 2)

R	Hepialus humuli, H. sylvina, H. hecta, H. lupulinus, H. fusconebulosa . . . . .	5
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It would therefore appear that there are 725 species generally accepted macrolepidoptera currently resident in some part of the British Isles.

## A MODERN REVIEW OF THE DEMISE OF *APORIA CRATAEGI* L.: THE BLACK-VEINED WHITE

By COLIN PRATT\*

(Continued from page 52)

### INTRODUCTIONS AND BREEDING

Experts disagree as to whether or not the butterfly was successfully introduced into Kent during the 1880s, the native insect having been thought by some to have just previously died out; Tutt (1896) and Allan (*loc. cit.*) thought our butterfly extinct since about 1880, whilst Frohawk (1914), Bretherton (1951) and other modern analysts believe it survived naturally as a breeding species until around 1925. The comparatively low September rainfall after 1887 supports the more recent view.

According to Merrifield (1893), a Mr. Edmonds of Windsor had for some years imported the species and allowed numbers to escape, but they had never "taken" until offspring were noticed flying in 1892; the insect successfully colonised the spot until at least the larval stage of spring 1894. September 1891 was roughly average for rainfall, the following season enjoyed 137% of average, and the following two seasons less than usual. Tutt (1896b) overwintered some German larvae during the 1895/96 winter and was "astonished . . . at the great death rate"; only 5-10% survived and the relevant September was a very dry one. In 1903, Frohawk (*loc. cit.*) tried to breed the species from locally caught examples, but all died "during hibernation"; national rainfall that September averaged 151% of normal, although this did not prevent a local abundance in Kent. He repeated the experiment the following season, with some success, when rainfall was less than average. More modernly, between 1930 and 1940 according to Newman (1954), the insect was for a time successfully re-established near Sandwich with continental stock; unfortunately more precise information is lacking. In the autumn of 1948 and the spring of the following year Newman tried again, with continental larvae being released in Winston Churchill's garden at Chartwell, Kent. This resulted in complete failure "after the hungry tits had been on their rounds in the early morning", as they apparently ate all the pupae (Newman, *loc. cit.*). More than half a century earlier, Tutt (1896a) mentioned that "larvae have pupated well in some of these instances we know, but . . . the specimens appear to have utterly failed to establish themselves", with a few odd exceptions. More recently, Newman (1965) again reported that the butterfly was breeding in east Kent, in 1964; little further information is available on the occurrence although he did note that other personal attempts at

\*"Oleander", 5 View Road, Peacehaven, Newhaven, Sussex.

re-introduction with German larvae on the North Downs of Kent had been unsuccessful owing to birds eating both larvae and pupae.

In modern times, P. W. Cribb and A. Waters have successfully bred the species in this country from continental stock over several generations, but only by overwintering the larvae under the drier artificial conditions within an unheated greenhouse. Large losses were incurred when larvae were sleeved outside, although this should have eliminated most predators. Mortalities occurred mainly during spring and were thought to be due to fungal infection; significantly, deaths were not avoided when larvae originally placed outside were withdrawn to greenhouse conditions at this time. Further small losses were also experienced owing to the parasite *Apanteles glomeratus*, to predatory insects and to birds eating dispersed larvae. Hundreds of specimens were released on Holmwood Common, Surrey in the mid 1970s but none could be seen during the following season. This recent work strongly supports the view that conditions in England are still not suitable for continental examples of the black-veined white. In Scotland, however, success has been achieved with a colony over the last few years. In 1974 stock from a few hundred Spanish ova began to be reared outside in Fife by Elliott (1977). The next season saw about 200 butterflies successfully emerge and the following year about 100. This artificially assisted introduction has continued, with reinforcements from Swiss/Italian border stock in 1978, more or less successfully until the present time (Elliott, 1982). The colony was shielded from insectivorous birds in 1981 and a 65% survival rate was thereby attained. Over these years a few of the noted losses were due to *Apanteles glomeratus* but adult butterflies were "very often heavily persecuted by local birds . . . a blackbird, a song-thrush and a great tit".

The evidence presented overall by the general lack of success of foreign introductions and some artificial native rearing is inconsistent with a single causal factor; in the absence of relevant, and intimate, environmental and other recorded data made when our native butterfly was reared in the distant past, any inferences drawn from success or failure are inconclusive, except to say that several elements apparently played a part.

Ford (*loc. cit.*) thought that the black-veined white and some other native species could "only survive by adapting themselves closely to the environment which they find in certain places which chance to suit them particularly well". This could indicate that in addition to the problems already being encountered by our own *A. crataegi*, foreign imports endured an increased difficulty in finding, and then adapting to, a favourable environment in our country.

### AVIAN PREDATION

As was mentioned earlier, birds were sometimes blamed for the disappearance of the butterfly in question; Dale (1887) thought the

decline "due to the great increase of small birds" after their protection. Allan (*loc. cit.*) said that there "was undoubtedly a rise in the population of many species of our smaller birds during the 19th century", which was precipitated by the decline of raptorial birds brought about by increased efficiency in game preservation, in turn made possible by several technical advances in the shot-gun: there was no such change on the Continent. The periods of abundance of the black-veined white do not correlate with those times when severe winters were known to have caused heavy mortality amongst insectivorous birds, although it may be of importance that sparrows did not substantially decrease in numbers during the severe winters of 1878 to 1881 (Gurney & Russell, 1885). Nevertheless, Kollar (*loc. cit.*), writing of larvae, stated that "small birds, particularly the titmice, devour them soon after they are hatched, as well as in the following spring . . . . So eager are the birds in the pursuit of these caterpillars, that they break into their nests late in the autumn" in central European colonies. Martelli (*loc. cit.*) makes a similar assertion. More recently in this country, Newman (1965) noted of several introductions that "larvae steadily diminished in numbers; so obviously some birds, probably tits, were taking them. The same thing happened to the chrysalids". He also noted that of 300 or so larvae he had put on a hedge, only three survived to become butterflies owing to predations by birds and parasites.

The Tit family is probably foremost among birds for initiating new and adaptive feeding habits; whilst there is no evidence that the group changed its predatory habits towards *A. crataegi* larvae during the 19th century (although it would probably have gone unnoticed), "it is certainly true that the tits may take relatively large proportions of their prey when the prey is not exceptionally abundant" (Perrins, 1979). The long-tailed tit is almost wholly insectivorous and during autumn feeds primarily among hawthorn twigs, spending more than 30% of its time around this feeding site; similarly the great tit spends up to 19% of its time on hawthorn during the months of September and May (Perrins, *loc. cit.*). In illustration of their efficiency as predators, several other species of tit prey on the early stages of the tiny eucosmid moth *Cydia conicolana* Heyl. and can eat more than half of the available pupae (Gibb, 1958). In Germany at least, titmice attacked larvae of *A. crataegi* during the cold season and locally accounted for between 70% and 80% (Stellwaag, 1924).

Martelli (*loc. cit.*), reporting from Italy during the late 1920s, noted that sparrows ate many black-veined white pupae and that unclassified birds were also recorded as taking up to 4% of larvae in Russia. As regards the house sparrow in this country, although the bird could be found all over the British Isles by the end of the 17th century (this not having been the case previously), the period up to 1800 was one of consolidation (Summers-Smith, 1963). An extension of numbered range was noted here after that time, following the increase in human population and wheat production, and coincidentally with the decline of *A. crataegi*; locally, by the 1880s a position had been reached such that "sixpence per dozen

heads of sparrows (until the end of March) will be given to anyone producing them" (Gurney & Russell, *loc. cit.*).

In fruit-growing areas "the sparrow does a fair proportion of good" and in "exceptional cases large numbers of insect pests may be taken by sparrows to feed their young", up to 40% of a nestling's diet being lepidopterous larvae (Summers-Smith, *loc. cit.*). Attacks by birds on adult white butterflies (*Pieris* spp.) have been frequently recorded; Collenette (1935) listed 26 published records of the house sparrow attempting to catch such insects, the sparrow being the foremost bird recorded for assaults on butterflies in this country.

So although there is no proof that birds were solely responsible for the decline of *A. crataegi*, there is plain evidence for their involvement at a significant level.

## DISEASES

The mode of the butterfly's disappearance, both locally and nationally, could be described as typical of a disease epidemic and Franz (1971), writing from Germany, considered *A. crataegi* to be a species which undergoes "more or less cyclic gradations regularly terminated by epizootics". Martelli (*loc. cit.*) discusses in detail the causes of death in the black-veined white in Italy during the late 1920s. Three diseases were major mortality factors – the virus-associated "la flaccidezza" and "giallume", and the protozoan infection "pebrin". However, there was no report of diseased larvae being found in Britain at the time of the insect's decline, despite the fact that diseases are the largest single cause of death in insects in general and their significance had been known since the early 19th century.

### *Fungi*

Leatherdale (1958) listed 33 species of fungi which were known to attack lepidoptera in Britain and Madelin (1968) noted that "fungous diseases of insects are both common and widespread, and sometimes are severe enough almost to eliminate a population of insects in a given habitat"; it is "for many sorts of insect the major mortality factor" although this is "usually only one of a number of factors limiting their numbers". The scale of destruction was considerable in Finland, for example, during the autumns of 1928, 1936 and 1939, when *P. brassicae* L. larvae were attacked by the fungus *Entomophthora sphaerosperma* F., and during "many an autumn" this was the most important cause of disease (Kanervo, 1946).

Past objections to the theory that disease caused the disappearance of the black-veined white mainly rested on how such a disease could affect many isolated colonies at about the same time. This objection was first overcome by Steinhaus (1954), who wrote that "spores of certain entomogenous fungi may be continuously present in large numbers in fields ready to attack susceptible insect hosts, but these spores may remain inactive until appropriate con-

ditions of temperature and humidity prevail"; these fungi would then "spring up abundantly and simultaneously in widely separated localities" with "catastrophic rapidity and thoroughness". Tanada (1964), Franz (*loc. cit.*) and Christensen (1972) concurred with this view. In many colonies the decline of *A. crataegi* was nothing if not quick and absolute (Jenner Weir, 1887).

Most insect diseases are affected by humidity and temperature, but none is more dependent on the former than fungi. "Most entomogenous fungi attack their host through the integument, requiring adequate external humidity or moisture to carry out the process. Most bacteria, viruses and protozoa, on the other hand, are ingested by the insect, and their moisture requirements are satisfied by the provisions of the insect's alimentary tract or body cavity" (Steinhaus, *loc. cit.*). This mode of invasion "imposes rather rigid tolerances in the environmental conditions which permit disease induction" (Roberts & Yendol, 1971), these limits being more strict than the requirements of other diseases. Young and, particularly, gregarious larvae are more prone to disease, as after initial infection its spread is largely dependent on host-density; in addition, hibernating caterpillars are especially at risk because of the accompanying seasonal moisture. Roberts & Yendol (*loc. cit.*) thought that fungal epizootics were "usually associated with periods of high humidity, particularly rainy periods". Other foreign ecologists were so certain of the connection that Steinhaus (*loc. cit.*) wrote, "The actual amount of rainfall has been used in prognosticating the probable success or failure of entomogenous fungi in naturally controlling certain insects". Furthermore, in some countries special agricultural techniques have been used to help keep a moist environment for the induction of fungal epizootics (Franz, *loc. cit.*); and Wilding (1981) mentioned that one particular insect species was only infected after monthly rainfall exceeded 20mm. Ulyett (1947) reported that a fungus attacked larvae of *Plutella xylostella* L. in South Africa when rain occurred, yielding high mortality rates; and Barrett (1882) had already postulated that as regards British lepidopterous larvae and pupae "mild winters act *directly*. . . . encouraging the growth of mould, which we know attacks them as soon as, from excess of rain or humidity, they become sickly". Despite the absence of reports of fungal disease within our butterfly at the time of its disappearances, modern experience with continental stock has apparently shown the presence of such a pathogen. Moreover, Martelli (*loc. cit.*) recorded that some *A. crataegi* were attacked by a fungus in Italy in 1928, although this was in the pupal stage. A hypothesis of a fungal epizootic being mainly responsible for the extinction of *A. crataegi* in this country dovetails into most of the known facts and thus answers almost every question.

### Viruses

Heath (*loc. cit.*) suggested that the numbers of the black-veined white might have been heavily reduced by a virus disease. Although there is no direct evidence from this country, Hughes (1957) listed a bibliography of papers concerning insects which had been recorded

as suffering from virus diseases anywhere in the world and such infections in *A. crataegi* have been noted in Italy, and in Germany from 1921 to 1924 (Steinhaus, 1967). Kreig & Lagenbuch (1956) mentioned that a polyhedral virus had been described many times within German *A. crataegi* larvae. High humidities, such as those brought about by rainy Septembers, could assist a catastrophic virus attack (Franz, *loc. cit.*). Steinhaus (1967) confirmed that certain virus diseases caused autumnal epizootics in America. However, the environmental conditions under which such outbreaks occur are not *essentially* associated with rainfall, as was mentioned under the previous heading, although the possibility remains.

(To be continued)

## Notes and Observations

THE PAPERS OF J. O. WESTWOOD: OXFORD UNIVERSITY v. THE SMITHSONIAN INSTITUTION. – A contribution to the *Record* seldom causes an international controversy, but this writer's account of the collection of John O. Westwood's papers in the Smithsonian Institution Archives, Washington, D. C. (91: 245-246) achieved that dubious distinction. The affair is of concern because of the disturbing results of negotiations between the Smithsonian and Oxford University.

Although the Smithsonian's collection of Westwood's correspondence and manuscripts had been properly acquired in the nineteenth century, Oxford officials strenuously claimed it after noticing the 1979 *Record* account, arguing that the University was the holder of Westwood's papers (*recte*, the majority of them). The request appears to have been based on insufficient knowledge of the nature of archival collections and the historical realities of their distribution. Scholars and informed archivists know well that papers of individuals have often been divided and scattered through historical circumstance, accumulating in several or more repositories. Yet Oxford pressed its curious demands until the Smithsonian relented and gave up the collection. The ceremony of transfer was described in the *Oxford Times* (21 May 1982, p. 1).

One can understand the Smithsonian's desire to keep the peace between major institutions, but it and the University must share the blame for establishing such an unfortunate precedent. It is perhaps true that scholars might benefit by consulting both collections under one roof, but such convenience was not the issue in this debate. Apparently Oxford officials believed that another repository should 'stand and deliver' under the circumstances. But why should repository A give up its manuscripts to repository B when B has a larger collection of similar papers and demands A's holdings? Such a confrontation might have been more appropriate in the American Wild West or in the Essex countryside of Dick Turpin's time.

If small institutional collections of personal papers are to be claimed and acquired by the present holders of larger portions, the result will be unfortunate, to say the least. Many of us depend upon

archival stability and integrity when citing locations of manuscript materials. We hope that other repositories will not follow Oxford's unfortunate example and the Smithsonian's response. — R. S. WILKINSON, 228 Ninth Street, N. E., Washington, D. C. 20002, U.S.A.

SOME RECORDS OF NANOPHYTES MARMORATUS (GOEZE)  
(COL., APIONIDAE) FROM WEST CUMBRIA. *Nanophyes*

*marmoratus* (Goeze) has previously been recorded from Cumbria and vice county 70, Cumberland on a few occasions, and W. F. Davidson in his list of local and uncommon Coleoptera from Cumberland and Westmorland, (1961, *Entomologist's mon. Mag.*, 97:21) gives three localities, Thurstonfield, (NY35), Great Orton and Little Orton, (NY35). While F. H. Day, (1923, *Trans. Carlisle Nat. Hist. Soc.*, 3: 103) cites one record of Fowler's from Eskdale, (SD19); this latter record originating in the *Entomologist's mon. Mag.*, 48: (1912):287. Apart from these records I have been unable to locate any other published ones for the weevil from the county, especially the western region. During the past five years or so of collecting I have found this decorative little beetle in a number of localities within West Cumbria and a selection of my records are as follows, Nr. Middlebank Farm, Beckermeth, NY01.05, 4.viii.79; Gaterigghow Bridge, Gosforth, NY10.04, 21.vii.79; Nr. Annaside, Bootle, SD08.87, 29.vii.78; Williamsons Moss, SD08.91, 12.vi.82; Hall Carleton Farm, (by roadside), SD07.97, 25.vi.78; Kirksanton Haws, SD13.79, 5.viii.78 and Stock Bridge near Holmrook, SD13.97, 27.vii.80. On each occasion specimens have been taken by working the main hostplant, *Lythrum salicaria* L. (Purple Loosetrite) and quite often the adult beetles were found in large numbers around the flower heads of individual plants; and some were observed feeding on the leaves where they made small round open holes.

A few brief notes on the biology of *N. marmoratus* are provided by Hoffman, (1958, *Faune De France.*, 62 (*Coleopteres Curculionides*, 3: 1246) who states that the larvae develop inside the flowers of *Lythrum* where they feed on the ovaries. Hoffmann (*loc. cit*) also gives a key to some seventeen varieties of this species which are known to occur in France. — R. W. J. READ, 43 Holly Terrace, Hensingham, Whitehaven, Cumbria, CA28 8RF, 19.xii.82.

HYPERA ARATOR LINNAEUS (COL., CURCULIONIDAE) IN ASSOCIATION WITH BARLEY. — On 10 July, 1980 while sweeping some weedy vegetation along the edge of a barley field at Church Moss near Beckermeth, West Cumbria, (Grid ref. NY01.05) I came across some green weevil larvae and cocoons on a few plants of *Spergularia arvensis* L. (Corn Spurrey) growing in among some stems of barley, *Hordeum* sp. The larvae were apparently feeding on the flowers, and a number of the cocoons had been constructed around the flower heads and on the main stems just below the leaves. Having previously known that *S. arvensis* was a foodplant of the weevil, I assumed that the larvae and cocoons were *Hypera arator* Linnaeus. Identification was later confirmed by rearing some larvae collected at the site through to the adult stage at home. While searching further along the edge of the same field, I noticed that a

few cocoons, similar to those found earlier on the spurrey, were present on some ears of barley growing close by. The cocoons were of a pale yellowish-green, the colour resembling quite closely that of the young developing barley ears, which at this time were predominantly green and had not darkened to the normal golden, pre-harvesting colour. The cocoons had been constructed mainly around the awns, and a few were present lower down the ears above the spiklets. It was observed that each individual cocoon of *H. arator* in a sample of twenty ears of Barley collected from Church Moss had been constructed at between 17mm and 60mm from the top of the spiklet to the awns. The average distance was found to be 43mm. One ear from the above sample contained two cocoons which had been made directly at the apex of the spiklet.

*H. arator* is known to be associated with barley during the late larval period and some notes on this somewhat curious association are given by M. W. Shaw, (1961, *Entomologist's mon. Mag.*, 96: 104), whose observations were carried out at Lonmay, Aberdeenshire during July, 1959. According to the account given by Dr. Shaw, it was suggested that the presence of larvae and pupae on barley and other cereal crops was due to conditions favouring the growth of one of the weevil's hostplants, (in this case spurrey). It may also be caused through a partial failure in the cereal crop due to high acidity in the soil.

Although the report by Dr. Shaw goes some way to explain the association of *H. arator* with *Hordeum* and other cereal crops, the main question of why the larvae should migrate from its normal hostplant to the barley ears in seeking a pupation site still remains unanswered. Therefore this particularly intriguing aspect of larval behaviour requires further explanation and calls for more detailed observations and research. — R. W. J. READ, 43 Holly Terrace, Hensingham, Whitehaven, Cumbria, CA28 8RF, 20.xii.82.

FOODPLANTS OF PLATYPTILIA CALODACTYLA D. & S. (LEP., PTEROPHORIDAE). — The only foodplant given for this species in the literature is goldenrod (*Solidago virgaurea*).

In 1976 a single specimen was taken at mercury vapour on Colne Point Nature Reserve (near St. Osyth in north-east Essex) by Mr. M. Heath, the acting warden. Subsequently the moth was passed to me; I concurred with Mr. Heath's determination but to make trebly sure I obtained confirmation at the British Museum (Natural History).

On 14.vii.1982 Mr. A. J. Dewick took a second Essex example in his famous light-trap near Bradwell-on-Sea. It was identified by the Revd. D. J. L. Agassiz; the specimen is in mint condition and there is no doubt that the determination is correct.

Colne Point and Bradwell-on-Sea are in North Essex (VC 19) and South Essex (VC 18) respectively. They face each other across five miles of open sea at the entrance to the estuary of the R. Colne. Both have shingle spits where terns nest and both extensive salt-marshes. Goldenrod does not grow at either site; it is a scarce plant in Essex and where it does occur it is present only in small quantity. The nearest stand is on Berechurch Common which is eight miles

from Colne Point and ten from Bradwell; the next nearest is at Hockley, fifteen miles from Bradwell and twenty from Colne Point.

An alternative foodplant is probable. In *The smaller moths of Essex*, p.153, I suggested sea-aster (*Aster tripolium*); this comes next to goldenrod in botanical text-books and I still think it the most likely candidate. The star-wort (*Cucullia asteris* D. & S.) and *Coleophora virgaureae* St. feed on both goldenrod and sea-aster. Golden samphire (*Inula crithmoides*) is less likely, since Mr. Dewick knows of only two or three plants in his area. He has suggested ragwort (*Senecio jacobaea*) since the goldenrod pug (*Eupithecia virgaureata* Doubl.) feeds on this as well as on its eponymous host; but this is not essentially a coastal plant. Beirne (*British pyralid and plume moths*, p.109) writes of *P. calodactyla*, "It is very local and has been recorded, mainly from coastal districts, from Cornwall, north Devon, Kent and Lancashire". Goldenrod is sometimes found on cliffs and dunes, but Beirne's statement suggests at least the possibility of a littoral foodplant, though he then proceeds to describe the moth's behaviour in inland wood clearings.

It would be interesting to hear of any other coastal locality for *P. calodactyla* where goldenrod is apparently absent. According to Beirne, there is little evidence of larval feeding and prodigious luck would be needed to find such an elusive species on a plant as locally abundant as sea-aster — A. M. EMMET, Labrey Cottage, Victoria Gardens, Saffron Walden, Essex, CB11 3AF.

**BEMBEZIA CHRYSIDIFORMIS ESPER (LEP.: SESIIDAE).** — Referring to Mr. Allen's Note (*antea* 76) on a Dorset record, I was somewhat puzzled by his statement that this species is practically confined to The Warren, Folkestone. On 3rd June, 1944, while on a buffer depot inspection at Whitstable, Kent, I saw a specimen visiting flowers on a waste patch on the coast there. I was able to pillbox it and the specimen was passed to the British Museum (Natural History) with my collection. — S. N. A. JACOBS, 54 Hayes Lane, Bromley, Kent BR2 9EE.

**PAMMENE OBSCURANA STEPHENS (LEP.: TORTRICIDAE) IN ESSEX.** — On the night of the 7th/8th June 1983, while collecting at m.v. light with Mr. B. Skinner in Epping Forest, I was delighted to take a fresh specimen of this species, which according to Emmet (*The Smaller Moths of Essex*, 126) had not been seen in Essex for at least 80 years. The night was close and humid with hardly a breath of wind, there was no moon, and at 10pm the temperature registered 64° F. which had only dropped two degrees by 2am. — J. M. CHALMERS-HUNT.

**BUTTERFLY BEHAVIOUR — CELTIS, CRATAEGI, SPINI.** — I would just like to put on record various behavioural observations regarding three butterfly species. The first concerns the feeding behaviour of the Nettle-tree butterfly (*Libythea celtis* Laicharting) Europe's only example of a snout butterfly. During the spring of 1982 (early April) in an apple orchard in the Cévennes (near St. Martial, 30440) some 15-20 *L. celtis* had selected just one of the apple trees on which to feed. All the trees were in the stage of leafing up and bursting out of their buds yet the butterflies had

selected only one tree and were moving about fairly rapidly feeding on some secretion or other which was not obvious with the naked eye. This raises the question of whether these hibernators were imbibing sugary solutions for sustenance or whether they were taking up essential ingredients to be used in some physiological process such as pheromone manufacture.

A most memorable feature of a visit to the Cevennes in early June 1981 was the abundance of Black veined whites (*Aporia crataegi* L.). They are normally scarce during Easter and late summer (i.e. April and August) but clearly the period of early June coincides with their peak of flight activity. In one place on the Causse de Blandas (633 m or 2077 feet) near the magnificent Cirque de Navacelles there were so many *A. crataegi* bobbing about that some sort of count was deemed necessary. This was done by turning slowly through 360° while standing in the same place and counting the numbers of butterflies seen up to about 95 metres (or about 317 feet) away. Three revolutions gave counts of 141, 167 and 130 respectively, i.e. about 150 Black veined whites could be seen around one's-self at any one time. There were thousands of acres like this so that the total population of *crataegi* here must lie in the millions. All the time the butterflies were really engaged in courting and seeking out and ovipositing on the sloe *Prunus spinosa* bushes.

Another memorable event was an evening stop at the roadside where there were plenty of scrub Juniper (*Juniperus communis*) bushes up to two metres high. On these were groups of up to five Blue-spot Hairstreaks (*Strymonidia spini* D. & S.) resting head up for the night at the top of the bushes. They seemed to prefer communal resting spots and other butterflies such as the gatekeeper (*Pyronia tithonus* L.) joined them. — JOHN FELTWELL, Marlham, Henley Down, Catsfield, East Sussex, TN33 9BN.

CONCERNING THE FIERY CLEARWING: BEMBEZIA CHRYSIDI-FORMIS ESPER. — Apropos the Notes on this moth by Messrs. A. A. Allen and S. N. A. Jacobs (*antea* 76 and 169). For more than a century the Fiery Clearwing has been found fairly regularly, and sometimes in considerable numbers, on the coast between Folkestone and Dover though nowhere else in Britain now for over 30 years, and then mainly as singletons widely scattered along the south-west, south and south-east coasts and amounting in all to perhaps little more than a dozen examples. Localities whence it has been recorded besides those referred to above are. — SUSSEX: Eastbourne, one vii.1874 (Shearwood, *Entomologist*, 7: 224). HAMPSHIRE: Haslar neighbourhood, one 1851 (Barron, *Zoologist*, 3289); Southsea, bred 1885 (Moncreaff per Pearce, *Entomologist*, 24: 93); Hayling, formerly (A. E. Burras per Fassnidge, *List of Macro-Lepidoptera of Hants. & Isle of Wight* (1924), 36). ESSEX: Between Leigh and Southend, one 23.vi.1851 and several others at different times including one 3.vii.1859, by P. Bouchard (B. Gill per Vaughan, *Essex Nat.*, 3(7-9):127) KENT: Millstrood, one 6.vii.1946 (Harris, *Entomologist*, 81: 127. DEVON: Hartland, late vi. 1950 (Wakely per Stidson, *The Lepidoptera of Devon*, 73). Woola-

combe, one seen 7.ix.1888, but questionably this species (Longstaff, *Ent. mon. Mag.*, 38:28). GLOUCESTERSHIRE: Forest of Dean district (Flint, *Entomologist*, 35: 329). The last two records are considered doubtful. — J. M. CHALMERS-HUNT.

## Current Literature

**The Butterflies of Scandinavia in Nature** by H. J. Henriksen and I. B. Kreutzer. Translated from the original Danish text by Elisabeth Folino. 4to. Published by Skandinavisk Bogforlag, Odense, Denmark, 1982. Price £50.

Of all the butterflies of Europe perhaps least known are those of the Arctic region, and in this fine book many of the gaps in our knowledge of these species have at last been filled. It is also the first comprehensive survey in English of all the butterflies of Scandinavia, as the 121 species occurring in the region are described, and superbly illustrated in 207 pages.

The general format for each butterfly is a page of text opposite a full page of colour photographs. There are a few exceptions to this rule — some of the *Clossiana* and 'Blues' and all the 'Skippers' share space whereas *Parnassius apollo* L. is favoured with two pages of plates and two of text. The plates are composed of between 5 and 12 colour photographs of habitat, living imagines, (usually male and female upperside and underside) and early stages where possible. Some of the high Arctic species of *Clossiana*, *Oeneis* and *Pyrgus*, still have incompletely known life histories and the illustrative gaps are mainly among these genera. The imagines are well photographed and are, as the title of the book suggests, living examples in the wild. Variation and subspeciation are also included among these plates. Some butterflies are represented by up to 11 individual specimens. One sub-species omitted from the plates however, is the interesting ssp. *norvegica* Aurivillius of *Mellicta athalia*. This seems a pity, as it has one of the most distinctive wing patterns of all the forms of *athalia*, and is confined to northern montane Scandinavia.

The attractive photographs of habitat are relevantly presented in opposition to the butterflies they harbour. Usually only one locality view is given per species; in some instances two are included, usually where different biotopes are involved. All these seem appropriate to the given species and with one or two minor exceptions are in pinpoint focus and reproduced in fine natural colour.

The distribution maps are inserted in the top right of the text page and represent current range only. The occurrence of *Colias palaeno* in Denmark is not registered on the relevant map but that is the only error that I can detect among these.

The original Danish text has been translated into excellent grammatical English with a distinctive style. Classification is in the old style order starting with the Papilionidae and Pieridae, and ending with the Hesperidae.

Scientific name, English name and type locality, are given at the top and the text page is divided into headings of description; geographic variation; individual variation; early development; time of appearance; habitat; habits and distribution. The sections on early development and habits are especially interesting and reveal obvious first hand knowledge. Much new information is included: there are meticulous accounts for example of diurnal variation of flight pattern; preferred nectar-sources are listed and accounts of the biology of some of the rarer arctic butterflies are provided for the first time.

The book is well produced in green book-cloth and printed on glossy paper. The reviewer is hard put to avoid superlatives. The text is accurate, plates are excellent, and in general it is a pleasure to use. The authors, translator, photographers and publishers all deserve the highest praise for producing one of the finest books on the butterflies of a European region to appear in many years. — C. J. LUCKENS.

**The Insects** by R. F. Chapman. Third edition. xiv + 919 pp. numerous text figs. 245 x 190 mm. Hodder & Stoughton, 1982. £19.50 (paperback).

It is now ten years since the second edition of Dr. Chapman's book, and much of the original material has been revised and extended. It is a pity that the book is only available as a hefty (but sturdy) paperback. Perhaps this is the only way to keep costs within reasonable limits.

This is not a taxonomic work, nor a textbook of entomology in the 'classical' style, but a book which emphasises the interdependence of structure and function. The text is divided into six major sections, these being: the head; the thorax; the abdomen; the cuticle; the nervous and sensory systems, and the circulatory and endocrine systems. Each section is supported by chapters which develop the theme of the section. For example the "Head" leads to chapters on the structure of the head and its appendages, feeding, the alimentary canal, digestion and absorption, nutrition, fat body and general metabolism, and colour, whereas the "Abdomen" contains chapters on general structure, reproductive systems, mating behaviour, oviposition, embryology, unusual types of development, hatching, post-embryonic development and metamorphosis. Other sections are covered in a similar fashion, and each chapter concludes with a bibliography.

This interesting approach to entomology is coupled with the provision of numerous, clear text illustrations and a highly readable narrative. It is refreshing to see a sensible integration of morphology, physiology and biochemistry in a single volume. There are, of course, misprints and the odd biochemical "irregularity" but on balance this is a first class book — well written, well organised and informative. — PAUL SOKOLOFF.



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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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# THE ENTOMOLOGIST'S RECORD

## AND JOURNAL OF VARIATION

*Edited by J. M. CHALMERS-HUNT, F.R.E.S.*

*with the assistance of*

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PLATE II



*Aloeides maluti* sp. nov.

Fig. 1. Male holotype (upperside), Rafoelatsane, Lesotho, V. L. Pringle, 17.i. 1976. Fig. 2. Idem (underside). Fig. 3. Female allotype (upperside), Rafoelatsane, Lesotho, E. L. Pringle, 17.i.1976. Fig. 4. Idem (underside). Figures approx. 2x natural size. Photograph reproduced by Unifoto (Pty) Ltd., Cape Town.

A NEW LYCAENID BUTTERFLY FROM LESOTHO,  
OF THE GENUS *ALOEIDES* HUEBNER

No. 1

By E. L. PRINGLE, B. A. (Natal), LL.B. (U.C.T.)\*

*Aloeides maluti* spec. nov.

This striking insect was found in the heart of the Lesotho highlands. In appearance, it combines the characteristics of *Aloeides pierus* (Cramer) and *Aloeides trimeni* Tite & Dickson, coming closer to the former on the upperside, and to the latter on the underside.

*Male (Upperside).*

*Forewing.* Heavy black borders extend along the distal portion of the wing, extending inward as far as a third of the way along vein 1, and a quarter of the way along veins 3, 4 & 5, and their corresponding areas; and, with great inward expansion of the black area subapically and below the costal margin. The remaining inner area of the wing exhibits a dusky orange colouration. There is, however, a marked degree of variation among individual specimens in some of which the wing is almost entirely suffused with black, leaving a very reduced orange area basally. Veins are all dusted with black, and the cilia are faintly chequered. In comparison with *pierus*, *maluti* males show a greater extent of orange on both fore- and hind-wing uppersides, with none of the specimens examined showing the extreme reduction of the orange area on these wings evidenced by many specimens of *pierus*. Further, the orange colouration in all specimens of *Al. maluti* is more dusky in appearance than in *pierus*. Another feature is that, in all examples studied, the males of *pierus* show blackish markings at the base of the forewing: in this species, however, the males always show dusky orange at the base of this wing.

*Hindwing.* As in the forewing, all veins are dusted with black, and the cilia are faintly chequered. Black lunules are evident along the distal margin, and the apical patch is well-developed, if variable. In some of the specimens examined, the apical patch extends all the way through area 4, up to vein 4, and inwards all the way to the base. In the majority of specimens examined, however, the apical patch extends only as far as vein 5, and inwards only half-way along vein 7. The remainder of the hindwing bears the same dusky orange markings evidenced in the forewing.

*Female (Upperside).*

*Forewing.* The wings are more rounded than in the males, and the dusky orange markings are more extensive. The broad black band along the distal margin does not reach further inwards than one-third of the way along veins 1 and 2, and approximately a quarter of the way along veins 3, 4, 5 and 6. In all specimens examined, the apical patch is bisected by two, and in some cases three, orange dots extending towards the costa. Veins are dusted with black, and the cilia is lightly chequered.

*Hindwing.* Similar to the male, except that the apical patch is much reduced. As in the male, the female shows a much greater extent of orange on the upperside of the wings than does *pierus*, and the orange basic colour is more dusky in appearance.

*Male and female (Underside).*

*Forewing.* The basic colour is dusky orange. Dull brown markings extend into the apical area, and down, or close to, the costal and distal margins. The spots of the submarginal series are placed well within the orange portion of the wing in areas 1b, 2, 3 and 4 and beyond these areas, above the orange

\*Huntly Glen, Bedford, 5780, South Africa.

field. These spots are, as in *pierus* but not as in *trimeni*, black, and are not touched inwardly with white. Otherwise, the spotting is fairly typical of the genus *Aloeides*, consisting of well-defined silver spots edged with black rings, and arranged in an irregular postmedian series of five spots, together with a discoidal spot, median cell-spot and a basal cell-spot.

*Hindwing.* Basic colour dark greyish-brown, showing in some cases a very faint light suffusion towards the distal margin. Like *trimeni*, and unlike *pierus*, the hindwing colouration is extremely uniform, showing none of the dappled maroon or dappled sandy colours exhibited by *pierus*. Unlike both species, *maluti* shows no tendency towards any variation of the basic colour of this wing, and none of the specimens examined show any trace of the maroon basic colour often seen in both *trimeni* and *pierus*. There are a number of large, round, dull silver spots in this wing: these spots are not elongated as in *pierus*, but are consistently large and rounded. All specimens exhibit three, and in some cases four, sub-basal spots, as well as a median costal spot. The remaining spotting is highly irregular, and varies considerably between specimens. In at least one specimen examined, the median series of spots is arranged in a continuous band, running all the way from the costal to the inner margins. The majority of specimens examined, however, exhibit only three spots lying adjacent to one another in areas 6 and 7, and a further three suffused spots in areas 1c, 2 and 3. This spotting does not, therefore, show the uniform and characteristic pattern seen in *pierus*, which in all cases exhibits a distinct break in the median series of spots at vein 4. Similarly, since the median series in *trimeni* also shows a regular and consistent pattern, the species can in this respect also be distinguished from *trimeni*. Further, the underside spots are much larger and fewer in number than in *trimeni*, and the black rings encircling these spots are markedly more pronounced.

This species was discovered by the author and his father on an expedition to Lesotho in January, 1976. It was found near the village of Rafoelatsane, flying on the summits and slopes of low-lying hills and ridges. Specimens were encountered singly, and the species, though widespread, was found to be uncommon. The species was again encountered on two subsequent trips to the area in February, 1977 and January 1979, and on both of these expeditions was once more observed to be unusually scarce. This may in part be as a result of the heavy erosion and destruction of the environment sustained by the low-lying sandstone ridges upon which it flies – caused in turn by the over-population and over-grazing characteristic of most areas of Lesotho.

The species is named after the lofty and spectacular range of mountains which traverses the western areas of Lesotho.

I would like to place on record my sincere thanks to Mr. C. G. C. Dickson for the great assistance which he has rendered me in preparing this paper.

HOLOTYPE: Rafoelatsane, Lesotho 17-1-1976 (E. L. Pringle)

ALLOTYPE: Rafoelatsane, Lesotho 17-1-1976 (E. L. Pringle)

PARATYPES: Rafoelatsane, Lesotho 1 ♂ 1 ♀ 17-1-1976 (V. L. Pringle); 2 ♀ 17-1-1976 (E.L.P.); 1 ♀ 2-2-1977 (V.L.P.); 1 ♂ 2-2-1977 (V.L.P.); 1 ♂ 1 ♀ 20-1-1979 (V.L.P.); 1 ♀ 5-2-1977 (E.L.P.); 3 ♂ 2 ♀ 22-1-1979 (E.L.P.); 3 ♂ 1 ♀ 22-1-1979 (V.L.P.).

Two paratypes will in due course be presented to the British Museum.

## A REVIEW OF BRITISH BUTTERFLIES IN 1982

By DR. C. J. LUCKENS\*

Contrast between the two seasons of 1981 and 1982 could hardly have been greater. Whereas the former year was characterised by reduced populations in nearly all our native species, last year saw a very welcome revival for many of them. Once again weather seemed to have been the important factor, with fine settled conditions at the critical times in April, May, June and August.

The season started off well in mid-March in southern England with hibernators such as *Gonepteryx rhamni* L., *Nymphalis io* L. and *Polygonia c-album* L. in good numbers and *Aglais urticae* L. in some abundance. April was warm and sunny almost throughout, and this enabled all these species to produce excellent summer and autumn broods.

*Pararge aegeria* L. is often the first newly emerged butterfly to appear in this area. I saw many of these early specimens in sheltered spots in our garden from April 4th onwards. The later summer broods of the Speckled Wood were slightly disappointing in southern England, however, and no more than average numbers appeared. An example of a third brood was recorded from Easter Ross on October 3rd. This is perhaps unusual for the colonies in north east Scotland, though an autumn brood appears regularly in the milder coastal areas of the western Highlands. The Wall Brown, *Lasiomata megera* L. seemed to vary in abundance from region to region. In Cumbria it was considered to have had a below average season, but it was reported commonly in the west Midlands, and in the late summer brood did very well on the chalk of Sussex and Wilts. I found it abundant on the edge of the downs near Stockbridge in early August. In the west Midlands, *Melanargia galathea* L. once confined to local colonies, continued its spread and was abundant at Ledbury. The Winchester colonies seemed slightly weaker, though there was a good showing at Stockbridge in late July, and also in the Warminster area. In Sussex (Brighton area) it was below average and apparently had not recovered from its poor season in 1981. Many recorders noted the abundance of *Eumenis semele* L. in its favoured localities. The Portland colonies were selected for special mention with *ab. holanops* and *ab. monocellata* appearing among the old quarry workings. The Grayling was also common elsewhere along the Dorset coast – in the Lulworth area and around Swanage and the colonies on limestone grassland in Cumbria and in the Malverns did well. Most interestingly it seems to be recovering on the Kentish chalk and there was an encouraging report of it building up numbers at its former haunts at Folkestone. It also appeared in the Swans-  
\*Swallowfield, Manor Road, Durley, Hants SO3 2AF.

combe area in Kent and on the Downs near Compton in the Isle of Wight. *Maniola jurtina* L. and *Pyronia tithonus* L. both had an exceptionally good year in southern England. The latter literally swarmed in the lanes in this area of south Hants, and there were equally favourable reports from north Dorset and Wilts for both these species. News from Cumbria was slightly less favourable, where there has been apparently a gradual decline of *jurtina* over a number of years. In spite of the general increase of these two Satyrids very few aberrations of any kind were recorded. At the well known site at Arnside *Erebia aethiops* Esp. appeared to have done well in 1982. Good numbers were seen in early August, and contrary to the statements in many text books, the butterflies were recorded flying of their own accord in dull windless weather conditions. Another success story in 1982 concerned *Aphantopus hyperantus* L. After several seasons of relative scarcity this butterfly showed a definite increase in Hampshire. From Dorset came a report of six ab. *arete* seen in one day and several of this variety were noted in the Warminster area of Wiltshire.

The two Pearl-bordered Fritillaries *Clossiana selene* D. & S. and *Clossiana euphrosyne* L. continued to thrive near here at Botley Wood. I saw many *euphrosyne* in mid-May but was out of the country for the main *selene* emergence. Several ragged examples were flying in late June and the habitat so far remains ideal for these two attractive butterflies. Both species were reported numerous in Wyre forest last year and also in several localities in Cumbria. *Selene* apparently outnumbered *euphrosyne* in both these two areas but the opposite was the case at Parkhurst forest, Isle of Wight, where the Small Pearl-bordered Fritillary was rather scarce. One butterfly that seems to have decreased in this area over the last few years is *Argynnis aglaia* L. and the fine weather of 1982 did not seem to halt this trend. It was described as a poor year for the Dark Green Fritillary in north Dorset and Lulworth and from the Downs around Warminster. In south Cumbria it is also rather thinly scattered, but *Argynnis adippe* F. on the other hand is flourishing in this area around the Kent estuary. The High Brown also appears to be thriving in Wyre Forest though colonies elsewhere in the west Midlands were reportedly slightly down on numbers. In Wiltshire, where *adippe* seems to have just hung on in some areas, one correspondent made a search of the usual localities and failed to see it at all. Only small numbers of *Argynnis paphia* L. appeared around Warminster last year, but it seems to have had a better year in its haunts elsewhere in England. Particularly good numbers were noted around Durfold and Cranleigh and f. *valezina*, formerly very scarce in this area of the Surrey/Sussex border, also made an appearance. On the Isle of Wight, however, *valezina* was not uncommon in 1982 and it also occurred fairly frequently in the Cranborne area of Dorset. In Wyre forest *paphia* appeared in good numbers and was recorded

as early as June 30th *Euphydryas aurinia* Rott. had the benefit of excellent weather for its flight period in late May/early June. Reports from Dorset were generally favourable and the isolated Worcestershire colony also had a good year. The Cumbrian colonies however appear to be in serious decline. Of five remaining localities visited by one correspondent, only three still held the butterfly and then in very small numbers, (less than ten seen in any one locality). On the southern coastal strip of the Isle of Wight *Melitaea cinxia* L. was reported locally abundant in 1982, the best colonies being at Compton, and around St. Catherines Point. *Mellicta athalia* Rott. was not uncommon locally in Blean Woods and two recorders noted evidence of colonisation of new sites. There seems to have been an exceptionally long emergence period last year, as worn specimens of the Heath Fritillary were noted as early as June 1st and fresh examples were still flying on July 7th. I have no reports of the formerly thriving west country localities but I am informed they are under pressure from a variety of factors.

A welcome abundance of *Vanessa atalanta* L. was a feature of 1982. Early examples were reported in late April and by late May *atalanta* was building up numbers to a remarkable extent. All through the summer, from late June onwards, larvae were common on the nettles in our garden, and I finally saw a specimen sunning itself on the roof of our house on a warm day in mid-November. This abundance of the Red Admiral seems to have been noted from southern England to Easter Ross. It was recorded as far north as Durness, Sutherland, on June 7th. *Vanessa cardui* L., on the other hand, I found rather scarce in southern Hampshire, though elsewhere good numbers were recorded in the late season. I have mentioned already the excellent numbers of the commoner Nymphalidae in 1982, but a particular interesting record is of *Nymphalis io* L., caught and photographed on June 26th by the R.S.P.B. warden on Handa, Sutherland. This seems an exceptionally early date for a newly emerged peacock so far north. I have seen hibernated specimens in Argyll as late as June 10th and I wonder if this was the status of the Handa specimen. *Apatura iris* L., The Purple Emperor, seemed to have enjoyed another favourable year. I saw a few examples in local woodland, and on July 3rd a superb, newly-emerged male displayed on the road in front of me in south west Wilts. In west Sussex and Surrey it apparently had an excellent season. Unfortunately one report was received of large numbers of *iris* having been taken by individual collectors in this area. I have no wish to stir up controversy about this. The Purple Emperor is not endangered by moderate collecting, but if individuals are irresponsible and excessive there may be a call for yet more restrictive legislation. Undoubtedly the greatest threat to *Apatura iris* L. comes from forestry policy. Creating a "Conservation Area" in south west Wilts where the butterfly was already common, then subse-

quently devastating the woodland, is an unhappy example of this.

The White Admiral *Limenitis camilla* L. has had similar problems in recent years. It seems to be slightly more subject to adverse meteorological conditions. In 1982 it was reported in good numbers in west Sussex and is reappearing in some Wiltshire and Hampshire localities where it has been virtually absent for several years. It also appears to be extending its range in Worcestershire and Shropshire.

1982 was generally a very favourable year for *Hamearis lucina* L. It was described as "holding its own or better", in Westmorland. In north Dorset and in the Hampshire chalk localities it appeared in strength. In east Kent the Duke of Burgundy had declined almost to extinction in 1980 and 1981 but now appears to be on the increase again. Few records were received of *Cupido minimus* Fuesl. Small numbers were seen flying with *cinxia* on the Isle of Wight; specimens were noted imbibing moisture at Downe in Kent and a second brood was recorded in August from Banstead Downs, Surrey. Two reports of *Aricia artaxerxes*, F. concerned the Witherslack colonies. Though remaining local, these limestone colonies were found to be flourishing in 1982. The Common Blue, *Polyommatus icarus* Rott. produced a good second brood nearly everywhere, but had a patchy time earlier on in the year. The same applied to *Lysandra bellargus* Rott. which was reported in good numbers as early as May 9th at Ranmore, Surrey, and produced a healthy second generation in late August/September in many of its colonies. There was a prolonged emergence in the second brood; it was recorded as early as August 15th at Corfe and I saw fresh females in mid September along the Dorset coast path near Swanage. In Sussex *bellargus* improved on its 1981 showing and it also appeared in a new locality near Warminster, Wiltshire. In the Queensdown area, Kent, *bellargus* occurs in one or two sites and in these was described as fairly common. This beautiful 'blue' was also seen commonly in one locality on the Isle of Wight. *Lysandra coridon* Poda. also made something of a comeback in 1982 after several very lean years: at Portland ab. *fowleri*, ab. *caeca* and ab. *obsoleta* forms were reported. The Warminster colonies recovered slightly but the *coridon* population there has been at a very low ebb recently. It was interesting to hear of signs of local recovery in the case of the Holly Blue, *Celestrina argiolus* L. I saw one in May on Southampton Common and a few near Bishops Waltham in late July. A few also were seen in Breconshire and it was recorded at Folkestone as late as August 26th. It became comparatively plentiful in Kew, Surrey, however in both spring and summer broods and it is also making something of a comeback in the Lewes area of Sussex.

One butterfly that was consistently reported as scarce throughout was *Thecla quercus* L. — the only exception being a report from Banstead, Surrey, where it was seen in numbers on August 1st. *Thecla betulae* L. on the other hand had a good year. I esti-

mated the number of winter ova near Selborne to be higher than usual and in the lanes north of Oxford around the Bucks border, Dr. T. W. Tolman and I found ova almost ubiquitous in hedge-rows and wood borders in January of this year. A count was made of ova in the isolated localities in Worcestershire and favourable numbers were reported from there also. Sporadic reappearance of *Strymonidia w-album* Knoch. also seems to have been a feature of 1982. It was reported from near Orpington Kent and a sprinkling of sightings were made in Worcestershire, Shropshire and near Hereford. A healthy colony was discovered on the Isle of Wight in 1981 and this was holding its own in 1982. It still occurs in the woods west of Winchester, but a search for ova on a healthy wych elm, where *w-album* used to occur only two miles from my present home, resulted in disappointment. Its congener *Strymonidia pruni* L. was present in numbers in at least one south Bucks locality in 1982 and in the same area the editor and I saw one or two resting in the blackthorns during a day of continuous rain at the end of June.

*Leptidea sinapis* L. had a good season in west Sussex near Plaistow, and, though down on numbers slightly in the west Midlands, it was reported as extending its range in Worcestershire and Hereford. I personally found *Antocharis cardamines* L. abundant in south Hants in 1982, but in Wiltshire it was apparently less common than usual and in Cumbria it is apparently becoming scarcer each year. The Spring Skippers *Erynnis tages* L. and *Pyrgus malvae* L. were both up to strength in south Hants, Dorset, Wiltshire and Wyre Forest, Worcestershire. On the other hand both were reported as very scarce in Sussex in 1982. *Tages* was also generally uncommon in Cumbria. A new locality was discovered in east Scotland, near Rosemarkie, where the Dingy Skipper is a very local insect indeed. *Thymelicus lineola* has apparently almost replaced the closely related *Thymelicus sylvestris* in the Isle of Sheppey and this has been taking place gradually over the last ten years. *Lineola* is also spreading along the Sussex coastal strip to west of the Adur Valley and in many places is present in good numbers. The very local butterfly *Hesperia comma* L. had a thoroughly successful year in this area of Hampshire where there are two good strong colonies. The best of these is undoubtedly that near Broughton, where the butterfly was out in force in the first fortnight of August. It was also fairly plentiful in the east Kentish locality near Dover, which is probably its last stronghold in Kent. A rediscovered locality near Stroud, Gloucestershire, apparently revealed only one example last year, but I am informed the habitat is not ideal for it there. The fine last summer weather in 1982 led into a very wet autumn. The weather remained fairly mild however and many of the hardier butterflies were seen well into October and November. It will be interesting to see whether the wet, mild, winter will offset the generally favourable butterfly season of 1982.

### Acknowledgements

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THE QUEEN OF SPAIN FRITILLARY REARED FROM EGGS. — I was very sorry to learn of the death of Mr. T. D. Fearnough (*Ent. Rec.*, **95**: 114), whose notes I enjoyed reading over many years. The reference to his successful breeding of *Argynnis lathonia* L. (Queen of Spain Fritillary) is of special interest to me. Mr. O. G. Watkins, with whom I corresponded over the years, although we never met, kindly sent me several eggs of the same butterfly in 1949, and I reared no less than five butterflies. They emerged in the autumn of that year, and they are now in my collection. The larvae fed on pansy leaves. — G. E. HYDE, 26 Warnington Drive, Bessacarr, Doncaster, S. Yorkshire DN4 6SS.

AGLAIS URTICAE L. AB. NIGRA TUTT. — A fine example of this rare aberration occurred in August 1982 near Dosthill Quarry, Tamworth, Staffs. As it flew from thistle head to thistle head, it was immediately distinguishable from the normal small tortoiseshells it was amongst, of which there were about 300 on two extensive patches of thistle. The specimen was first seen on the 27th, and again on the 28th and 31st of August. A good photograph was taken of it and submitted to the Editor of the *Record*. — P. B. DARCH, 9 Maxstoke Close, Dosthill, Tamworth, Staffs, B77 1NP.

COURTSHIP AND PAIRING IN *INACHIS IO* L. — Courtship and pairing of butterflies is not a frequently observed event and I don't previously recall observing this in *Inachis io* L.. On 16th April, a warm sunny day, peacocks and small tortoiseshells were flying frequently in and across our garden at Caversham. Towards mid afternoon two peacocks were indulging in an interesting flight pattern, one butterfly following the other in a fairly straight flight path and both insects exhibiting an unusual regular fluttering of wings. After making two of these purposeful looking flights the pair suddenly flew out of view under the eaves of a garden shed and I went down to investigate. Both butterflies were found sitting quietly *in copula* in a dark corner — it was 3.45 p.m. Two hours later they were still in the same position and they were left undisturbed until 9.30 a.m. the following morning. By that time one of the pair, presumably the male, had disappeared, but the other butterfly remained under the eaves for another three days, each of these days being cool and wet. By the fourth day sunny, warm weather had returned and, as expected, the remaining butterfly had flown sometime before 9.30 a.m. — B. R. BAKER, 25 Matlock Road, Caversham, Berks.

FOUR SPECIES OF *MEGASELIA* (DIPTERA:PHORIDAE)  
NEW TO BRITAIN FROM HAYLEY WOOD,  
CAMBRIDGESHIRE

By R. H. L. DISNEY\*

Hayley Wood, Cambridgeshire (Grid ref. 52/2953) is a Grade I Site of Special Scientific Interest (Site W. 40 in Ratcliffe, 1977). It was with interest, therefore, that I examined collections of scuttle flies made by D. M. Unwin, during 1980, in this famous wood. The collections represented specimens of more than 70 species. Only ten species did not belong to the giant genus *Megaselia*. Among the latter four species are new to the British List. They are detailed below.

*Megaselia aculeata* (Schmitz, 1919).

Males of this species are readily distinguished from related species by the presence of a pair of sclerotised plates, bearing bristles, situated on the venter of abdominal segment 6 (see fig. 255 in Schmitz, 1958).

Four males were recorded from Hayley Wood, two in June and two in September. In addition P. J. Chandler has sent me a male caught on 25 May 1980 at Chippenham Fen, Cambridgeshire (Grid ref. 52/6469). I have also caught a male at Flatford Mill, Suffolk, (Grid ref. 62/079330) in August 1981. The species has previously been recorded from Germany, Holland and Portugal.

*Megaselia insons* (Lundbeck, 1920).

This species is more variable than has been supposed and only some specimens will key out correctly in Schmitz's (1957) Key. However, I have confirmed the identity by comparison with the type (kindly loaned by Dr. Lief Lyneborg, Zoologisk Museum, Copenhagen, Denmark).

Six males were recorded from Hayley Wood, three in June, one in July and two in August. I have collected it from Flatford Mill, Suffolk (Grid ref. 62/080329) in August 1981; from Malham Tarn, North Yorkshire (Grid ref. 34/889673 and 34/893673) in June 1976 and June 1982; from Aviemore (Grid ref. 28/893112) in July 1982; and D. Henshaw collected it at Waltham Abbey, Essex (Grid ref. 52/3-0-) in May, 1982.

The species has previously been recorded from Austria, Germany, Denmark, Holland, Portugal and Poland.

*Megaselia intercostata* (Lundbeck, 1921)

The costal index and costal cilia of the single specimen from Hayley Wood (collected in June) are a little longer than as given by Lundbeck (1922) and Schmitz and Beyer (1965). However I have

\*Malham Tarn Field Centre, Settle, North Yorkshire, BD24 9PU.

confirmed the identity by comparison with the type (kindly loaned by Dr. Lief Lyneborg). A detailed description in English is given by Lundbeck (1922).

The species has previously been recorded from Austria, Germany, Denmark, Holland and Poland.

*Megaselia subconvexa* (Lundbeck, 1920)

Males of this species can be readily distinguished from several similar species by the upper part of the epandrium forming a curious, collar-like development around the base of the anal tube (see figs. 355 and 356 in Schmitz and Beyer, 1965).

Five were collected in Hayley Wood, in August and September. In addition P. J. Chandler collected a single male at Chippenham Fen on 25 May 1980.

The species has previously been recorded from Austria, Denmark and Holland.

### Acknowledgements

I am grateful to the Royal Society for grants to support my investigations of Phoridae.

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APOTOMIS SAUCIANA SAUCIANA FRÖLICH (LEP.: TORTRICIDAE) IN KENT. - From two larvae collected 18.v.1982 whilst sweeping the Bilberry at Oldbury Hill, Nr. Sevenoaks, a single adult emerged on 21.vi.1982. The foodplant is very local in the county and restricted to the sandy areas of the south-west, and it is possible that this species is very scarce in Kent as I am not aware of any recent records. - N. F. HEAL, Fosters, Detling Hill, Nr. Maidstone, Kent.

## NOTES ON SCOTTISH MICROLEPIDOPTERA, 1982

K. P. BLAND\*

The following species of special note have come my way in 1982;

*Diplodoma herminata* (Geoff.) Larvae of this species were found in a rather unusual location on 9 & 25.iv.1982 in Meggernie and Gallin Pinewoods, Perthshire (O.S.Grid NN/5244, 5545 & 5645; V.c.88). They were among the debris behind the loose bark of dead Caledonian Pines – in one instance they were as much as 2 feet above the ground. An imago emerged on 25.v.1982. Larvae of this species were also found on the latter date (25.iv.1982) in a roadside oakwood at Balnaguard, Perthshire (O.S.Grid NN/9451; V.c.88). These were in the more typical location of just above the ground litter in the buttressroot angles at the base of large oaks. They produced an imago on 30.v.1982.

*Bucculatrix cristatella* Zell. In 1894, William Evans (Evans, 1897) recorded *Bucculatrix cristatella* from Pettycur, Fife (V.c.85). This has remained the only Scottish record for this species until present. On 29.v.1982 a search of *Achillea millefolia* at Pettycur (O.S.Grid NT/2686) yielded a single empty *Bucculatrix* moulting-cocoon. A further search on 31.vii.1982 was more successful yielding several empty moulting-cocoons and 5 pupation-cocoons; the latter producing imagines of *B. cristatella* between 1-5.vii.1982. Its persistence in its former locality was thus established. Subsequently vacated *Bucculatrix* moulting- and pupation- cocoons on *Achillea millefolia* were found at Seton Bents, East Lothian (O.S. Grid NT/4376;V.c.82 on 10.viii. 1982) and Duddingston Loch, Edinburgh (O.S. Grid NT/2872;V.C.83 on 12.viii.1982) suggesting that it is quite widespread in the Forth region.

*Glyphipterix equitella* (Scop.) Three imagines of this species were taken about *Sedum acre* on Arthur's Seat, Edinburgh (O.S. Grid NT/2772;V.c.83) on 4.ix.1982. This appears to be only the second record of this species from Scotland; it previously having been taken at Moncreiffe Hill, Perthshire in the 1870s (Moncreiffe, 1880).

*Coleophora albitarsella* Zell. This species was bred from larval cases found feeding on *Origanum vulgare* (Marjoram) at Aberdour, Fife (O.S.Grid NT/1985; V.c.85) on 9.v.1982. An imago emerged on 22.vi.1982. Cases of this species have been collected at this location previously (6.xi.1977) but failed to produce imagines. This appears to be the first recorded locality for this species in Scotland.

*Coleophora lithargyrinella* Zell. A small coleophorid larva was found feeding on *Stellaria holostea* near Hartside, Berwickshire  
\*35 Charterhall Road, Edinburgh EH9 3HS.

(O.S.Grid NT/4753;V.c.81) on 9.viii.1981. The imago was successfully reared (emerged 16.vi.1982) and proved to be *Coleophora lithargyrinella*. This appears to be the first record for this species in Scotland.

*Syncopacma sangiella* (Stt.) Several dark larvae in spun shoots of *Lotus corniculatus* collected on Cramond Island, Midlothian (O.S.Grid NT/1978; V.c. 83) on 29.v.1982, produced imagines of this species on 10-28.vii.1982. Although known from Scotland for a long time, this species appears to have been recorded only from Kincardineshire (V.c.91) and Aberdeenshire (V.c.92 & 93) (Hulme, Palmer & Young, 1978).

*Dichrorampha alpinana* (Treits.) Four females of this species were bred from larvae in the rootstocks of *Chrysanthemum leucanthemum* collected on 31.v.1982 at Blackford, Edinburgh (O.S.Grid NT/2571;V.c.83). Imagines emerged between 6-10.vi.1982 and appear to be the first specimens of this species recorded in Scotland (Bradley, Tremewan & Smith, 1979).

*Chilo phragmitella* (Hbn.) Several worn specimens of this species came to M.V. light by the *Phragmites* bed at Adderstonelee Moss, Roxburghshire (O.S. Grid NT/5311;V.c.80) on 3-4.viii.1982. This species seems to be rather uncommon in Scotland, only having been recorded previously from Mid-Perthshire (1959) and the Tay Estuary (1967).

### Acknowledgements

In preparing these notes liberal use was made of the Scottish Insect Records Catalogue at the Royal Scottish Museum, Edinburgh by courtesy of Dr. M. R. Shaw.

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THE PINE HAWK: *HYLOICUS PINASTRI* L. IN WARWICKSHIRE. — On the 28th June 1982, a worn male of this species visited the light trap here at Charlecote. This appears to be the first record of this species for the county. — A. F. J. GARDNER, Willows End, 29 Charlecote, Nr. Warwick.

## A FEW INSECTS FROM MONTSERRAT, WEST INDIES

By J. COOTER\*

In view of the apparent paucity of records from this small member of the Leeward Islands, I thought it worthwhile to list the few species captured by my father and myself during a brief visit in 1975. Montserrat is about 30 miles south-west of Antigua, 16° 45' N, 62° 14' W.

None of the residents we came into contact with could recall entomologists visiting the Island, but there are a few records in Blackwelder, R.E. (Checklist of the Coleopterous Insects of Mexico, Central America, the West Indies and South America. *United States National Museum Bulletin* 185, parts 1-6 (1944-1957)). Of the few species recorded here, only two are listed by Blackwelder as occurring in Montserrat (indicated by an asterisk\*).

Lepidoptera: *Anartia jatrophae* Johanss., Salem, 4.ix.

Odonata: *Lepthemis vesiculosa* F., *Orthemis ferruginea* F., *Triacanthagyna trifida* Rambur and *Erythrodiplax umbrata* L., all in flight around a pool at the road side near the sports stadium between Plymouth and Richmond Hill, 31.viii.

Dermoptera: Carcinophoridae – *Euborellia stali* (Dohrn) ♂ ♀ (det. A. Brindle) Richmond Hill, 28.viii.

Coleoptera: Histeridae – *Atholus confinis* (Er.) (det. J. Théron) Richmond Hill, 28.viii. Scarabaeoidea – *Ligyris cuniculus* (F.) (det. R. D. Pope) Richmond Hill, 31.viii., dead specimens floating in swimming pool. Elateridae – *Heteroderes* sp. (det. C. M. F. v. Hayek) Spanish Point, 31.viii. (no species recorded by Blackwelder from the Leeward Islands). Cantharidae – genera and species indeterminate (det. E. R. Peacock) Salem, 4.ix. (3ex). Lampyridae – *Aspisoma ignitum* L. var. *polyzona* Chev. (det. E. R. Peacock) Richmond Hill, 29.viii. (3ex). Dermestidae – *Trogoderma ornatum* Say ♀ (det. E. R. Peacock) Richmond Hill, 29.viii. Coccinellidae – *Cycloneda sanguinea* (L.) (det. R. D. Pope). Tenebrionidae – *Phaleria fulva* Fleut. & Salle (det. C. A. Triplehorn) 17 examples under a dead fish on the beach at Foxes Bay, 6.ix.; *Crypticus* sp. Botanic Gardens, Plymouth (Blackwelder lists no species from the West Indies). Cerambycidae – *Eubria decemmaculata* F., Richmond Hill, 29.viii., at light. Chrysomelidae – (all det. S. L. Shute) – *Metriona trisignata* Bohm., Salem, 4.ix. (2 ex); *Galerucella tropica* Jac. Plymouth, 29. viii.; *Homophoeta albicollis* F. Richmond Hill, 31.viii. (8ex); *Lema* sp. indeterminate, Salem, 4.ix. (2ex), Curculionidae – (all det. R. T. Thompson) – *Sitophilus linearis* (Hb.) "The Tamarind Weevil", common in ripe tamarind pods, Richmond

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Hill and Old Towne; *Diaprepes abbreviatus* (L.)\* Plymouth, 2.ix. (ex); *D. famelicus* (O1.) Plymouth, 30.viii. (4ex), Spanish Point, 31. viii. (2ex), Upper Galways Estate 3.ix. (2ex); *Lachnopus* species, *curvipes*-group Richmond Hill, 29.viii (lex), Plymouth, 30.viii. (3ex), Spanish Point 31.viii (lex) (no *Lachnopus* species are recorded from Montserrat by Blackwelder); *Litostylus pudens* (Bohe- man)\* Plymouth, 28.viii. (lex) Spanish Point, 31.viii. (lex); *Pseudo- mus* species indeterminate, Richmond Hill, 30.viii, Salem, 8.ix (no *Pseudomus* species recorded by Blackwelder from the Leeward Islands).

Examples of all the Coleoptera have been donated to the British Museum (Natural History), London. I would like to express my thanks to Martin Brendell (BM(NH)) and to all the other authorities who determined material. I am also grateful to Mr. and Mrs. E. Herman for generous hospitality afforded to us while on Montserrat.

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POSSIBLE DEFENCE REACTION OF *XYLOCAMPA AREOLA* ESPER (LEP.: NOCTUIDAE) PUPA. — On 25th July, 1982, a silk cocoon containing a pupa of *Xylocampa areola* Esp., the Early Grey, was discovered on a piece of sack-cloth in a garden shed at East Ham, Essex, when I promptly placed this in a suitable container and put it on one side for the winter. I did not examine it again until 14th August, 1982, when I was surprised to discover that a noise seemed to be produced from the cocoon when it was picked up.

Employing a 100 watt light bulb to "candle" the cocoon, (as one would a chicken egg to monitor embryo development), it was possible to see that the noise, which resembled the crushing of dead leaves under foot, was produced by rapid vibration of the abdominal segments of the pupa against the internal walls of the extremely rigid cocoon. The sound produced was clearly audible 4 metres away across the room.

I can only assume that this is some form of defensive reaction; it certainly startled me, although one has serious doubts as to the value of causing a predator to drop a rigid silk cocoon which is then completely unable to escape further attack. Since the cocoon was firmly stuck to the surface upon which it was found however, it may simply be that the noise acts as a deterrent to more casual predators that might investigate the cocoon and be simply scared away by the sudden noise. I cannot see it being terribly effective however!

The moth, a male, emerged on 12th May, 1983, having been kept on a west facing window-sill inside an unheated room since its discovery. — C. W. PLANT, Assistant Curator, Natural Sciences (Biology), Passmore Edwards Museum, Romford Road, Stratford, London, E15 4LZ.

MICROLEPIDOPTERA –  
A REVIEW OF THE YEAR 1982

Compiled by DAVID J. L. AGASSIZ\*

This is the third year I have attempted to compile this review, but the first time it has been such a joyful account of interesting records and discoveries, thanks largely to better weather in 1982.

It is also the first attempt at a rather more comprehensive set of records. I approached a number of field entomologists around the country and the response has been very encouraging. It is hoped that the list of records included will be of greater use to researchers in future years.

Pride of place must go to the discovery of species new to Britain: an *Agonopterix* species was found to be resident by Dr. J. R. Langmaid and E. C. Pelham-Clinton; each had taken an adult in earlier years and their search for larvae was duly rewarded – we await publication on this with great interest. In a similar category is a *Coleophora* species bred by N. F. Heal; this was first exhibited as *C. suaedivora* Meyr. but further investigation proved it to be a different species – a paper on this is also awaited. It is possible that these species have yet to be described and named.

Two specimens of *Elachista littoricola* Le Marchand were taken by E. H. Wild in South Hampshire; its status has yet to be established, but it could well be resident. A single *Zophodia convolutella* Hb. was taken in Kent by J. Roche; this large Phycitid could easily gain a foothold for it is sometimes a pest on the Continent.

On the outskirts of London a specimen of *Argyresthia trifasciata* Staud. was taken by R. A. Softly and it will be interesting to see whether this has become established on cultivated junipers. Although first taken in 1954, it was not until 1982 that *Plutella haasi* Staud. was correctly identified by the Finnish entomologist Dr. J. Kyrki. A single specimen was taken by Canon G. A. K. Hervey in western highlands of Scotland where it must surely be resident.

*Leucinodes orbonalis* (Guen.) was added to the list of casual imported species by H. E. Beaumont who bred one from an aubergine.

Although it had been recorded from Ireland, *Coleophora ramosella* Zell. was taken for the first time in the United Kingdom by N. F. Heal who works so well on that group. Also confirmed as resident on the British mainland was *Luffia lapidella* Goeze complete with males! Hitherto only the parthenogenetic females of *L. ferchaultella* Steph. have been found except in the Channel Isles, but Dr. F. H. N. Smith in Cornwall has remedied the position.

Recent arrivals in Britain continued to be found: *Dioryctria*

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*schuetzeella* Fuchs was taken in Kent again by several entomologists, but as yet there is little evidence of spread further afield. It is encouraging to hear that *Bisigna procerella* D. & S. seems to have a good foothold in or near its original locality in East Kent, where J. M. Chalmers-Hunt and others have taken specimens. *Metzneria aprilella* H.-S. has been found much more widely than its discovery in central southern England suggested, with records coming from Yorkshire and East Anglia. *Stigmella samiatella* Zell. is found by A. M. Emmet to have a yet more sure base in north-east Essex. *Eucosma metzneriana* Treits. yielded a second British specimen to Dr. J. R. Langmaid in Southsea — a long step from the first in Cambridgeshire. *Cydia pactolana* Zell. has been found by T. G. Winter to have extended its range into Surrey and Berkshire and is probably even more widespread but overlooked.

Very rare or rediscovered species include *Pammene agnotana* Rebel of which the second British specimen was taken by R. Fairclough. A. M. Emmet found the very local *Phyllonorycter sapor-tella* Dup. to be locally common in East Anglia. *Tebenna bjerkan-drella* Thunb., a very little-known species was found in south-west England by R. J. Heckford who bred the species, and also in South Ireland by K. G. M. Bond. Other long-lost species found were *Epermenia insecurella* Stt., *Coleophora ochrea* Haw. and *Pyralis lienigialis*, all of which are an encouragement when so many habitats seem threatened.

New understanding of life histories is at least as important as the discovery of adults and can lead to a better understanding of a species' distribution. Such a case is *Depressaria ultimella* Stt. which R. J. Heckford found on *Apium nodiflorum*; other interesting new information was found by A. M. Emmet about *Crombrugghia distans* Zell., and it seems *Platyptilia calodactyla* D. & S. may have a foodplant other than *Solidago virgaurea*.

*Palpita unionalis* Hb. was probably the most widely recorded migrant 'micro' in 1982 but there was also a record of *Phthorimaea operculella* Zell. by E. C. Pelham-Clinton at Dungeness, and from Wiltshire G. Smith recorded *Euchromius ocella* Haw. T. Peet's record of *Agrotera nemoralis* Scop. in Guernsey seems to place that species among the migrants and raises questions about its status in south-east England, where perhaps it is only a temporary resident, depending largely on migration.

Within the country the most noticeable movement is that of *Crocidosema plebejana* Zell. which has spread from the south-west, turning up not only in Hampshire but in Kent and Essex. *Ectoedemia turbidella* Zell. is found to have moved in the opposite direction, and *Bucculatrix cidarella* Zell.'s habit of feeding on *Myrica* has been found to occur even in England!

The systematic list now follows. Most of the records given are new county (or vice-county) records. References are included

wherever possible and the source of the record is given by the initials of those whose names follow and to whom I am very grateful for their help and collaboration. It has not always been easy to decide which records to include, but to cover any imprudent omissions I have prepared a duplicated list of all the records submitted which is available to contributors and others interested who send a S.A.E.; numbers of vice-counties are given in parentheses. Year: 1982 unless stated otherwise.

Contributors: H. E. Beaumont, K. P. Bland, J. M. Chalmers-Hunt, H. E. Chipperfield, M. F. V. Corley, A. M. Emmet, R. J. Fairclough, J. L. Fenn, M. W. Harper, N. F. Heal, R. J. Heckford, J. R. Langmaid, H. N. Michaelis, E. C. Pelham-Clinton, J. Roche, A. N. B. Simpson, F. H. N. Smith, P. A. Sokoloff, D. H. (& P. H.) Sterling, M. J. Sterling, R. G. Warren, E. H. Wild & M. R. Young.

### MICROPTERIGIDAE

*Micropteryx tunbergella* Fab. Blairgowrie (89) '81 – KPB,  
*Ent. Rec.* **94**: 219

### NEPTICULIDAE

*Bohemannia quadrimaculella* Boh. Loch Kindar (73) – MRY,  
new to Scotland

*Etainia decentella* H.-S.

Notts. (56) '81 – MJS

*Ectoedemia argyropeza* Zell.

Inverpolly (105) – MRY, most  
northerly record.

*E. turbidella* Zell.

Faringdon (22) – MFVC

*Trifurcula griseella* Wolff

Beer (3) 13-iv – RJH

*T. cryptella* Stt.

Worcs. (37) bred – ANBS

*Stigmella filipendulae* Wocke

Brixham (3) vacated mines –  
RJH

*S. samiatella* Zell.

N. E. Essex (19) becoming well  
established – AME

*S. acetosae* Stt.

Dalbeattie (73) '81 – KPB,  
*Ent. Rec.* **94**: 219, new to  
Scotland.

### INCURVARIIDAE

*Lampronia fuscataella* Tengst.

Romford (18) – N. Nash per  
AME

*Adela croesella* Scop.

Caerlaverock (72) '81 – KPB,  
*Ent. Rec.* **94**: 219

### PSYCHIDAE

*Solenobia inconspicuella* Stt.

Queen's Wood (36) – MWH

*Diplodoma herminata* Geoff.

Perths. (88) larvae – KPB

*Luffia lapidella* Goeze

Marazion (1) '81 & '82 – FHNS,  
*Ent. Rec.* **95**: 53 – 57

### TINEIDAE

*Triaxomera fulvimitrella* Sodof.

Harewood Forest (12) – DHS;  
Powerscourt (H20) – JMC-H,

- Tinea columbariella* Wocke *Ir. Nat. J.* **20**: 532  
Witham and Wickham Bishops  
(19) '50 — *E.M.M.* **87**: 171  
Rainham (18) '81 — G. S.  
Robinson, *Ent. Gaz.* **33**: 51;  
Grays (18) '81 & '82 — DJLA
- LYONETIIDAE
- Bucculatrix cristatella* Zell. Scotland (82, 83 & 85) —  
KPB
- B. cidarella* Zell. Larva on *Myrica* in England  
(9) — AME, *Ent. Rec.* **94**:  
238
- B. thoracella* Thunb. S. Hants (11) — DHS & JRL,  
*Ent. Rec.* **89**: 315 & **94**: 206
- GRACILLARIIDAE
- Caloptilia robustella* Jäckh New to Ireland (H1) JMC-H,  
*Ir. Nat. J.* **20**: 532
- Parectopa ononidis* Zell. S. Essex (18) locally common  
from Purfleet to Foulness —  
AME
- Phyllonorycter roboris* Zell. Surrey (17) — NFH & RJF,  
*Ent. Rec.* **95**: 72
- P. saportella* Dup. Norfolk (27 & 28) & Suffolk  
(25) — AME, *Ent. Rec.* **94**:  
119, 244.
- CHOREUTIDAE
- Tebenna bjer kandrella* Thunb. Douglas (H4) — K. G. M. Bond,  
*Ent. Rec.* **95**: 28; bred Devon  
etc. — RJH, Publication awaited.
- Choreutis sehestediana* Fabr. Danbury (18) '81 — AME;  
Plympton (3) — RJH; Coll (103)  
larvae on *Scutellaria minor*, —  
KPB, *Ent. Rec.* **94**: 219
- GLYPHIPTERIGIDAE
- Glyphipterix minorella* Snell. Edinburgh (83) 4.ix. — KPB
- YPONOMEUTIDAE
- Argyresthia trifasciata* Staud. Hampstead (21) June — R. A.  
Softly (AME), *Ent. Rec.* **94**:  
180 - 182
- Yponomeuta rorrella* Hb. Ham Street (15) — NFH;  
Faringdon (22) — MFVC
- Swammerdamia compunctella* H.S. Hough Wood '79 & Queen's  
Wood (36) '81/2 — MWH;  
Scarborough (62) — HEB; New  
Forest (11) '71 — DJLA
- Ypsolophus dentella* Fabr. Larvae on *Symphoricarpos rivula*

- Plutella haasi* Staud. *ris* at Saltfleetby-Theddlethorpe (54) – HEB  
Beinn Eighe (105) 11.vii. '54, G.A.K. Hervey, det. J. Kyrki '82, new to Britain, Kyrki & Jalava, *Ent. Gaz.* 34: 61
- EPERMENIIDAE
- Phaulernis fulviguttella* Zell. Breney Common (2) – FHNS  
*Epermenia insecurella* Stt. S. E. England – S. Palmer per MRY  
*E. aequidentellus* Hofm. Stodmarsh (15) – JMC-H, *Ent. Rec.* 94: 202
- COLEOPHORIDAE
- Goniodoma limoniella* Stt. Saltfleetby-Theddlethorpe (54) – HEB, most northerly record.  
*Coleophora* sp. Bred from *Suaeda* (Kent) – NFH, identity and publication awaited.  
*C. coracipennella* Hb. Worcs. (37) – ANBS; S. Yorks (63) '81/82 – HEB, *Ent. Rec.* 94: 108, most northerly record.  
*C. cerasivorella* Pack. S. Yorks (63) larva on *Prunus spinosa* – HEB, most northerly record.  
*C. limosipennella* Dup. Sprotbrough (63) '81/82 – HEB, *Ent. Rec.* 94: 190  
*C. fuscocuprella* H.-S. Worcs. (37) – ANBS  
*C. viminetella* Zell. Larva on *Filipendula ulmaria* – FHNS Warwicks. (38) – ANBS  
*C. binderella* Koll. Larva on *Carpinus* – NFH, *Ent. Rec.*, 94: 129  
*C. albitarsella* Zell. Aberdour (85) bred – KPB, new to Scotland.  
*C. frischella* Linn. Grays (18) – DJLA; Saffron Walden (19) – AME  
*C. hemerobiella* Scop. Worcs. (37) – ANBS  
*C. lithargyrinella* Zell. Hartside (81) bred – KPB, new to Scotland  
*C. ochrea* Haw. Rediscovered in Kent – NFH  
*C. currucipennella* Zell. Hilton (57) – MJS  
*C. trochilella* Dup. Larvae on *Artemisia absinthium* – MJS  
*C. machinella* Brad. A further Surrey (17) record – RJF  
*C. ramosella* Zell. Whitstable (15) bred – NFH, new to U.K., *Ent. Rec.* 95: 84  
*C. benanderi* Kanerva Grays (18) – DJLA

## ELACHISTIDAE

*Elachista alpinella* Stt.*E. littorcola* Le Marchand*E. subalbidella* Schlag.*Cosmiotes stabilella* Stt.

## OECOPHORIDAE

*Bisigna procerella* D. & S.*Batia lunaris* Haw.*Depressaria ultimella* Stt.*D. badiella* Hb.*D. douglasella* Stt.*D. weirella* Stt.*Agonopterix* sp.*A. astrantiae* Hein.

## ETHMIIDAE

*Ethmia funerella* Fabr.

## GELECHIIDAE

*Metzneria aprilella* H.-S.*M. lappella* Linn.*M. aestivella* Zell.*Paltodora cytisella* Curt.*Monochroa suffusella* Dougl;*M. lutulentella* Zell.*Recurvaria nanella* D. & S.*Teleiodes vulgella* Hb.*T. decorella* Haw.*Chionodes fumatella* Dougl.

Worcs. (37) – ANBS

Keyhaven (11) 4.vi. – EHW,  
new to Britain, *Ent. Rec.*, **95**:  
65

Alford (54) 6.vi. – HEB

Axmouth & Beer (3) bred –  
RJHHam Street (15) – JMC-H etc.,  
*Ent. Rec.* **94**: 204

Notts. (56) '81 – MJS

Larvae on *Apium* – RJHthen others, various localities,  
publication awaited.

Notts. (56) – MJS

Worcs. (37) – ANBS

Herefs. (36) – MWH; Long  
Eaton (57) – MJSCornwall, bred – JRL & ECP-C,  
identity and publication awaited.East Meon (11) – DHS & JRL,  
*Ent. Rec.* **94**: 182Gt. Sampford (19) 19.v. – N.  
Nash per AME; Clough Wood  
(57) – MJSFreckenham (26) bred – ANBS;  
Faringdon (22) – MFVC; S.  
Yorks (63) – HEBDerbys (57) – MJS; Cresswell  
(67) – HEB

Purfleet (18) – DJLA

Edwinstowe (56) – MJS

Worcs. (37) – ANBS

Matching (19) – AJF; Axminster  
(3) 13.vii. – ECP-C

Worcs. (37) – ANBS

Larvae on *Juniperus* – PASGreat Horkesley (19) – B. H.  
Harley per AMEFingringhoe (19) previously mis-  
identified as *B. similis* '72 –  
AME; Faringdon (22) – MFVC;  
Barton Mills (26) – AME &

- Scrobipalpa clintoni* Pov.  
*Phthorimaea operculella* Zell.  
*Caryocolum blandulella* Tutt  
*Nothris congressariella* Bruand  
*Syncopacma larseniella* Gozm.  
*S. sangiella* Stt.  
*Oegoconia quadripuncta* Haw.
- MOMPHIDAE**  
*Mompha terminella* H. & W.  
*M. miscella* D. & S.  
*M. conturbatella* Hb.  
*M. nodicolella* Fuchs.
- COCHYLIDAE**  
*Hysterosia sodaliana* Haw.  
*Phaltonidia alismana* Rag.  
*Cochylis flaviciliana* Westw.
- TORTRICIDAE**  
*Cacoecimorpha pronubana* Hb.  
*Aphelia viburnana* D. & S.  
*Acleris sparsana* D. & S.  
*A. abietana* Hb.  
*A. literana* Linn.  
*Apotomis sororculana* Zett.
- ECP-C; Long Eaton (57) – MJS; Woodthorpe (54) – HEB. It seems Meyrick's distribution as 'coastal' is misleading.  
 Jura (102) bred – MRY  
 New Romney (15) 10.ix. – ECP-C  
 Sandwich (15) from larva on *Cerastium semidecandrum*, not previously reared in Britain – DJLA  
 Herm (113) bred – DJLA, *Ent. Rec.*, **95**: 37  
 Woodthorpe (54) 3.viii. – HEB; Life history notes – RJH, *Ent. Rec.* **94**: 134  
 Cramond Island (83) bred – KPB; Notts. (56) – MJS; Sprotbrough (63) – HEB  
 Faringdon (22) – MFVC  
 Worcs. (37) – ANBS; Leckford (12) – DHS  
 Beer (3) – RJH  
 Grays (18) 7.vii.81 – DJLA  
 Worcs. (37) – ANBS; Deneby Ings (63) – HEB  
 Heydon (19) larvae 11.vii. – AME; Faringdon (22) – MFVC  
 Attenborough (56) & Hilton (57) – MJS  
 Worcs. (37) – ANBS  
 Larvae on conifers – T. G. Winter, *Ent. Gaz.* **33**: 229-230  
 Larvae on *Genista tinctoria* – FHNS  
 Larvae on *Acer campestre* – MFVC  
 Reared from *Abies grandis* – MRY  
 Hockwold (28) – JLF; Faringdon (22) – MFVC; Handsworth (39) – RGW  
 Derbys. (57) – MJS

- Lobesia reliquana* Hb. Copperas Wood (19) '81 — AME
- L. littoralis* H. & W. Larvae on *Lotus corniculatus* (45) — JRL
- Ancylis geminana* Don. Alford (54) 20.vi. — HEB
- Crociosema plebejana* Zell. Highcliffe (11) three, xi. — EHW; Newington (15) 9.ix. — P. J. Jewess; Grays (18) 18.x. — DJLA
- Griselda myrtilana* H. & W. Mynydd Prescelly (45) several 30.v. — ECP-C
- Eucosma metzneriana* Treits. Southsea (11) 21.vi. — JRL, *Ent. Rec.* 94: 202
- E. pauperana* Dup. Hockwold (28) bred — JLF
- E. pupillana* Cl. Edwinstowe (56) & Long Eaton (57) — MJS
- Thiodia citrana* Hb. Llandudno (49) 10.viii. — HNM
- Clavigesta purdeyi* Durr. Notts. (56) '81 — MJS
- Blastesthia posticana* Zett. Faringdon (22) — MFVC
- Pammene agnotana* Rebel Fleam Dyke (29) 25.iv. — RJF, *Ent. Rec.* 95: 83
- P. aurantiana* Staud. Matching (19) — AJF
- P. trauniana* D. & S. Faringdon (22) '77 & '82 — MFVC
- Cydia caecana* Schlag. Faringdon (22) '79 — MFVC
- C. compositella* Fabr. Staffs. localities (39) '81/82 — RGW
- C. pallifrontana* L. & Z. Hadstock (19) 29.vi. — AME; Worcs. (37) — ANBS; Herefs. (36) — MWH
- C. orobana* Treits. Stoke Ferry (28) — JLF; Saltfleetby-Theddlethorpe (54) 3.viii. — HEB
- C. pactolana* Zell. Windsor Forest (17 & 22) — T. G. Winter, *Ent. Gaz.* 33: 212
- Dicrorampha alpinana* Treits. Edinburgh (83) — KP B
- D. consortana* Steph. Traeth-y-Mwnt (46) larvae — ECP-C
- PYRALIDAE**
- Euchromius ocella* Haw. Trowbridge (8) 7.x. — G. Smith, *Ent. Rec.* 95: 33
- Crambus uliginosellus* Zell. Loch Log (96) amongst *Carex* — RWJU
- Agriphila latistria* Haw. Notts. (56) '81 — MJS
- Pediasia aridella* Thunb. Needs Ore (11) — DHS
- Eudonia vandaliella* H.-S. Faringdon (22) — MFVC

- Microstega hyalinalis* Hb. Grays (18) – DJLA  
*Udea decrepitalis* H.-S. Talybont on Usk (42) 6.vi.78  
 – P. J. Jewess *Ent. Rec.* **94**:  
 121
- Agrotera nemoralis* Scop. Guernsey (113) – T.N.D. Peet,  
*Ent. Rec.* **95**: 37
- Orthopygia glaucinalis* Linn. breed from pupal detritus (16) –  
 PAS
- Pyralis lienigialis* Zell. nr. Faringdon (22) three –  
 MFVC
- Aphomia sociella* Linn. bred from litter in an outbuilding,  
 unconnected with bees' or  
 wasps' nests – PAS
- Dioryctria schuetzeella* Fuchs Rye (14) – M. W. F. Tweedie,  
*Ent. Rec.* **94**: 220; Ham Street  
 (15) – various recorders
- Alispa angustella* Hb. Grays (18) – DJLA; Dartford  
 (16) 5.x. believed to be a partial  
 third brood – PAS
- Zophodia convolutella* D. & S. nr. Whitstable (15) 30.iv. new  
 to Britain. – JR, publication  
 awaited.
- PTEROPHORIDAE**
- Crombrugghia distans* Zell. Discovery of larva – AME,  
*Ent. Rec.* **95**: 15-18
- Platyptilia calodactyla* D. & S. Bradwell-on-Sea (18) – A. J.  
 Dewick
- Stenoptilia saxifragae* Fletch. Holloway (57) – MJS
- Leioptylus lienigianus* Zell. Long Eaton (57) – MJS
- L. carphodactyla* Hb. Walton-in-Gordano (6) – ECP-C  
 & JRL
- L. tephrodactyla* Hb. Luxulyan '79 & Ladock Woods  
 (2) – FHNS

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CHLOROPHORUS PILOSUS FORST. VAR. GLABROMACULATUS  
 GZE. (COL.: CERAMBYCIDAE) FROM AN IMPORTED CHEESE BOARD.  
 – During the summer of 1981, two friends presented me with an  
 example of the above named species. It had been found dead in its  
 emergence hole in an imported softwood cheeseboard (country of  
 manufacture ? Italy) which had been bought some while earlier  
 in Manningtree, Essex. Powdery sawdust had been noticed in the  
 larder housing the board for some time, but my friends had not  
 identified its source. Unfortunately, fearing infestation of other  
 timber in their cottage, they burnt the board immediately upon  
 discovery of the beetle. The species breeds in dry, deciduous timber  
 and is not uncommon in middle Europe. – D. R. NASH, 266  
 Colchester Road, Lawford, Essex. C011 2BU.

THE FEMALE OF *AGRODIAETUS IPHIGENIA*  
*NONACRIENSIS* BROWN

By JOHN G. COUTSIS\*

When the first two male butterflies of this species were discovered in Greece, they were provisionally identified as *Agrodiaetus damone* Eversmann. (Brown & de Worms, 1975).

Later on, and with the aid of more material, Brown described these butterflies as subspecies *nonacriensis* of *Agrodiaetus iphigenia* Herrich-Schaeffer (Brown, 1977) and included in his description, what he believed, with reservations, to have been the female of this species. He refrained, however, from establishing it as an Allotype.

After six years of painstaking search, a single female of *nonacriensis* was eventually taken by the author on 13th July 1982, at 1600 metres, on a mountain of N. Peloponnissos, Greece.

The superficial characters of this specimen suggest that Brown's questionable female is, within all probability, *Agrodiaetus pelopi* Brown.

The single female of *nonacriensis* may be described as follows (Figs. 1 & 4):

FW length 14mm. Upperside ground colour uniformly dark chocolate-brown. FW with clear white Costa and inconspicuous black discoidal Stria; fringes brown along their proximal half, pure white along their distal half from the Apex to about S6 and whitish from S6 to Sla. Fringes on HW as on FW, but proximal half chequered with dark brown; outer half whitish throughout. Underside ground colour light brown with marked greyish tinge; both wings with light brown fringes and a fine dark brown marginal line; FW with conspicuous, but fuzzy, submarginal black markings and traces of orange-brown lunules, especially in Sla to S4, also present a few traces of antemarginal black spots; post-discal black markings and black discoidal stria as in male. HW with prominent white stripe along V4 and vestigial submarginal markings and orange-brown lunules; post-discal black markings and discoidal black stria, as in male.

The genitalia (Figs. 1a & 4a) are as follows: Eversible Tube entirely diaphanous, with rounded distal end; Ostium Bursae with

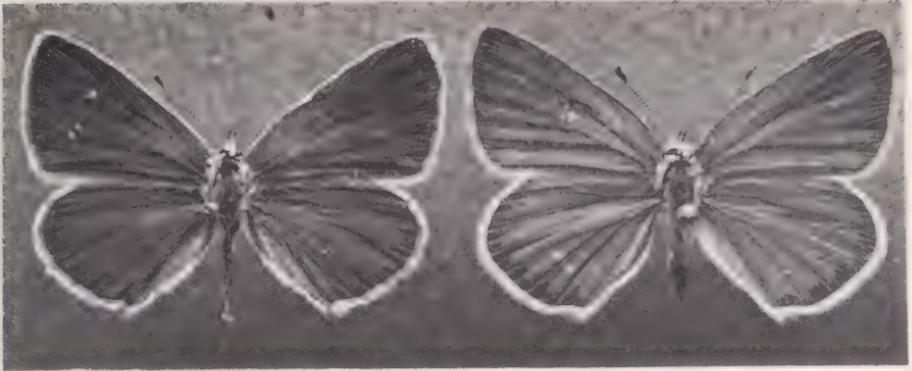
LEGEND

Females of:

*Agrodiaetus iphigenia nonacriensis* Brown: Fig. 1. Upperside; Fig. 4. Underside. Mountains of N. Peloponnissos, Greece, 1600m, 13.vii.1982. *Agrodiaetus pelopi* Brown: Fig. 2. Upperside; Fig. 5. Underside. Mountains of N. Peloponnissos, Greece, 1600m, 13.vii.1978. *Agrodiaetus aroaniensis* Brown: Fig. 3. Upperside; Fig. 6. Underside. Mountains of N. Peloponnissos, Greece, 1600m, 13.vii.1981.

\*4 Glykonos Street, Athens 139, Greece.

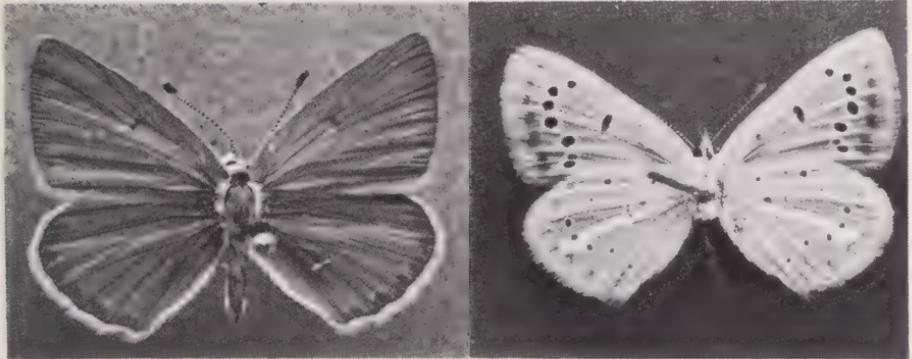
THE FEMALE OF *AGRODIAETUS IPHIGENIA NONACRIENSIS* BROWN



1

2

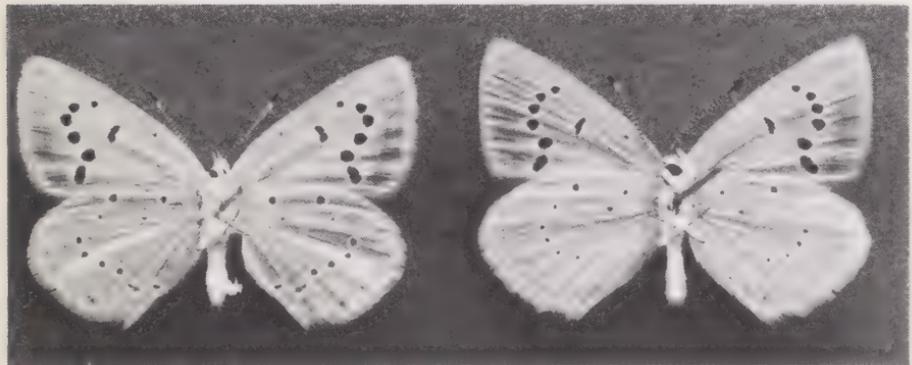
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3

4

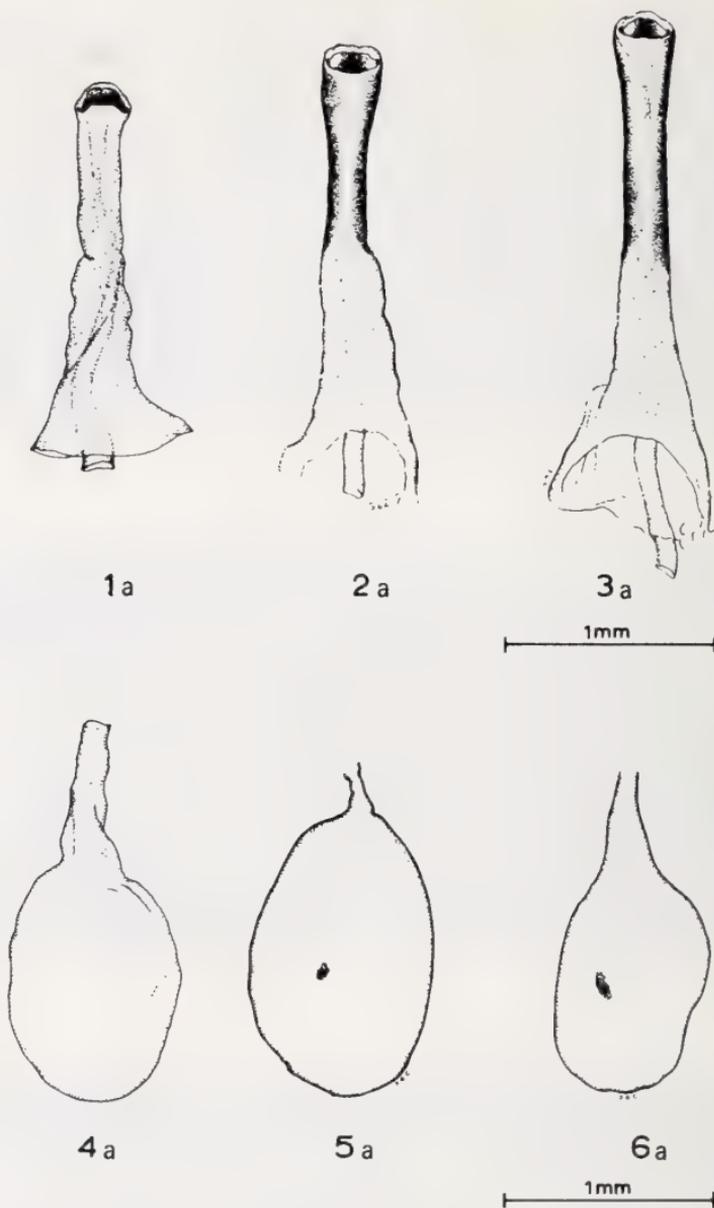
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5

6

1cm



Dorsal view of Eversible Tube of female genitalia of *Agrodiaetus*: Fig. 1a. *A. iphigenia nonacriensis* Brown. Mountains of N. Peloponnissos, Greece, 1600m, 13.vii.1982. Fig. 2a. *A. pelopi* Brown. Mountains of N. Peloponnissos, Greece, 800m, 7.vii.1973. Fig. 3a *A. aroaniensis* Brown. Mountains of N. Peloponnissos, Greece, 1400m, 24.vii.1971.

Corpus Bursae of female genitalia of *Agrodiaetus*: Fig. 4a. *A. iphigenia nonacriensis* Brown. Data as in fig. 1a. Fig. 5a. *A. pelopi* Brown. Data as in fig. 2a. Fig. 6a. *A. aroaniensis* Brown. Data as in fig. 3a.

THE FEMALE OF *AGRODIAETUS IPHIGENIA NONACRIENSIS* BROWN  
sclerotised plate, which is oblong, with down-turned ends; Corpus  
Bursae without Signa.

*Agrodiaetus iphigenia nonacriensis* is sympatric and synchronic  
with *Agrodiaetus pelopi* Brown and *Agrodiaetus aroaniensis* Brown,  
both of which have females that somewhat resemble that of *nona-*  
*criensis*.

The female of *nonacriensis* differs from those of *pelopi* (Figs.  
2 & 5) and *aroaniensis* (Figs. 3 & 6) by: (a) The darker ground  
colour upperside. (b) The pure white FW costa upperside. (In  
*pelopi* and *aroaniensis* it is light beige). (c) The whitish outer half  
of fringes upperside. (In *pelopi* and *aroaniensis* it is light beige on  
HW and light brown of FW). (d) The marked grey tinge of ground  
colour underside, which is absent in both *pelopi* and *aroaniensis*.

It differs from that of *pelopi* by: The uniform ground colour  
upperside, which in *pelopi* is disrupted by the darker veins.

It differs from that of *aroaniensis* by: The presence of a  
prominent white stripe on HW underside, which is either absent or  
vestigial in *aroaniensis*.

The genitalia differ from those of *pelopi* (Figs 2a & 5a) and  
*aroaniensis* (Figs 3a & 6a) by: (a) The entirely diaphanous Ever-  
sible Tube. (In *pelopi* and *aroaniensis* it is sclerotised along its  
distal half). (b) The shape of the sclerotised plate at the Ostium  
Bursae. (Oblong with down-turned ends in *nonacriensis*, oblong  
with straight ends in *pelopi* and *aroaniensis*). (c) The fact that the  
Corpus Bursae lacks Signa. (These are present in *pelopi* and *aro-*  
*niensis*).

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mann) (Lep., *Lycaenidae*) discovered in the Peloponnese.  
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*Lycaenidae* (Lepidoptera) from Greece. *Entomologische Beri-*  
*chten*, Deel **36**: 46-47
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Taxa of the Genera *Agrodiaetus* Huebner, 1822 and *Polyom-*  
*matus* Kluk, 1801 (Lep., *Lycaenidae*). *Entomologist's Gazette*,  
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*the Butterflies of Britain and Europe*. Collins, London.

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ORTHOSIA MINIOSA D. & S.: BLOSSOM UNDERWING AND O.  
OPIMA HBN.: NORTHERN DRAB IN WARWICKSHIRE. — Despite  
the cold spring, on the 8th May 1983 a male *O. miniosa* D. & S.  
appeared here at m.v., and on the 10th May, *O. opima* Hbn. These  
are the first records for these two species for Charlecote in the  
16 years of the light trap being run here. — A. F. J. GARDNER,  
Willows End, 29 Charlecote, Nr. Warwick.

NOTES ON *ULTRAARICIA ANTEROS* FREYER  
(LEP.: LYCAENIDAE) FROM GREECE

By JOHN G. COUTSIS\*

In the *Field Guide to the Butterflies of Britain and Europe* (Higgins & Riley, 1980) it is mentioned that *Ultraaricia anteros* flies in June/early July in a single brood.

In Greece, I have collected fresh specimens of this species from as early as 7th May to as late as 29th September. The time lapse between these two captures suggests that *anteros* is at least double brooded; a view also shared by other authors.

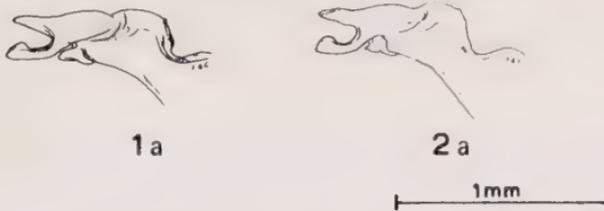


*Ultraaricia anteros* Freyer, male undersides: Fig. 1. Mt. Parnassos, Greece, 2000m, 18.iv.1967. Fig. 2. Mt. Parnassos, Greece, 2000m, 3.vii.1965.

In a recent revisional article of *Ultraaricia* Beuret (Nekrutenko, 1980) a new species of *Ultraaricia* is described from Mts Alibotusch and Pirin, in Bulgaria, under the name of *orpheus*. Amongst the diagnostic characters listed are the morphology of the male genitalia and the presence of a black discal spot on FW underside. In fact, this latter character is also used in a key to the identification of the males of all *Ultraaricia* species recognised by Nekrutenko.

In Greece there fly in sympatry both individuals that possess and that lack the black discal spot on FW underside (Figs. 1 & 2). The genitalia of these two morphs are identical with each

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*Ultraaricia anteros* Freyer, side view of Labides, Falces and Tegumen of male genitalia: Fig. 1a Mt. Parnassos, Greece, 2000m, 18.vi.1967. Fig. 2a. Mt. Parnassos, Greece, 2000m, 3.vii.1965.

other (Figs. 1a & 2a) and it is reasonable to assume that they are conspecific.

In view of this, it is doubted that the presence of a black discal spot on FW underside in *orpheus*, constitutes a valid diagnostic character for differentiating it from *anteros*.

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AUTUMNAL AGGREGATION OF *COCCINELLA UNDECIMPUNCTATA* L. (COL.: COCCINELLIDAE) IN BRITAIN. — In their detailed study of the ecology of *Coccinella undecimpunctata* L. (1970, *Entomologist* **103**: 153-170) Benham & Muggleton stated (loc. cit. p. 157) that winter aggregation of this species had never been reported from the British Isles.

Whilst collecting by the estuary of the River Stour near Harkstead, East Suffolk (TM 1833) on October 25th, 1976, I came across an old, mature, uprooted oak stump which had been washed into the saltmarsh and left stranded — presumably after an extremely high tide. It was now thoroughly desiccated and the bark was at the very loose stage i.e. when it can easily be removed by hand in large, curved 'slabs'. Removing the bark revealed hundreds of *C. undecimpunctata* bunched tightly together, and I was able to pick out one or two interesting varieties. Moving on a little, I encountered many smaller but, nonetheless, noteworthy concentrations (ca. 20-50 individuals) behind slabs of loose sandstone in the remains of the cliffs at Harkstead. From their choice of microhabitat, large numbers and semi-comatose state, there can be little doubt that these aggregations represented beetles which had almost certainly gathered to overwinter together. — D. R. NASH, 266 Colchester Road, Lawford, Essex. CO11 2BU.

## BUTTERFLIES AND HAWKMOTHS OF KUWAIT

By W. AL-HOUTY\*

The State of Kuwait extends between latitude 28°30 and 30°05 N and longitude 46°33 and 48°30 E, and occupies an area of approximately 1800 sq. km. in the northeastern part of the Arabian peninsula. Besides the mainland, Kuwait includes a number of off-shore islands of which only the island of Failakka is inhabited.

The climate is typically arid with temperature ranging from -3°C. to 49°C, and an average rainfall of 118 mm. The topography consists of desert landscape characterised by elevations, wadis (drainage lines), depressions, sand dunes and salt marshes. The vegetation which is poor open scrub of undershrubs, perennial herbs and ephemerals, is controlled primarily by rainfall.

There are published lists of lepidoptera for neighbouring countries, by Larsen (1977), Pittaway (1979a, 1979b) and Wiltshire (1964, 1980), and for Kuwait by Brown (1970).

Excepting those lepidoptera recorded by Mr. J. N. Brown and specified as such, all others stated hereunder as having been captured in the State of Kuwait, were taken by me and are in my collection in the Department of Zoology, Kuwait University.

**Lycaenidae**

*Tarucus balkanicus* Freyer: Little Tiger Blue. Rika, in the southern part of Kuwait City, one 1.x.1980.

*T. rosaceus* Austaut: Mediterranean Tiger Blue. Kuwait City, 4.v.1980, 20.x.1980, 15.xi.1982; Wafra, six v.1980, imbibing at *Zizyphus*; Jahra, one 3.iv.1980; Rika, one 28.ix.1980.

*Zizeeria karsandra* Moore: Small Mauve Blue. Kuwait City, one iv.1980; Wafra, one 13.iv.1982; Failakka Island, two 15.iv.1982.

*Lampides boeticus* L.: Rika, one 5.xi.1980; Wafra, five 13.iv.1982.

*Chilodes galba* Lederer: Desert Small Blue. Kuwait State (Brown, 1970).

*Cupido minimus* Fuessly: Little Blue. Kuwait State (Brown, 1970).

**Pieridae**

*Colias crocea* Geof.: Clouded Yellow. Abundant in Kuwait City, in Khaldiayah, Al-Rabiyah and in Sulaibikhat. Specimens were taken Sulaibikhat, 3.xi.1980; Kuwait City, 23.xi.1980, 20.x.1980; Wafra, 13.iv.1982.

*Colotis fausta* Olivier: Salmon Arab. Kuwait City, one 10.xi.1980, flying in cultivated fields.

*Anaphaeis aurota* Fab.: Capper White. Salmy, one 30.x.1980.

*Pieris rapae* L.: Small White. Kuwait City. Larvae on cauliflower, ii-v.

\*Department of Zoology, University of Kuwait.

*P. brassicae* L.: Large White. Kuwait City.

*P. napi* L.: Green-veined White. Kuwait State (Brown, 1970).

*Euchloe belemia* Esper: Green-striped White. Kuwait City, one iii.1980.

*Pontia glauconome* Klug.: Desert White. Kuwait City, one early iii.1981, imbibing at Crucifer sp.

### Papilionidae

*Papilio demoleus* L.: Swallow Tails. Ahmadi, one specimen only, c. 1978.

### Danaidae

*Danaus chrysippus* L.: Plain Tiger. Abdelli, one 8.iv.1982.

### Nymphalidae

*Cynthia cardui* L.: Painted Lady. Migrant, widespread over State from Abdelli in the north across the centre to Mushriff and Audailyah down to Wafra in the south. Specimens taken, Wafra 10.iv.1980, 13.iv.1982; Sulaibikhat, 4.v.1980; Kuwait City, 3.xii.1980; Fintas, 12.ii.1980; Mina abdullah, 18.ii.1980.

*Vanessa atalanta* L.: Red Admiral. Ahmadi (Brown, 1970).

*Junonia orithya* L.: Pansy Blue. Kuwait State (Brown, 1970).

### Hesperiidae

*Spialia phlomidis* H.S.: Persian Skipper. Ahmadi (Brown, 1970).

### Sphingidae

*Hyles lineata livornica* Esp.: Striped Hawk. Occurs in the central area as at Sulaibikhat and Mushriff, also along the western border and at Al-Salmi. Specimens taken Sulaibikhat, three 10.ii.1980; Salmy, one 27.ii.1980; Kuwait City, 12.ii.1980, 28.iv.1981.

*Macroglossum stellatarum* L.: Humming-bird Hawk. Kuwait City, 5.x.1980, 6.ix.1980, 5.ix.1982. I have no record of it being seen elsewhere in the State.

*Daphnis nerii* L.: Oleander Hawk. Kuwait City, one 1981. Sulaibikhat, four larvae on *Nerium oleander*.

*Acherontia atropos* L.: Death's Head. Kuwait City, a larva on *Clerodendron inerne*: False Jasmine in the British Embassy garden at Shaab, 20.xi.1981, imago bred.

*Hippotion celerio* L.: Silver-striper Hawk. Common in east Kuwait.

### Acknowledgments

This is part of a survey done while holding a grant from the

research council in the University of Kuwait. I also gratefully acknowledge Mr. A. R. Pittaway for help in identifying the lepidoptera mentioned in this paper.

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THE NAME "APRILINA". — The Romans neglected to make use of a separate adjective meaning "of April", but Linnaeus was following grammatical rules in inventing the feminine form Aprilina for his purpose.

I had not given the matter much critical thought before but it had always appeared to me that the poetic suggestion of "spring-like green" lay behind the term. Does anyone feel inclined to agree? I am not happy over the modification of the compound "a-philos" to take a diminutive, as suggested, however. — J. K. C. KEMP, Westlow Cottage, Bates Lane, Souldern, Bicester, Oxon, OX6 9JU.

NOCTUID LARVA AT SUGAR. — Whilst operating a m.v. lamp in a Bedfordshire birch wood on the last and typically cold night of April this year and hoping for a visit from *Odontosia carmelita* Esper (Scarce Prominent), I decided to try some half-hearted sugaring. No moths came to the sugar but a one inch long noctuid larva. This larva with the adult palate was subsequently identified as that of *Polia nebulosa* Hufnagel (Grey Arches). A single *O. carmelita* turned up that night, making the site apparently the third recorded Bedfordshire locality for this species. — K. F. WEBB, 2 Kingsdown Avenue, Luton, Beds LU2 7BU, 16.v.83.

LEDRA AURITA L. (HEM.: LEDRIDAE) CONFIRMED FROM WILTSHIRE. — In 1975, the late C. H. Andrewes published a note recording the Pipunculid *Nephrocerus flavicornis* Zett. from Grovely Wood, near Salisbury, Wilts. (1975, *Entomologist's mon. Mag.* 110 (1974) : 231). He stated that he had not seen its reputed Cicadellid host, the very distinctive *Ledra aurita* L., in that locality or elsewhere in the county.

In over ten years collecting in Wiltshire, I have only met with a single specimen of *Ledra*. Interestingly, in view of Andrewes' comments, it was taken on a live beech trunk in the Chilfinch area of Grovely Wood (SU 0433) on August 4th, 1978. — D. R. NASH, 266 Colchester Road, Lawford, Essex. C011 2BU.

NOTES CONCERNING THE HABITAT OF, AND OTHER  
COLEOPTERA ASSOCIATED WITH, AN EXAMPLE OF  
*AGONUM GRACILIPES* (DUFT.) (COL.:  
CARABIDAE) TOGETHER WITH A REAPPRAISAL  
OF ITS BRITISH STATUS

By DAVID R. NASH\*

In a recent note (Nash, 1982) I briefly reported the capture of an example of the very rare *Agonum gracilipes* (Duft.) in dry gravel workings near Ipswich, Suffolk. As there is (a) an almost total absence of ecological data concerning this species and (b) widespread recognition of the importance of substrate and associated vegetation as major determinants of the presence or absence of particular Carabids in a macrohabitat, it would seem important to detail the other Carabids taken at the same time from the locality. It should not be forgotten, however, that the specimen may not have developed at the site in question, thus rendering such information spurious. Species recorded — chiefly from under stones — were as follows: *Leistus ferrugineus* (L.), *Trechus obtusus* Er., *Olisthopus rotundatus* (Pk.), *Amara aenea* (Deg.), *A. aulica* (Pz.), *A. bifrons* (Gy.), *A. tibialis* (Pk.), *Harpalus schaubergerianus* Puel, *H. affinis* (Sch.), *H. anxius* (Duft), *H. rubripes* (Duft.), *H. rufitarsis* (Duft.), *H. smaragdinus* (Duft.), *Bradycellus harpalinus* (Ser.), *Microlestes maurus* (St.), *Metabletus foveatus* (Fourcroy). Several examples of the bug *Odontoscelis dorsalis* (F.) were also found.

Mr. A. A. Allen has recently deleted *A. gracilipes* from the Irish list and questioned the authenticity of the records from Cambridgeshire and Yorkshire (Allen, 1977). There are recent records of a single specimen at M. V. light in Sussex (Hodge, 1978), and of one flying at Ailsa Craig (Crowson, 1980). Apart from the two aforementioned specimens, the few remaining records are of singletons from the Suffolk and Norfolk coast — for details see Allen (*loc. cit.*) and Morley (1898).

East Anglian coastal localities have probably attracted more attention over the last century and a half than almost any other stretch of the British coastline. It does, therefore, seem most surprising that, despite all this activity over such a lengthy period of time, only a handful of single specimens of *gracilipes* have been found, the majority of captures having been made before the turn of the century.

*Agonum gracilipes* seems to have always been afforded full residential status on the British list. If a species is truly resident then, theoretically, it should be possible, particularly in the case of

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a relatively large Carabid, to collect examples at, or close to, a previously-known site of capture. It is, of course, well-known that some species of insects appear to maintain their populations at an unusually low level of density. In such cases, the species is often only captured sporadically in its known habitats, usually as odd specimens, but occasionally in numbers after a rare population explosion. The published data, however, seem to refute the possibility of *gracilipes* belonging to this latter group of species, and the late Carl Lindroth has suggested (Lindroth, 1974) that our specimens were 'probably stragglers' (*op. cit.* p.83) — a view with which I concur.

In the light of the published evidence, it might perhaps be more appropriate to asterisk *gracilipes* in our 'Checklist' (Kloet and Hincks, 1977) although the beetle does not fulfil, in full, the criterion for that symbol (*op. cit.* page v), in that it is not 'of fairly regular occurrence'.

### Acknowledgements

I thank Mr. A. A. Allen for confirming my determination of the specimen of *Agonum gracilipes* and also a specimen of *Odon-toscelis dorsalis* taken from the same habitat.

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[Mr. Nash's thesis concerning the British status of *A. gracilipes* is eminently reasonable, and I would support it. The fact is that no one has really made a serious attempt as yet to identify the

probable non-resident immigrants in our beetle fauna, and the cautious and perhaps sometimes over-sparing use of the asterisk indicating these in the 'Check List' may be justified by the lack of hard evidence in most cases. The concentration of such a high proportion of the few captures of *gracilipes* in such a short stretch of the Suffolk coast is striking and curious. Do the beetles come from the Dutch and Belgian coastal area? Assuming they do occasionally fly across, what keeps most of them to such a narrow flight-path? Or do they reach us by what have been called floating bridges (driftwood etc)? One really needs to know something of the habits and distribution of the species on the parts of the Continent nearest to us, and whether it is known (or thought) to be migratory there — a point on which there is, I believe, no information.

My doubt (referred to by Mr. Nash) about the Hornsea record was merely because Fowler tells us that the specimen was lost before it could be properly identified; while again, the Cambs. one can hardly be considered quite certain unless supported by a published record. Was the beetle securely determined? It seems rather unlikely that Dr. Moore himself had seen it. Still, the record is *probably* correct, and if so is likely to be the most inland of the British captures. Also, when I wrote, the Yorks. one was much the furthest north and isolated from the rest; but now, that on Ailsa Craig (the sole authentic one for the west of Britain) renders the Yorks. one far less unlikely, while itself the most remarkable and isolated of all. — A. A. A.]

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SPRING EMERGENCE OF *LARICOBIVS ERICHSONI* ROSENHAUER COL.: DERODONTIDAE). — Hammond & Barham have recently added this interesting species to our list (1982, *Entomologist's Gaz.* 33: 35-40), on the basis of specimens taken in Suffolk during the months of May and July. In an attempt to ascertain if the life cycle of *erichsoni* is the same in this country as described by Franz for south Germany (*vide* Hammond & Barham loc. cit. p. 37), I visited the Shrubland Estate, Coddendam, Suffolk on April 19th, 1982. i.e. one month earlier than any published capture date for the species in Britain. Beating Spruce and Douglas Fir resulted in small numbers of *erichsoni* dropping onto the tray — no more than two or three individuals at any one time. This contrasted strongly with my experience of the species in the same locality in the last week of May in 1980, 1981 & 1982, when it occurred very commonly. This would indicate that the species does have the same life cycle here as on the continent, overwintered individuals beginning to appear on the branches in mid-April and peak numbers being found towards the end of May. At the present time, no-one in this country appears to have reported finding the new generation (resulting from the hibernated individuals) in numbers in the year of their conception. — D. R. NASH, 266 Colchester Road, Lawford, Essex. CO11 2BU.

## ABNORMAL MORPHOLOGY AND VENATION IN SAWFLIES (HYM., SYMPHYTA)

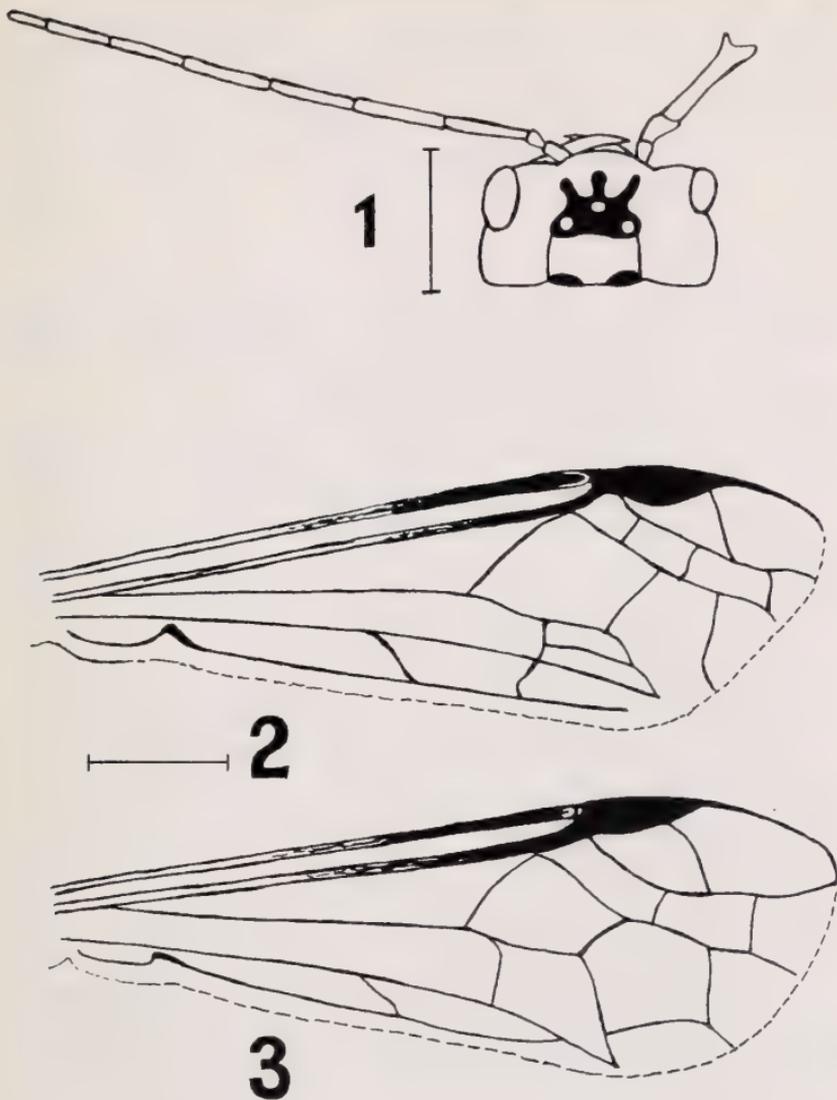
By A. D. LISTON\*

Examples of teratology in specimens of Hymenoptera Symphyta are not rare, and have been recorded for most families and genera (Wolf, 1966; Zirngiebl, 1966). Malformation of legs and antennae account for the greatest proportion of cases reported in the literature. The head capsule is probably the next most affected area, then the abdomen, but only rarely the thorax itself. Gynandromorphs are also frequently observed (Nuorteva & Kontuniemi, 1972). As in the Lepidoptera, not only the genitalia may be affected but also body parts that exhibit secondary sexual characters, such as the antennae (Chevin, 1973).

On 12.8.1981 I beat one female and two male *Dineura viridorsata* (Retzius) out of birch at South Park Wood, near Peebles, Peebleshire (NT 235402). The female proved to be teratological. Its right-hand compound eye (viewed dorsally) is abnormally small, though approximately normally shaped, and the right antenna, which shows no sign of post-emergence damage, comprises only three misshapen segments (Fig. 1). These seem similar types of deformity to those recorded by Moller (1975) in a female *Hemichroa crocea* (Geoffroy).

Extreme abnormality of venation, however, seems much more frequent in some groups of sawfly than in others. Particularly affected are some Siricidae, Xiphydriidae and Blennocampinae of the Tenthredinidae. Venation of some other groups varies slightly so that, particularly in the northern species of Nematinae (Tenthredinidae), additional veins may be present in some specimens. Such variation most often involves the number of cross-veins present in the forewing. Frequently only one wing is aberrant, making the specimen asymmetrical. However, I have seen several specimens of *Ametastegia* and *Allantus* species (Blennocampinae of Tenthredinidae) in which venational abnormalities are more extreme than this. Most unusual is the right forewing (Fig. 2) of a female *Allantus cinctus* (L.) trapped by Prof. H. Pschorn-Walcher in the grounds of the Commonwealth Institute of Biological Control's research station at Delémont, Canton Jura, Switzerland, on 7.8.1976. This has three superfluous veins: 1 in C1+C2, 1 in B1, and 1 distally in the anal cell. (Nomenclature of Muche, 1967-70). In addition both the anal cell and cell B2 are open distally because of absent venation (compare Fig. 2 with Fig. 3 which illustrates a normal wing). The left forewing and both hindwings are normal. Hoop (1968) mentions

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Figs. 1-3 — 1, head of adult female *Dineura virididorsata* (Retzius) with deformed right antenna and under-developed eye; 2, right forewing of *Allantus cinctus cinctus* (L.) with abnormal venation; 3, normal venation of *A. cinctus*. Scale lines = 1mm.

and figures several similar examples in the genera *Apethymus*, *Prottemphytus* and *Ametastegia* (all Blennocampinae).

It seems possible that the relatively high incidence of deformed venation in these genera might result from the sites chosen for overwintering and pupation. Most species overwinter without a cocoon in the earth, or in bark, rotten wood, plant stems, etc. Possibly the developing wings may be more prone to slight damage

under such conditions than in species which build a cocoon for overwintering. It is interesting to note in this connection that highly aberrant venation also occurs not infrequently in the wood-boring families Siricidae and Xiphydriidae. Deformity of other body parts is not apparently more common in the above groups than in the rest of the Symphyta.

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## Notes and Observations

LACANOBIA BIREN GOEZE: GLAUCOUS SHEARS: AN UNUSUAL RECORD. — During a recent illness I have been re-arranging my Noctuid Cabinet. Among the *Lacanobia biren* Goeze (*Hadena bombycina* Hufn.) was a specimen taken in Cornwall on 7th. June, 1970. I am sure I did not record this at the time, but as it was a most unusual capture it should be recorded. All my other specimens came from Aviemore, Scotland. I was staying at a Hotel on the sea front of West Looe and set up a trap on the balcony outside the bedroom french windows. My diary mentions only a few other common species taken with the Glaucous Shears. This appears to be a very unlikely locality for this species and I would like to know if it has been recorded in the south-west on any other occasion. There is no doubt of the identification, verified by Dr. J. V. Banner.

Incidentally, while strolling along the sea front the same morning I saw a butterfly coming in from the sea from the direction of Looe Island which settled on the beach in front of me. It was *Euphydryas aurinea* Rott. The butterfly I assumed must have come from a local colony, perhaps on Looe Island. — R. C. DYSON, 58 Stanford Avenue, Brighton, E. Sussex, BN1 6FD.

*CALOTEPHRIA SALICATA* HBN.: STRIPED TWIN-SPOT CARPET AGAIN IN SURREY. — On the night of May 31, 1982 I took from my light trap at Bramley a dark grey Carpet moth which I wrongly assumed to be an example of the suffused aberrational form of *Xanthorhoe fluctuata* L., of which typical forms were also in the trap. More careful examination belatedly shows that it is a rather dark male *C. salicata*. The only previous record of this species in Surrey appears to be of one found by the late J. L. Messenger on May 22, 1962, at Wormley Hill, near the spot where his garden light trap had been run on the previous night (*Ent. Rec.*, 74: 175). This specimen, a male slightly less dark than mine, is now in his collection presented to the British Entomological and Natural History Society.

*C. salicata* is known in Britain as an inhabitant of hill and mountain country, where its larval food is said to be various species of bedstraw (*Galium verum*, *G. saxatile*, *G. mollugo*). It is widespread in Scotland and northern England, and has been recorded in Wales as far south as Radnorshire; South in various editions says that it has been found not infrequently on Dartmoor and Exmoor and once in Dorset; Turner (1955) mentions in Somerset records at Cannington in 1954 and Weston-super-Mare, 1955. In Sussex C. R. Pratt quoted with reserve two records from near Midhurst and one at St. Leonards-on-Sea; but he has now kindly investigated these further and is satisfied that they are mistaken. It is locally well spread from north to south in Ireland.

The origin of the two Surrey specimens must remain speculative. J. L. Messenger suggested that his might have been vagrant immigrant, or an unwilling deportee, perhaps brought in by a neighbouring gardener. The dates, both in 1962 and 1982, coincide with those of immigration of other species across the Channel; but the nearest places of residence of the species on the Continent appear to be in the Belgian Ardennes. Another possibility, still to be investigated, is that *C. salicata* may indeed be a "Surrey Alpine", with colonies above the 600 feet contour from which strays may occasionally reach light traps several miles distant at lower levels, as happens with *Diarsia dahlii* Hbn., *Hepialus fusconebulosa* de Geer, and some other species. — R. F. BRETHERTON, Folly Hill, Birtley Green, Bramley, Guildford, Surrey GU5 0LE.

CONCERNING OBSERVATIONS ON *PRECIS OCTAVIA* CRAMER IN NATAL, S. AFRICA. — The observations concerning *P. octavia* recorded by Mr. B. K. West (*Ent. Rec.* 95: 6) are precisely those which stimulated me to commence research in the field of seasonal polyphenism in african *Precis* butterflies. Many similar observations were reported in the entomological press early this century and more recently by Clarke & Dickson (1956) also at Durban, Natal.

Experiments with any insect which exhibits seasonal polyphenism must be carried out using controlled environmental conditions, preferably electronically controlled. This was the case with the last series of investigations which I carried out in England during 1975, using *P. octavia* larvae which I had collected from the hills around Byrne, near Richmond, Natal. This work was reported

at the RESL Symposium on Butterfly Biology held in London in September 1981, the proceedings of which should be published later this year.

Unless I am mistaken, the several insects mentioned by Mr. West, although perhaps maintained in similar containers in the one locality, will have pupated at different times of the day and will have experienced different temperatures at the susceptible period when the initial chemical reactions prior to pigment formation are influenced by temperature.

In insects of approximately the same age the emergence of the *f. sesamus* butterflies would also be expected to occur after that of *f. natalensis*, because the rate of development is related to temperature, lower temperatures slowing down the rate of development. — L. McLEOD, Quartier des Ecoles, 84330 St. Pierre de Vassoles, France.

PARORNIX SCOTICELLA STANTON (LEP.: GRACILLARIIDAE) IN KENT. — From leaves containing 'Phyllonorycter-type' mines collected 1.x.1982 on a *Malus* which adjoins the tiger pens at Howletts, Nr. Littlebourne, I have bred five specimens of this species between 27.ii and 10.iii.1983; all left the leaves, preferring to pupate in the tissue paper.

I understand this record is the first confirming its presence in vice-county 15 (East Kent). — N. F. HEAL, Fosters, Detling Hill, Nr. Maidstone, Kent.

MONOPIS WEAVERELLA (SCOTT), A CONTINUING MYSTERY. — Since the history of this tineid moth was reviewed by Bankes (1910, *Entomologist's mon. Mag.* 46: 221-228), *Monopis weaverella* has been found, often commonly, in many parts of mainland Britain and in Orkney. It is most common in wooded country and on heaths and moorlands, especially in the Scottish highlands. In 1953 (*Bull. ent. Res.* 44: 744) Woodroffe reported that he had reared it twice from pigeons' nests, both from the centres of large towns, and once from a jackdaw's nest in the country. Through the helpful agency of Mr. R. G. Adams I have been able to examine two of these specimens, which are in the collection of the M.A.F.F. Slough Laboratory, one from a pigeon's nest from Russell Square, London and one from a jackdaw's nest from Flatford Mill, Suffolk. I was not surprised to find that both were *Monopis rusticella* (Huebner), an abundant species in birds' nests.

In the British Museum (Natural History) general collection is a specimen of *Monopis weaverella* bred in 1935 by H. M. Edelsten from a hedge-sparrow's nest at Balcombe, Sussex. This is apparently the only genuine breeding record of this species, but it was surely an aberrant event. Old birds' nests are collected so frequently not only for moths but for fleas and other fauna, but with this one exception *weaverella* has not been bred this way and its normal food material remains a mystery. The solution may come from whoever is prepared to collect detritus of many kinds, however unpleasant, or perhaps to put out various materials as bait. — E. C. PELHAM-CLINTON, Furzeleigh House, Lyme Road, Axminster, Devon. EX13 5SW.

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# THE ENTOMOLOGIST'S RECORD

## AND JOURNAL OF VARIATION

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**Wanted:** Set specimens of the following butterflies:- Pale Clouded Yellow *Colias hyale* and Bath White *Pontia daplidice* both with British data; also Grayling *Hipparchia semele* and Scotch Argus *Erebia aethiops*, both with Yorkshire data. Please state condition as well as price asked.

M. Densley, Clifton Park Museum, Rotherham, South Yorkshire.

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*Joint Committee for the Conservation of British Insects  
Butterfly Survey 1983*

National surveys of the Marsh Fritillary (*Euphydryas aurinia*) and High Brown Fritillary (*Argynnis adippe*) are being carried out in 1983. A note in this journal requesting old and new records for the two species has produced an excellent response from subscribers. We would like to thank all those who have contributed to the surveys so far, and to remind those who have not yet sent in their records, that we will be most grateful to receive them. All records will be treated with discretion and acknowledged in the concluding report.

Please reply to: D. J. Simcox  
c/o Furzebrook Research Station  
Wareham  
Dorset BH20 5AS.

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GRONOPS INAEQUALIS BOHEMAN  
(COL: CURCULIONIDAE):  
A WEEVIL NEW TO BRITAIN

By LAURENCE CLEMONS\*

Amongst a bag of material swept after dark on the evening of August 3rd 1982 from Murston, North Kent were a number of weevils bearing the general appearance of a *Gronops*. However, they differed from the hitherto sole British species *Gronops lunatus* (Fabricius) in being larger, more robust and of a much darker colour. On the advice of Mr. A. A. Allen I took a specimen to Mr. R. T. Thompson at the British Museum (Natural History) who, in turn, submitted it to Dr. Dieckmann of Eberswalde, East Germany where it was determined to be *Gronops inaequalis* Boheman.

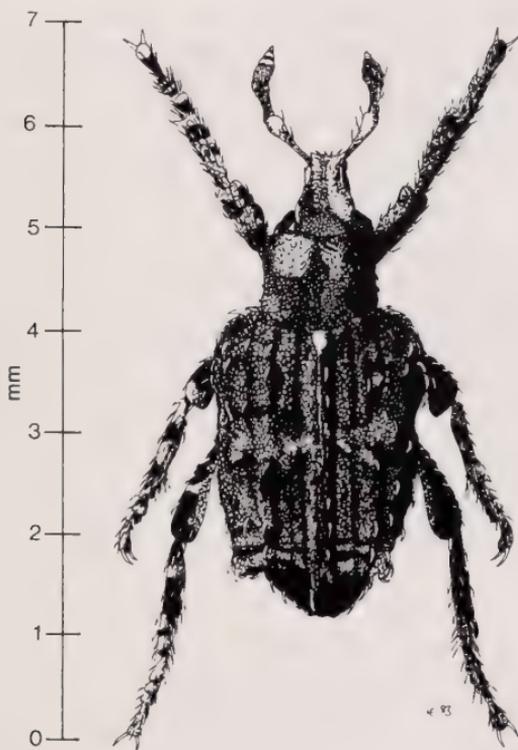


Fig. 1 *Gronops inaequalis* Boh.

In a covering letter Dr. Dieckmann explained that this species was found in Warsaw in 1945 and thence in Sweden in 1946, Bornholm Island in 1954 and Denmark in 1960. A specimen has also been seen from Holland and in parts of East Germany the insect

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is quite abundant. It is mainly active by night and spends the daytime in the soil beneath its foodplant. Although it is probably a polyphagous species it has been found to be closely associated with *Chenopodium album* L. on the continent.

On the evening of August 13th 1983 I revisited the site at Murston in the company of Mr. John Parry with the aim of finding more specimens and elucidating its main foodplant. Chamomile, a reputed host plant for another continental *Gronops* species, was quickly dismissed. Within a short period Mr. Parry found a specimen of *inaequalis* together with *lunatus* on the soil beneath a mat of *Spergularia marina* (L.) Griseb. Eventually it was decided that the occurrence of *inaequalis* under *Spergularia* was most probably accidental and our attention was diverted to *Atriplex prostrata* DC. which was growing with the *Spergularia*. Large numbers of *inaequalis* were subsequently found, not only on the soil surface beneath *Atriplex* but also at the roots, especially when pure stands of the plant were investigated.

The whole insect is illustrated in figure 1 and the typical forms of both our *Gronops* species are so distinct that confusion is unlikely to arise. Nevertheless a brief description of both species is given below as there is always the possibility that a further species may be found in these islands as well as hybrid forms of *inaequalis* and *lunatus*.

#### *Gronops inaequalis* Boh.

Size larger, the length measured from the base of the rostrum to the apex of the elytra ranging from 3.96 to 4.72 mm. Width at shoulders 1.47 to 1.9 mm (measured on 15 specimens). Frons with a wide, coarsely punctured depression, deepest at the base, which extends some half way towards the apex of the rostrum. Upper margin of eye strongly raised. Rostrum, in profile, sharply angled above tip of antennal scrobe; dorsally with two more or less regular rows of strong brown setae. Pronotum with three deep foveae in apical half, the middle one extending back to the base as a wide sulcus; closely and coarsely punctured and with scattered scales and brown setae.

Elytra with conspicuous rows of tubercles bearing strong, curved spines which are mainly white in colour. Two prominent lateral tubercles at apical tenth to fifth beyond which the elytra are abruptly tapered. Ground colour dark with conspicuous patches of light scales at the middle and at the level of the lateral tubercles; the central patches appearing as lunules to the naked eye.

Abdomen beneath uniformly clothed with white setae.

Legs with variegated pattern of scales and somewhat densely clothed with coarse setae.

#### *Gronops lunatus* (Fabr.)

Size smaller, length 3 to 3.5 mm (based on Joy (1932)). Frons with a shallow depression between the eyes and entirely covered

with relatively large scales. Upper margin of eyes not raised, confluent with vertex. Rostrum, in profile, more smoothly curved above tip of antennal scrobe.

Pronotum more parallel-sided and narrower than in *inaequalis*; the three foveae less pronounced.

Elytra without the prominent rows of tubercles of *inaequalis*, although raised ridges bearing coarse white setae are discernible. Lateral tubercles smaller and the elytra beyond these are more gradually tapered. Each elytron with a conspicuous pattern of light and dark bands, without small white lunules at the middle.

Abdomen beneath with white setae.

Legs more or less as in *inaequalis*; ground colour paler. Scales more uniform in size in *inaequalis*.

In view of the essentially nocturnal habit of *Gronops* species in general, *G. inaequalis* may already be widely established in this country, having gone unnoticed until the present. It is therefore hoped that further records will be forthcoming, since the extent of its distribution may shed some light on how long it has been with us. It will be pertinent to note that the area at Murston lies close to the heart of the Sittingbourne paper industry which utilises wood pulp shipped from Northern Europe, in particular Sweden.

A series of five *Gronops inaequalis* has been presented to the British Museum (Natural History).

### Acknowledgements

In addition to those gentlemen mentioned above, I wish to acknowledge the help of Mr. E. G. Philp in the quest for an identity to my initial specimens of the beetle.

### Reference

Joy, N. H. 1932. *Practical Handbook of British Beetles*, Vol. 1 p.208.

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COMMOPHILA AENEANA HBN. (LEP.: COCHYLIDAE). — On the afternoon of 11th June 1983, under cloudy but bright conditions, I noticed and caught a specimen of this scarce and attractive species. The habitat was the lower slopes of railway cutting through chalk, near Dunstable in Bedfordshire. — K. E. WEBB, 2 Kingsdown Avenue, Luton, Beds LU2 7BU.

THE SCARCE MERVEILLE DU JOUR: MOMA ALPIUM OSBECK IN SUSSEX. — On the night of 2nd July 1983, I accompanied Mr. Steve Church to a large forest in Sussex, where we had four specimens of the above noctuid to light. — D. DEY, 26 Manor Avenue, Hassocks, West Sussex.

*THAUMETOPOEA PROCESSIONEA* (LINN.)  
(THE OAK PROCESSIONARY MOTH) :  
THE IMAGO RECORDED IN BRITAIN,  
TOGETHER WITH OTHER RARE MIGRANTS  
FROM CORNWALL.

By A. P. FOSTER \*

On the night of 19/20th of August 1983 a single very worn male of *Thaumetopoea processionea* was taken in my m.v. light trap at Mawnan Smith, Cornwall. This appears to be the first recorded occurrence of the adult in Britain and probably the first genuinely British example. The species was originally reported from this country during the last century by Batchelor (1874), when he claimed to have found a quantity of pupae in an old magpie's nest in a tall pine tree at Ashour Wood, Kent in 1873. It was on the basis of this record that the species was included in Kloet & Hincks (1972). However, these examples were reported under dubious circumstances and were only very doubtfully regarded as genuinely British, see Allan (1943) and Chalmers-Hunt (1962-68).

This species is known from Central and Southern Europe and Asia Minor. The larvae are gregarious, feeding on the leaves of oak and on occasions the caterpillars can reach such high density to be destructive. It would seem highly likely that the individual taken in Cornwall was a casual immigrant, particularly as three other scarce migrant species were taken in the trap on the same night : *Ostrina nubilalis* Hbn. (one male), *Lymantria dispar* L. (one male) and *Mythimna loreyi* Duponchel (one female). In addition, on this night I ran an actinic trap at Kennack Sands on the Lizard Peninsula from 21.21 hours on the 19th to 00.54 hours on the 20th, here a fresh male *M. vitellina* arrived at 22.36 hours.

On the following night of 20/21st August the m.v. light was again operated at Mawnan Smith, this resulted in two further noteworthy migrants being recorded : *Palpita unionalis* Hbn. (one male) and *Rhodometra sacraria* L. (one female).

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Kloet, G. S. and Hincks, W. D., 1972. A Check list of British Insects (Edn. 2). *Handbk Ident. Br. Insects* 11 (2): viii, 153 pp.

\* c/o Nature Conservancy Council, 19/20 Belgrave Square, London, SW1X 8PY.

RECORDS OF COLEOPHORIDAE (LEP.)  
IN NORTH WALES

By H. N. MICHAELIS\*

In the records available to me, there are few from the five Watsonian vice-counties of north Wales and these are mainly from the Annual Report and Proceedings of the Lancashire and Cheshire Entomological Society from 1930 to the mid-1950s by W. Mansbridge, B. B. Snell and R. Prichard, all deceased. Records were kindly supplied by Mrs. M. J. Morgan from the cards at the UCNW at Bangor and the bulk are from my observations of species mainly reared from larvae. I am indebted to Dr. J. D. Bradley of the British Museum for his kind help with identifications.

The Watsonian vice-counties are indicated by their numbers as follows:— Merionethshire (48), Caernarvonshire (49), Denbighshire (50), Flintshire (51) and the isle of Anglesey (52). These are covered by the Ordnance Survey map sheets 23(SH) and 33(SJ) apart from an occasional mention of Cardiganshire (46) in west Wales. Months of occurrence of various stages are shown as i - xii.

The larvae in their later instars construct portable cases of silk and vegetable matter and these are moved freely around their food-plant. Leaves are attacked on the underside by the larva extruded from the case, making blotch mines with an almost central puncture; one larva will feed in a number of mines. Such mines are easily seen on plants with fair sized leaves but are more difficult to find on those with small leaves such as *Thymus* and *Stellaria*. Apart from two common species feeding on seeds of *Juncaceae*, larvae feeding on flowers and seeds especially those incorporating a floret in the case are more difficult to see and are to be found by the hit-or-miss method of gathering a sample of seedheads; a hole in the side of seed will indicate the presence of a larva. Many species hibernate as full-fed larvae and pupate within the case; many of the hibernating larvae of salt-marsh species are frequently inundated by sea water without a noticeable diminution of numbers, a condition noticed among some Crambinae (Pyrilidae) species living in similar situations.

While it is preferable to rear moths, for cases are always a useful guide for identification, a bee-smoker is effective on a summer evening if care is taken against possible fires. For those prone to insomnia, the hour after sunrise gives good results providing there is not a heavy dew. Between 4 to 5.30 a.m. on a June or July morning many species are flying; additionally Elachistidae, Pterophoridae, Pyralidae and to a lesser extent Gelechiidae are on the wing. Strong coffee and biscuits are a necessary, almost vital, preparation for such early activity — alcohol is mainly counter-productive.

\*5 Glan-y-Mor, Glan Conwy, Colwyn Bay, LL28 5TA.

*Coleophora lutipennella* (Zell.) Widespread throughout but not plentiful; mature larvae on *Quercus*, v-vi.

*C. flavipennella* (Dup.) Easily confused with the previous species, the only authentic specimens are from 49 & 50, det J. D. Bradley; larvae on *Quercus*, v. & vi.

*C. gryphipennella* (Hbn.) Plentiful throughout; the moth flies at sunset and sunrise in vi & early vii; larvae on *Rosa* species including *Rosa pimpinellifolia* but not observed on garden roses, ix-v.

*C. serratella* (L.) Larvae plentiful throughout, mainly on *Betula* less so on *Alnus*, *Ulmus*, *Corylus* and *Sorbus*, x-v.

*C. cerasivorella* Packard. Larvae widespread but never plentiful, on *Crataegus*, *Prunus spinosa* and once on *Prunus padus*, viii-vi; the moth flies shortly after sunrise also at sunset, vii. One on *P. avium* in 50, 1983.

*C. milvipennis* (Zell.) Larvae on *Betula pubescens* on eastern moorlands of 50 and 51. Mature larvae were found in late ix and early x, well concealed on lower leaves of smaller bushes and should be overwintered in a sleeve outside; no sign of feeding was seen in the following spring.

*C. siccifolia* Staint. Larvae found occasionally on upper leaves of *Betula pubescens* in 48, 49, 51 and Cardiganshire (46) in vii, viii & ix; it is most difficult to rear even when overwintered out of doors. I am uncertain of the status and distribution in Britain and think it must be an uncommon species.

*C. viminetella* Zell. Larvae are plentiful throughout on *Salix* species, viii-v; the moth flies at sunset and sunrise in vi.

*C. vitisella* Gregson. Though *Vaccinium vitis-idaea* is local but well established where found in north Wales, I have found only one case in 51, while in neighbouring Cheshire (58) the moth is well established in the few places on high ground where the plant occurs. This is an interesting species to rear on a potted foodplant if the primary case is taken in iv, for it has a spring diapause while the evergreen leaves fall in iv/v until the new leaves mature. If the plant is kept out of doors, moths will emerge the following year after feeding in summer and the following spring. Sometimes pupates on upper surface of a leaf.

*C. juncicolella* Staint. Overwintered larvae may be beaten in 48, 49, 50 (and probably elsewhere) from heather in iv-v. The moth flies in the late afternoon but is more readily seen at sunrise.

*C. orbitella* Zell. Larvae are occasional in 51 on mossland *Betula*, ix-x; the mine is smaller than that of *milvipennis* and the larva seems to frequent more mature trees. To rear, it is essential to sleeve larvae on a growing branch until late iv.

*C. albitarsella* Zell. Larvae local on *Calamintha* on limestone in 49, ix-v. It was found that these larvae would not feed on *Origanum* (a listed food), and I have not found signs of feeding though the plant is fairly common in the area. Has the larva been reared on

*Origanum* for, in May, the early stages of both plants appear alike, but are easily distinguished by the scent of crushed leaves? When full grown the case is attached to a nearby stone or debris on the ground.

*C. spissicornis* (Haw.) Occasional moths recorded in 49 and 50, vii. The foodplant is given as *Trifolium repens*.

*C. deauratella* L. & Z. Moths occasionally taken in morning or in a light trap in 49 and 52, vii. *Trifolium pratense* is the recorded foodplant.

*C. lineola* (Haw.) Occasional full grown larvae were found on lower leaves of *Marrubium vulgare* on limestone in 49 and 50, v-vi. The abandoned mine turns pale brown and is a good indication of larval presence: pupation is on the main stem just above the root.

*C. lithargynella* Zell. Well grown larvae are fairly common but difficult to find on the undersides of leaves of *Stellaria holostea* in 48, 49, 50 and 52 from iv-vi. Larvae were found and reared on a "mouse-ear" *Cerastium* species growing in hedgerows in 50, iv.

*C. laricella* (Hübner.) Larvae are plentiful throughout and easily beaten from established larch, iv-v.

*C. lixella* Zell. The moth is widespread on limestone in 49, 50, 51 and 52, usually flying in early evening; vi-vii occasionally v. In the early instars, the larva feeds on *Thymus* changing to unidentified grasses from which it cuts a further case; the few larvae found were on grasses adjacent to *Thymus* growing on small ledges or in crevices; iv/v. Larvae will feed on a selection of garden grasses (since found in 51).

*C. albidella* (D. & S.). The characteristic pistol-shaped cases are locally common near the coast in 52 on *Salix atrocinerea* group and *S. repens*, and are occasional in 50 & 51; iv-vi. Often pupates on the upperside of leaves.

*C. pyrhopipennella* Zell. Widespread among *Calluna* and *Erica* on mosses and high ground and flies in the evening sun, vii. The keeled slender black case is easily beaten from the heather in v, in ix & x, cases may be found on *Erica*, feeding on the underside of the upper leaves; when, by hanging down, they appear opposite to the upright leaf growth — best seen by lying on the ground.

*C. albicosta* (Haw.). Common among *Ulex europaeus* and *U. galii*, flying in early evening. Larva in case made from part of the flower and not of the seed pod as sometimes stated; feeds on seeds and hibernates full fed, vii-iv. Usually pupates on a branch but occasionally on grass stems under the bush where it is more easily seen, iv-v.

*C. saturatella* Staint. Reported in *Ent. Weekly Intelligencer*, 2: 55 as having been found in 1856 at Llangollen (50); and from same locality by C. S. Gregson, in 1860.

*C. genistae* Staint. One case on *Genista anglica* near Cors Geirch (49) but not reared, v. A suspected mine on this local plant was seen in east 52, ix.

- C. discordella* Zell. Common throughout among *Lotus corniculatus*, vii. White blotches on leaves indicate presence of larvae.
- C. striatipennella* Nyl. Occasional specimens in wet places in 50, 51 and 52, vii-viii. The foodplant *Stellaria* was not noticed in the wetland, but *Myosoton aquaticum* was usually present though no larvae were found.
- C. inulae* Wocke. Restricted to one locality near Deganwy (50) now unfortunately destroyed by building. The long larval case was found in varying sizes on the undersides of leaves of *Pulicaria* from v-viii. Larval growth is spread over two years. It is most difficult to rear even on a potted plant, for many overwintering larvae die. Usually pupates low down on the stem of the foodplant, though occasionally on stems of other plants growing nearby.
- C. troglodytella* (Dup.). Occurs in all vice-counties, but is locally plentiful among *Eupatorium* and *Pulicaria* in 52, and comes to light, vii-viii. Larval cases are easily found on lower leaves of *Eupatorium* in iv-v. There is variation in the length of the mature cases, though they never approach the length of a mature *inulae* case.
- C. peribenanderi* (Toll). Local in 49 and 50. The cases are most easily found in ix & x, on *Cirsium arvense* and *Carduus tenuiflorus* near the sea, and are readily detected by the conspicuous whitish mines. Most larvae hibernate full-fed and must be kept outside until v. I have seen cases attached to stems of grasses, brambles and Burnet Rose occasionally during winter.
- C. paripennella* (Zell.). Larvae are locally common throughout on *Centaurea nigra*, especially on lower leaves in v & vi. The moth is rarely seen during the day but will come to light, vi-vii.
- C. benanderi* Kanerva. The commonest saltern *Coleophora* in all vice-counties, flying at sunset and after, vii-viii; larvae collected in late ix & x from seeds of *Atriplex*, are easily reared if kept out-of-doors until vii.
- C. sternipennella* (Zett.). Two specimens in vii, 1966, from waste land near Llandudno Junction saltmarsh (49), flying among *Chenopodium album*, and a few seen there subsequently. Identified by J. D. Bradley.
- C. versurella* Zell. A few moths were found on the saltmarshes of the Conwy estuary (49) in vii/viii in 1960/80, and though *Atriplex littoralis* and *A. hastata* are common there, no identified larvae have been found. Determined by J. D. Bradley. Unfortunately, the localities for this and the previous species may be destroyed by the present construction of the North Wales Expressway. However, it is possible that *versurella* also occurs on the Lavan sands (49).
- C. adpersella* Ben. Locally plentiful on salterns in 49 and 50, occasional in 52, and the distribution suggests that it has long been established. The moth flies readily in early evening in vi-vii and may be found paired at sunset. The whitish larval case is found principally on *Atriplex littoralis*; also on seeds of *Halimione* and more

rarely on seeds of *Beta maritima*, from viii-x; it overwinters as a full-fed larva and the cases must be frequently submerged by high tides with no obvious effect on the subsequent numbers of moths. *C. atriplicis* Meyr. Occasional on the Conwy salterns among *Halimione* in vii, though I have not yet found the larva, Determined by J. D. Bradley. The moth emerges almost a month later than *C. adpersella* and flies over foodplant at sunset. The cases are frequently submerged by winter and spring tides.

*C. artemisicolella* Bruand. There is an old record in *Ent. mon. Mag.* 64: 76 (1928), of one taken in 1924 at Llandudno by E. G. R. Waters among *Artemisia vulgaris*.

*C. murinipennella* (Dup.). Though the foodplant *Luzula campestris* is widespread, the moth is uncommon in 48, 49 and 51 but may be overlooked, vi.

*C. taeniipennella* (H.-S.). First taken by Mrs. M. J. Morgan in 49 and later found sparingly in 52, vii. Determined by J. D. Bradley. The various species of *Juncus* on which the larva feeds are common in north Wales.

*C. glaucicolella* Wood. A common saltmarsh species easily bred from cases found on seeds of *Juncus maritimus* and *J. gerardii* in iv/v: the moth flies low among the rushes at sunset in vii-viii and emerges about a month later than the common *C. alticolella*.

*C. alticolella* Zell. Common throughout among *Juncus* species from sea level to over 2,000 feet, where it flies both by day and night in vi-early vii. Larval cases are abundant in late summer and autumn feeding on the seeds; on higher ground appears to prefer those of *J. squarrosus* to other species.

*C. tamesis* Waters. One at light at Bangor (49) by Mrs. M. J. Morgan in July 1975 is our only certain record. Determined by J. D. Bradley. The larva feeds on seeds of *Juncus articulatus*, a common rush in north Wales.

*C. maritimella* Newman. Though I have not seen the moth in the wild, it can be reared from the seeds of *Juncus maritimus* gathered in winter on edges of salterns in 49, 50 and 52.

*C. adjunctella* Hodg. Bred from seeds of *Juncus gerrardii* gathered in winter and kept outside until v; is local in all vice-counties where the plant is well established. The larval case, which is formed partly of a floret, is very difficult to find. The moth has been taken occasionally in late vi.

*C. serpylletorum* Hering. As far as I know, this species occurs only on the Creuddyn limestone at Llandudno (49) and in West Cornwall. I should be glad to hear of any certain records from elsewhere. The overwintered larva is in a dark brown case made up of several leaves of *Thymus drucei*, set sideways one above the other. In v-vi, it mines leaves towards the end of a spray and is most easily found on ledges and in crevices where the thyme is isolated from other herbage, though it can be found with more difficulty where

the plant grows in limestone turf; yellowish brown mined leaves often indicate the presence of a larva nearby. It is essential to rear the larvae on a potted plant for enclosure usually results in death. The normal flight is uncertain, probably after dusk, and it may be smoked out in the evening in vii-viii.

*C. violacea* (Ström) (*paripennella* sensu auctt.) A typical winged case was found on Sweet Chestnut (*Castanea sativa*) near Llandudno (49) in ix together with two mines in which the upper cuticles were also pierced – a typical habit of this larva. I do not find *Castanea* listed as a foodplant though the late Basil Snell and myself frequently found cases on young saplings at Delamere, Cheshire in the 1950s.

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A SECOND RECENT LOCALITY FOR ELEDONA AGRICOLA (HERBST) (COL.: TENEBRIONIDAE) IN V.C. 17. – Mr. A. A. Allen (1979, *Entomologist's mon. Mag.*, **114** (1978): 156) has recently confirmed the presence of this species in Surrey by publishing his Box Hill locality. I can now 'add' Richmond Park by virtue of two specimens found on the 9th April this year (1983). These were both taken from a long since dead and very hard fungus at above head height on oak (TQ1872). In Fowler, 1891, *Col. Brit. Isl.*, **5**: 13 it seems that both these localities were noted last century and so have, in effect, been confirmed, since Brendell, 1975, *Handb. Ident. Br. Ins.*, **5** (10): 6 has cited only the more recent records. – D. PRANCE, 23 Brunswick Road, Kingston Hill, Kingston-upon-Thames, Surrey.

THE WHITE SPOT: HADENA ALBIMACULA BORKH. IN SURREY. – A specimen of this moth turned up in my light trap here on the night of 3rd June 1983. It was a female in very poor condition. The following night at Dungeness, Kent, produced several examples of this species which were in excellent condition. – G. A. COLLINS, 15 Hurst Way, S. Croydon, Surrey.

THE DEATH'S HEAD HAWK: ACHERONTIA ATROPOS L. IN 1983. – I think it is worth reporting that a fine Death's Head Hawk came to the bright lights at the Goonhilly "Earth Station", Cornwall, on June 14th, and was found by Mr. N. Exebly, who is an engineer there. – F. H. N. SMITH (Dr.), Turnstones, Perrancombe, Perranporth, Cornwall TR6 0HX.

PELOSIA MUSCERDA HUFN.: DOTTED FOOTMAN IN KENT. – I took a male specimen of this moth on the night of 16th July 1983, during the field meeting of the British Entomological and Natural History Society at Orlestone Forest, Kent. It was attracted to the m.v. light on Brigadier Simson's sheet, and as he already possessed the species kindly offered it to me. – G. A. COLLINS, 15 Hurst Way, S. Croydon, Surrey.

TACHYDROMIA TERRICOLA ZETT.  
(DIPT.: EMPIDIDAE) NEW TO BRITAIN

By A. A. ALLEN, B.Sc., A.R.C.S.\*

On 11th July 1973, on a visit with my late friend G. Shephard to the sandpit near Lydd, East Kent, already referred to more than once in the literature, I caught a small Empidid fly running on fairly dry sand. Examination much later showed it to be (apparently) a *Tachydromia* (*Sicodus* auct.), in rather poor condition. It could not be named from Collin's key (1916:81), since it had no dark cross-bands on the wings yet was evidently not *halterata* Col.; but *terricola* Zett. "which should be found in Britain" (p.83) appeared, from the information given, a strong possibility. The fly was submitted to Mr. K. G. V. Smith, of the BMNH, who agreed that it certainly seemed to belong to that species, but that a male was desirable to clinch the matter.

On 1st June, 1978, I revisited the locality with my friend Alex Williams and made a point of working for the insect. It proved quite hard to locate, indeed I had almost given up hope after a two-hour hunt when it turned out that the one very restricted spot in the whole pit (as it seemed) inhabited by my quarry was that on which — guided by who knows what obscure intuition or kindly daemon? — we had dumped our baggage! This was a slight shallow depression in the sand not far from the edge of the lake filling the bottom of the pit, but dry on the surface. The rather common *T. aemula* Lw. occurred on bare or lightly vegetated ground over most of the pit; at the spot just mentioned, however, it was accompanied by the new British species very sparingly. I managed in the time available to secure half-a-dozen, including two males, by grubbing at the roots of the thin herbage and in the open among fragments of plant debris etc. — the habits of the two species being as far as I could see quite alike.

A pair, subsequently confirmed from the male as *T. terricola*, has been placed in the National Collection.

As above indicated, this *Tachydromia* may at once be known among those recorded as British by its comparatively clear, unbanded wings which are only faintly clouded longitudinally, and apically in cell R3, combined with pale halteres and very extensively pale legs. Chvála (1975) gives a description (pp.230-1) and figures the male middle leg (p.230), genitalia (p.232), and wing (p.303 fig. 755). He records it (p. 232) as uncommon, but well distributed over north and central Europe, in sandy coastal biotopes (and according to Loew "in grasses"). The Lydd sandpits, though not *on* the coast, are near it and their fauna is in great part a maritime one. Because of the extraordinary degree of identity

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found between the rarer and more characteristic Coleoptera of the Lydd pits and the similar one near Rye Harbour (Sussex), well known to several entomologists, it is highly probable that *T. terricola* occurs also at the latter place. In fact, I retain a distinct impression of having seen there (about 1970) what was most likely that species, but had then no reason to think it anything out of the ordinary.

### Acknowledgement

I am indebted to Mr. K. G. V. Smith, our leading expert on the family, for his authoritative determination.

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THE PURPLE MARBLED: EUBLEMMA OSTRINA HBN. AT PORTLAND. — On the night of 17th June 1983, I took a female of this rare migrant moth at light near Church Ope Cove, Portland, Dorset. A few *Autographa gamma* L. and *Nomophila noctuella* D. & S. accompanied it. I failed to obtain eggs over the next week from the moth, which was in mint condition and of the form *carthami* H.-S. Eventually I set it whilst it still retained a few scales. — A. J. PICKLES, 2a Park Avenue, Lymington, Hampshire.

XESTIA CASTANEA ESP.: GREY RUSTIC IN KENT. — From a larva of this species which I swept from heather on 26th April 1983 in a heathy wood near Hawkhurst, I bred a female moth of the dark reddish form on 10th August. This appears to be the first record of occurrence of *X. castanea* in Kent since one was taken at Lee by C. G. Bruce in 1952 (cf. Chalmers-Hunt, *Butterflies and Moths of Kent*, 2 : 136). — J. PLATTS, 11 Maydowns Road, Chestfield, Whitstable, Kent.

EUPROCTIS CHRYSORRHOEA L. IN LONDON. — While passing David Copperfield Gardens in the New Kent Road today I noticed many trees infested with *Euproctis chrysorrhoea* larvae, in particular the flowering cherries. — L. CHRISTIE, 129, Franciscan Road, Tooting, London SW17 8DZ. 10.vi.83.

THE HUMMINGBIRD HAWKMOTH IN 1983. — Yesterday, 12th June, at a little after 2.00 pm, my wife and I watched a *Macroglossum stellatarum* L. feeding in sunshine at the red valerian, *Kentranthus ruber* for about half an hour. The temperature was 19°C or 2 or 3 degrees lower than the previous few days. The only occasions when we have seen *M. stellatarum* in the garden in the last 20 years have both been in mid-July in 1976 and 1979. — M. R. HALL, "Hopefield", Norwich Road, Scole, Diss, Norfolk IP21 4DY.

RECORDING LEPIDOPTERA IN THE COTSWOLDS  
DURING 1982

MICHAEL N. MCCREA\*

1982 has proved to be both an interesting and rewarding year for lepidoptera here in Gloucestershire. Although the season opened with some of the coldest temperatures of all time in the county, the arrival of moths to my actinic trap at Nailsworth was moderately consistent. A surprisingly mild evening on January 30th produced a large number of moths, particularly *Operophtera brumata* L. *Erannis defoliaria* Cl. was comparatively abundant and a few *Apocheima pilosaria* D. & S. were also noted. The following evening, after this propitious start to the season, I ventured out onto the nearby common, armed with a tilley lamp, where I found plenty of *Theria primaria* Haw. and several *Agriopsis marginaria* Fabr. The rest of February remained rather mild, but very wet, with temperatures in the low 50s. On February 28th my Nailsworth trap brought in the first *Alsophila aescularia* D. & S. of the year, as well as a further influx of *O. brumata* L.

My activities were limited during the first two weeks of March, but during the latter part of the month I visited Painswick Beacon with the specific purpose of seeking *Panolis flammea* D. & S. I was joined by my colleague Mr. David Cooper, who has provided me with companionship on many a field trip. By now the willow blossom was in full bloom, and, with an overcast sky above, our thoughts were very optimistic indeed.

We placed a tilley lamp on a white sheet, beneath several selected willows, and commenced beating. In no time at all our sheet was covered with moths as well as other debris dislodged by our over-enthusiastic physical exertions. *Orthosia gothica* L. was undoubtedly the most numerous species present, with about 500 counted during the course of the evening. Other visitors included *Orthosia miniosa* D. & S. (2), *O. populeti* Fabr. (3), *O. munda* D. & S. (100), *O. cruda* D. & S. (45), *Xylocampa areola* Esp. (5) and a very worn *Lithophane socia* Hufn., but no *P. flammea*. This seemed strange to me, as there is a good supply of Scots pine in the vicinity, and my friend Mr. John Newton has taken a fine series from this area in recent years. Several further visits to the site failed to produce the moth.

April opened with the first really sunny days of spring, and, with the thermometer at 60°F on the 4th, quite a few of the hibernating butterflies were in evidence. Throughout the Stroud district, many *Aglais urticae* L. were active around stinging nettles, with the occasional *Gonepteryx rhamni* L. making an appearance. On April

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17th Mr. Cooper and I set out towards Daglingworth near Cirencester, on a mild but blustery evening that yielded little of interest except a few *Eupsilia transversa* Hufn. and *Diurnea fagella* D. & S., the latter swarming around our lamp in huge numbers. Despite the lack of activity, however, we were rewarded by the overhead roding of a woodcock, and a couple of inquisitive tawny owls.

On April 29th I sugared a stand of poplars near my home at Nailsworth, and whilst examining the visitors after dusk, I boxed a moth which at first seemed unfamiliar to me. On examining it later, I was delighted to confirm a specimen of *Egira conspicularis* L. This species appears to be extremely local in Gloucestershire with previous records occurring very infrequently. May opened with glorious sunshine which was prevalent throughout the rest of the month. On the evening of May 19th I visited Standish Wood, a popular site on the most western escarpment of the Cotswold hills. The night was very warm and muggy with a mild south-westerly breeze. We positioned our heath-trap along a woodland ride which presented both deciduous and coniferous cover. After a short while our sheet was seething with moths, so much so that it presented us with the frustrating task of calculating the numbers of visitors on an almost continual basis. 30 species of macros were recorded, the most interesting of these being *Ectropis consonaria* Hb. (4), rather local in this part of the county, *E. crepuscularia* D. & S. (2), *Plagodis dolabraria* L. (2), *Horisme vitalbata* D. & S. (1), *Ecliptopera silaceata* D. & S. (9), *Lampropteryx suffumata* D. & S. (5), *Thyatira batis* L. (4) and *Ptilodon capucina* L. We were also interested to note the extremely large numbers of *Colocasia coryli* L. About 300 were counted during the evening, the most I have ever seen at one time.

On May 20th an afternoon walk near Stroud in very hot conditions produced plenty of butterflies. The fields were alive with *Pieris napi* L., *Polyommatus icarus* Rott. and *Anthocharis cardamines* L. At nearby Hawkwood a small colony of *Hamearis lucina* L., which I have been observing for several years now, was thriving, together with *Erynnis tages* L. and *Pararge aegeria* L. I also noted *Euclidimera mi* L. and *Ectypa glyphica* L. Whilst examining a small clump of wild rose at this site, I found about 12 cases of *Coleophora gryphipennella* Hb. I collected several of these and moths bred from them emerged between August 2nd and 5th. On May 26th I again operated my actinic trap in the garden at Nailsworth. Some interesting moths came to the light, 43 species in all, including, *Electrophaes corylata* Thunb. (6), *Eppirhoe rivata* D. & S. (40), *Biston betularia* L. (typical 7, f. *carbonaria* Jord. 4), *Cilix glaucata* D. & S. (2), *Hadena rivularis* Fabr. (5), *Furcula furcula* L. (2) and a very large female *Cerura vinula* L. The following morning I was surprised to discover at Nailsworth, about a dozen larvae of *Notodonta dromedarius* L. feeding on lime. I collected six of these and moths bred

from them emerged during the first week of August. South (1961, *The Moths of the British Isles*) states that the larvae of this species feed "on birch, alder, and sometimes hazel, usually on the former, in June, July and August". This appears true from my experiences with the species, I have never before encountered the larvae feeding on lime.

During June temperatures soared into the 80s and a succession of hot and muggy evenings between June 3rd and 16th produced vast numbers of moths at my Stroud actinic trap. Although the diversity of species was rather low, the incredible multitudes were adequate compensation. During these two weeks a total of 48 species of macros were recorded; amongst the more interesting ones were: *Acasis viretata* Hb. (2), *Semiothisa notata* L. (3), *Autographa pulchrina* Haw. (6), *Tyria jacobaeae* L. (45), *Callimorpha dominula* L. (4) and at least 1,000 *Noctua pronuba* L. With the warm weather continuing into the first week of July, my colleague and I found ourselves in the New Forest for a few days. During our brief stay, we were fortunate in obtaining several *Catocala sponsa* L. from the Minstead area. Our portable m.v. lamp brought in a large assortment of moths including *Hyloicus pinastri* L. (3), *Stauropus fagi* L. (6), *Zeuzera pyrina* L. (2), *Boarmia roboraria* D. & S. (2, at sugar) and *Amphipyra pyramidea* L. (8, at sugar).

On returning from the Forest on July 12th, I visited Edge Common near Gloucester. The site is excellent for many species of butterflies and moths, consisting of open limestone grassland and scrub with mature deciduous and coniferous woodland. Although a slight drizzle persisted during the greater part of the evening, this did not deter insect activity. A fairly extensive sugar round was established and this proved highly successful with *Amphipyra pyramidea* L., *Thalpophila matura* Hufn. (9), *Peridroma saucia* Hb. (2), *Agrotis ipsilon* Hufn. (5), *Scoliopteryx libatrix* L. (4) and *Phlogophora meticulosa* L. (2). The most spectacular sight at sugar however, was of no less than 500 *Mythimna pallens* L. and *M. impura* Hb. on one patch. Our actinic trap was doing well also, with 56 species of macros. Amongst these were *Eremobia ochroleuca* L. (3), *Lymantria monacha* L. (2), *Philudoria potatoria* L. (5), *Melanthia procellata* D. & S. (7), *Eulithis prunata* L. (12), *Perizoma flavofasciata* Thunb. (2), *Selenia dentaria* D. & S. (1) and *Drepana cultraria* Fabr. (8). We returned to the site the following evening, this time joined by Mr John Mcfeely, but poor weather conditions resulted in a poor catch at both light and sugar. Nevertheless, despite recording most of the species from the previous evening, we noted *Ennomos alniaria* L. (6), *Pheosia gnoma* Fabr. (8), *Ypsolopha sequella* Cl. (4), *Agapeta zoegana* L. (9), *Aphomia sociella* L. (14) and *Hypsopygia costalis* Fabr. (2).

August was congenial for the time of year, although most of the sunny days were intermitted by the occasional rain storm.

On August 20th I visited Randwick Wood near Stroud, where many butterflies were on the wing. *Melanargia galathea* L. was plentiful, with a sprinkling of *Thymelicus sylvestris* Poda., *Maniola jurtina* L. and *Pyronia tithonus* L. Several *Lysandra coridon* Poda. and *Aricia agestis* D. & S. were also present. A further trip to Minchinhampton Common that afternoon produced a good number of *Cupido minimus* Fuessl. and *P. icarus* Rott., the former species enjoying a successful season throughout the county. On August 29th my Stroud trap brought in several *Arctia caja* L. and a large influx of *Autographa gamma* L. The latter species appeared sporadically throughout September and well into October. During September there occurred an evident invasion of *Cynthia cardui* L. throughout the Stroud area, or possibly offspring from a spring immigration, although many of the singletons observed were in very poor condition. This invasion continued well into October, the last one being noted on the 14th. During a surprisingly mild spell the first half of October, *A. urticae* L. swarmed on the last few blooms of buddleia, together with *Vanessa atalanta* L. and *Polygona c-album* L.

The last week of October was extremely wet and temperatures declined dramatically. The absence of anything substantial to my Stroud trap on October 31st, indicated that winter was nearly there. On November 4th however, a mild evening yielded *Colotois pennaria* Hb. (a few) and *Eppirita autumnata* Borkh (3). Late November saw a sharp change in the weather, and a series of cold frosts during the last few days of the month more or less closed my activities for the year. In complete contrast, the latter part of December was exceptionally mild, and whilst visiting a friend at Slad near Stroud on the 19th, I observed large numbers of *Poecilocampa populi* L. The following day I paid a return visit to Edge Common in very windy conditions where I beat *Caloptilia betulicola* Her. (4) and *C. alchimiella* Scop. (2), thus closing, for me, an enjoyable year of activity.

### Acknowledgements

I would like to express my thanks to Mr. J. Newton for his interesting and helpful correspondence, past and present, and Mr. D. Cooper for an interesting working relationship.

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APIUM NODIFLORUM: A PREVIOUSLY  
UNRECOGNIZED FOODPLANT OF  
DEPRESSARIA ULTIMELLA STAINTON

By R. J. HECKFORD\*

On 4th May 1972 I took a worn *Depressaria* at Saltash, Cornwall. In late 1981 I dissected it to discover it was a male *D. ultimella* Stainton. The only other Cornish records of which I am aware are three specimens taken by the Revd. D. J. L. Agassiz at Treyarnon on 27th August 1970 and one taken by Dr. J. R. Langmaid at Veryan on 8th. September 1978.

Meyrick (1928) gives only *Oenanthe aquatica* as a foodplant and describes the species as common. However by Meyrick's definition a species is common if it is found wherever its foodplant is plentiful. *O. aquatica* is distinctly local. Margetts and David (1981) do not record it from Cornwall.

Emmet (1979) adds *O. crocata* and *Sium latifolium*. *O. crocata* is common in Cornwall but *S. latifolium* is not recorded. Spuler (1913) and Toll (1964) both give *O. aquatica* and *S. latifolium*. Palm (1973) simply states "Oenanthe, Sium".

On 11th. July 1982 I revisited Saltash to look for larvae. I had taken my specimen in a lane having a hedge on either side and a small stream at one side. There were a few plants of *crocata* and a quantity of a plant which I subsequently identified as *Apium nodiflorum*. No larvae were feeding on the *crocata* but the stems contained pupae. I suspected that these were too large and too early for *ultimella*. Indeed in due course they produced *D. daucella* D. & S.

I then noticed that several tips of *nodiflorum* were withered. On splitting open the stems I found some very small larvae. Some were feeding in stems just below the tip, others were further down but in every case there was only one larva in each plant. Because of the withered stems it was very easy to see which plants contained larvae. It was clear that the larvae were quite common.

On my way home I examined some *nodiflorum* at Plymouth and immediately found similar larvae. Between then and 5th. August I found larvae in several localities in Devon. All were in *nodiflorum*. I found none in *crocata*, although in most places it grew nearby. Thereafter I found only pupae. In all I found the species in fourteen localities in Devon.

As the larvae grew they moved down the stems. Most of the pupae were very low in the stems. Some were even in stems under water. How the adult emerges in such circumstances I could not tell. Dr. J. R. Langmaid noticed in Hampshire, stems with exit

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holes plugged with frass. By mid August it was difficult to find tenanted stems as the rest of the plant had decomposed. The tenanted part was then covered by the growth of unaffected plants.

Generally the larvae appeared to prefer *nodiflorum* growing in small ditches by roadsides rather than that growing more luxuriantly in streams.

Meyrick describes the larva of *ultimella* as pale green; dots dark brown; head pale brownish. Emmet says it is whitish green with head black. My description of the young larva was: head shining dark brown, plate yellowish brown; body yellowish, pinacula dark brown; anal plate transparent. By the fourth instar the head and plate were light red brown; body light grey, pinacula black; anal plate transparent. In the final instar my description was: head shining red brown, plate yellowish; body greyish green, pinacula black; anal plate yellowish.

On 31st. July the first specimen of *ultimella* emerged. Emergence continued until late August.

Emmet does not record any species of microlepidoptera feeding on *A. nodiflorum*. As I found *ultimella* almost wherever the food-plant occurred it is obviously an established foodplant. As *A. nodiflorum* is widespread it is likely that *ultimella* will now be found more commonly.

Dr. Langmaid and I reared some parasites which Dr. A. A. Allen and Dr. M. R. Shaw have kindly identified. Dr. Langmaid's were all reared from larvae taken at Droxford, Hampshire. They were *Barichneumon lepidus* (Gravenhorst), *Phaeogenes stipator* Wesmael and *Dicaelotus morosus* Wesmael. Mine from two localities in Devon were all *D. morosus*. *P. stipator* is a fairly common species and the other two are not uncommon.

### Acknowledgements

I am grateful to Dr. J. R. Langmaid for his assistance in the preparation of this note, to the Rev. D. J. L. Agassiz for his records and to Dr. A. A. Allen and Dr. M. R. Shaw for their identifications of and information about the parasites.

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THE MARBLED GREY: *CRYPHIA RAPTRICULA* HBN. IN KENT. — I wish to report the capture of the fifth British specimen of this noctuid moth, at m.v. light on the night of the 20th June 1983, at Dungeness, Kent. The wind that night was a light S.E., the temperature cool, with a night minimum of 12°C. — P. H. STERLING, Department of Agricultural and Forest Sciences, Commonwealth Forestry Institute, South Parks Road, Oxford [The previous records are: 1953: Arundel, Sussex, male in m.v. trap, 12.viii (Haggett, *Ent. Gaz.*, 5: 94A). 1955: Southsea, Hampshire, one in m.v. trap, 18.viii (Langmaid, *Ent. Gaz.*, 7: 112). 1969: Worth, Kent, one 9.viii; Sandwich Bay, Kent, one 9.viii, both taken by T. W. Harman (Chalmers-Hunt, *The Butterflies and Moths of Kent*, 3: 252). — J.M.C.-H.]

ARCHIEARIS NOTHA HBN.: LIGHT ORANGE UNDERWING, THREE YEARS IN PUPAL STAGE. — In June 1980, I found some larvae of *A. notha* in Orlestone Forest, Kent, one of which produced a moth on the 26th April 1983. — J. V. BANNER, 41 Varndean Gardens, Brighton BN1 6WJ, Sussex.

LARVA OF THE DOTTED CHESTNUT: *CONISTRA RUBIGINEA* D. & S. IN THE WILD. — It may be of interest to report finding a larva of this local moth feeding on an apple tree here in my garden. I found the larva, which was approximately 3 mm. long, exposed in daylight near the terminal shoot of a low branch on 7th May 1983. There was evidence of its feeding, and it has now become an unmistakably full grown larva. I have in the past had occasional specimens of the moth to my garden m.v.l. including a female on 8th April this year. The apple is of the Worcester variety. — A. J. PICKLES, 2a Park Avenue, Lymington, Hampshire.

ETHMIA BIPUNCTELLA F. IN HAMPSHIRE. — I took in my m.v. trap here on the 16th August 1983, a specimen of *E. bipunctella*. As it was accompanied by *Rhodometra sacraria* L. and *Mythimna vitellina* Hbn. and there is no *Echium* locally, it was probably a migrant. The only previous record for the county is of one for Alverstoke on 7.viii.1967. — E. H. WILD, 7 Abbots Close, Highcliffe, Christchurch, BH23 5BH.

THE ARGENT AND SABLE: *RHEUMAPTERA HASTATA* L. IN SUSSEX. — During a visit to a Sussex wood on 30th May 1983, I noted three of this pretty geometrid in good condition flying in a birch-lined ride in the afternoon sun. Mr. S. Church tells me this is a scarce moth in the county. — D. DEY, 26 Manor Avenue, Hassocks, West Sussex.

## A MODERN REVIEW OF THE DEMISE OF *APORIA CRATAEGI* L.: THE BLACK-VEINED WHITE

By COLIN PRATT\*

(Concluded from page 166)

### HABITAT CHANGE

Recently Morton (*loc. cit.*) suggested that, in common with *Maculinea arion* L., *A. crataegi* disappeared because both species had become "victims of a changing countryside", although even to this day some former localities have altered little. At the time of the latter's decline, McLachlan (1893) wrote "there have been no great changes in the physical condition of its former localities", Goss (*loc. cit.*) having made the same point earlier. It is therefore apparent that habitat change or loss played little part in this extinction.

### PARASITES

Martelli (*loc. cit.*) recorded much detailed information on the parasites affecting the black-veined white in Italy during the late 1920s. There is no doubt that parasitism can be heavy in the species as he noted that in one area more than three-quarters of the larvae examined eventually died owing to the attentions of a total of seven species of parasite. Stellwaag (*loc. cit.*) reported similar occurrences from Germany and listed more than a dozen parasitic species from *A. crataegi*. *Apanteles glomeratus* held a prominent position among the parasitic species mentioned, and in modern times it has been named in connection with larval losses encountered within continental introductions of *A. crataegi* in this country. This parasite alone has been reported as causing 100% lethality in *P. brassicae* larvae in Germany (Feltwell, 1982). However, there is no evidence that parasites contributed at a primary level to the fluctuations in population of the butterfly under review in this country; unusually high losses due to this cause were not reported at the time and the likelihood of this being noticed would have been high.

### PESTICIDES

Heath (*loc. cit.*) suggests that pest-control measures by fruit-growers in Kent may have been the cause of the insect's final extinction in this country. In Kent, the use of insecticides on apple-  
\*“Oleander”, 5 View Road, Peacehaven, Newhaven, Sussex.

trees commenced before the last quarter of the 19th century when quicklime was used to kill lepidopterous ova, presumably mainly of the winter moth. By the turn of the century the more advanced fruit-growers sprayed systematically with quassia, soft soap, and paraffin emulsion; a few used Paris green (cupric acetoarsenite) alone. According to ADAS (pers. comm.), the use of these sprays increased dramatically after the first world war, substantially with arsenic compounds; additives such as the fungicidal Bordeaux mixture also came into use, making a wider spectrum spray. How widely these chemicals were used in, and their exact effect on, the black-veined white's very local last strongholds are not known. It is *just* possible that when the butterfly was reduced to a very few colonies, as it was after the first world war, ill-timed spraying by fruit-growers delivered the *coup de grace*; but chemicals played no larger part in this disappearance and it is much more likely that they did not materially contribute to its departure at all.

### SUMMARY

Examination of the available national average weather records from the earliest dates possible for temperature and rainfall on a monthly, seasonal, annual and twenty-year-running-average basis since the 17th century shows that the only significant relationship with the fluctuations of *Aporia crataegi* L. is that of September rainfall; high rainfall during this month over successive years, both in the short and long term, seemed to be linked to low numbers and the butterfly's ultimate extinction in this country. There seems little doubt that the cause of the disappearance was multifactorial — the unique coincidence of several adverse influences. There is considerable circumstantial evidence to suggest that the butterfly was severely affected by a disease in historical times. There are inferential indications that a fungal epizootic was the most probable disease encountered, although the possibility of a virus disease cannot be eliminated. With disease being the primary culprit, it is likely that avian predation also contributed heavily to the decline, with other of the more usual deleterious factors following.

To conclude, I believe the black-veined white became extinct in Britain because of a coincidence of both natural and man-made pressures, these being a prevalent climatically induced disease and an increase in predation by birds, due to changing attitudes towards conservation, game and agriculture. Nevertheless, as Barrett (1893) said, "much mystery hangs over this species" in this country, and some always will.

### Acknowledgements

During the research for this article several different disciplines

were encountered, including meteorology, ornithology and entomogenous diseases; the author claims no expertise in any of these and has consequently drawn extensively on the authoritative published work of experts, to whom any credit is due.

My thanks are due to Mrs. I. Amos and all the library staff at Brighton Polytechnic, and to Mr. H. Rimmington and the computer staff of the same establishment. I am also indebted to Mr. P. W. Cribb for detailed information on his breeding experiments with the black-veined white. I would especially like to express my gratitude to Mr. R. F. Bretherton for his assistance with records, and to Col. A. M. Emmet for constructive criticism during the final stages of the paper.

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EPIPHYAS POSTVITTANA WALK.: A SEQUEL. — Having taken a single specimen of the above Tortricid at m.v. light here last year (*antea*: 120), it was with more interest than surprise that I encountered several of these moths attracted to a wall-lamp in a by-way not far distant on the night of 7th June 1983 — that is, almost exactly a year later. It was, in fact, the very spot where an *Epichoristodes acerbella* Walk. had occurred five years previously (*Ent. Rec.*, **92**: 33). I took four of the *postvittana*, which, though showing some little variation, are all of the more typical and easily recognizable form with basal area of forewings contrastingly pale — unlike the 1982 example. They are in good order, one female being particularly fresh and perfect. The arrival of the species in this district must surely be very recent. Further captures in the south-east can now be confidently expected. — A. A. ALLEN, 49 Montcalm Road, Charlton, London SE7 8QG.

SOME NOTES ON *POLYPOGON STRIGILATA* L.  
(LEP.: NOCTUIDAE)

By B. ELLIOTT\*

This charming hyphenid moth, better known as *Herminia barbalis* Clerck, has as its vernacular name the 'Common Fanfoot', a name which seems to belie its modern status since 'Scarce Fanfoot' would be more appropriate.

### Distribution

During the latter half of the 19th century, Morris (1872) gave its distribution as from York to Birkenhead in the north and Tenterden to Arundel in the south, with an east-west spread from Stowmarket to Marlow and through to Worcester. The species figures frequently in early county lists, such as those for Yorkshire and Nottinghamshire by Porritt (1904) and Carr (1916) respectively, but there are apparently no more recent records for these counties. Indeed, after conversations with many lepidopterists, it seems that the species now occurs only locally in the southern central region of England (there are some old, but no recent records, for Ireland). The principal areas of occurrence now seem to be based in the oak woods of Berkshire and, to a lesser extent, the woods in south-east Kent. These two areas are the only places where I have personally seen the moth. Its distribution in Kent is well written up by Chalmers-Hunt (1962-81). For Wiltshire, de Worms (1962) describes it as 'fairly common', but I know of no recent records for that county.

My first encounter with this species was a male moth tapped out of an oak tree in Orlestone Woods, Kent, late one afternoon in mid-June 1969. I did not see the moth again until June 1981 when, in the company of Bernard Skinner, I captured a worn female in a Berkshire woodland where he had seen five males the previous week.

### Rearing Notes

I took the female home, and since it was in a worn state fed it at once on a dilute sugar solution. (NB. It has been my experience that members of this species' group desiccate easily, so an early feed and a humid atmosphere are advisable).

I have not been able to trace any complete account of rearing this species, so the following description of its life history may be useful.

\*"Three Pieces", Vernon Lane, Kelstedge, Derbyshire.

21.6.81. I placed the female in a plastic container with oak and birch leaves and black netting after carefully feeding it again dilute sugar and honey solution. A search through the literature that evening for any information produced an excellent brief description of the ovum by Haggett (1953), and a description of the post-hibernation larva by Buckler (1901).

22.6.81. The first ova were laid this evening on the netting, with a total of 44 between now and the 29th, when the moth died. They were a shiny, pale, translucent green, becoming reticulated and darker after two days. Fine ribbing is apparent. It is 0.6mm in diameter and 0.3mm high. Of the number laid, the first 25 hatched, the rest soon crumpling – presumably being infertile in an old moth.

2.7.81. The first larvae began hatching during the day. They were pale, translucent and glossy, with a dark dorsal line, broad on the first segment and tapering away  $\frac{2}{3}$  along length of body. They fed on fresh rather than stale oak leaves and ignored birch leaves.

8.7.81. The hatch was completed by this date, but the earliest larvae were now ready for their second instar. They began by eating fresh leaves, skeletonising them and continuing to feed on these same leaves even though they had become overtly mouldy. Indeed, the older the larvae became, the more they preferred withered leaves.

4.9.81. The leading larvae gave the appearance of being full grown, the largest ones being 15.0mm and the smallest 12.0mm, and were now eating only very withered or dead leaves.

1.11.81. The larvae increased only a further 1.0mm in size to a maximum of 16.0mm, and were now very sluggish.

On the advice of Mr. G. Haggett, I had dried some green oak leaves, which I then put in a ventilated plastic box with other dead leaves on coarse tissue paper, and placed them in the garage for overwintering.

Over the next week or two, the larvae settled in hibernating positions on the tissue and there they stayed without further movement until early April, when some wandering was observed. Assuming that further eating might take place, I added more dried oak leaves, plus a few holm oak leaves picked off a tree, and some birch catkins.

27.4.82. There was little evidence of feeding. One holm oak leaf was nibbled and there was some sporadic chewing of the old leaves. The catkins were not touched.

The first cocoon noted was in a dead oak leaf, but the rest pupated in flimsy but adequate cocoons in folds of the tissue paper, incorporating any fragments of leaf in the vicinity. Eleven larvae formed cocoons.

13.5.82. All the remaining larvae had pupated by this date. The pupa is about 12.0mm long, narrowish and not very glossy.

7.6.82. The first moth emerged today, and the remaining nine over the next few days. They sat quietly in the plastic box, choosing the darkest place.

### Description of mature larva

The larva at or approaching full growth is a warm, pale brown in ground colour, with a dark dorsal line. There is a lateral line running on each segment, running ventrally from the dorsum. This line is intersected at the spiracular level by a vague line running disto-dorsally, so that when viewed from the side, the larva has a latticed appearance and when viewed dorsally the lines give the appearance of a row of diamonds. Each segment has four black spots in two pairs, the two anterior ones are close to the midline (when viewed dorsally), and the two distal ones are wider apart. The spiracles are black, the head is brown with a pronounced taper of the body to the head. Length is just over 16.0mm. The foregoing description was made on 10.10.1981.

### Feral habits

South (1908) mentions that the moth 'frequents the more open parts of woods, and in the daytime may be induced to show itself by tapping the lower branches of trees or brushing the bushes or undergrowth as we pass along'. The truth of this statement has certainly been borne out by my personal experience. It sits for preference on the lower branches of oak trees, and when disturbed quickly flies off to another hiding place, usually in the woodland undergrowth.

I have not looked for the larva in the wild, but it is interesting to read the careful researches into the life history of its relative *Trisateles emortualis* Denis & Schiff. by Baker (1969), bearing in mind the way *strigilata* also skeletonises withered leaves. It would probably be profitable to examine dead oak branches with attached leaves for evidence of skeletonisation of the leaves in old mature oak woodland.

This moth has another relative which is well known for existing in exceedingly small numbers, that is *Colobochyla salicalis* Denis & Schiff., which is rarely encountered until optimum conditions occur. I wonder whether these conditions are provided by a period of forestry activity, in which branches with leaves on are left lying about. Likewise, I have more than once stood in one of the Chiltern localities for *T. emortualis* and speculated on whether the period when the moth was common coincided with clearance and felling in the area.

### Acknowledgements

I should like to thank Mr. G. Haggett for advice on overwintering the larvae and also Mrs. Lorraine Culpin for patiently typing the manuscript.

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**The Willoughby Gardner Library: A Collection of Early Printed Books on Natural History by J. R. Kenyon.** 54pp., including frontispiece and 9 other illu. Stiff, decorated cover. National Museum of Wales, Cardiff, 1982. £4.50 (£4.80 by post).

This is a catalogue of the 288 books forming the collection of the late Willoughby Gardner (1860-1953), which was acquired by the Library of the National Museum of Wales in 1953. The items are arranged alphabetically under authors' names, and with each entry there is a concise collation. Most of the collection consists of early printed books on the natural sciences ranging from the 15th-18th centuries, a fair number being of entomological interest.

Among the more notable books on entomology are those by Aldrovandi, Albin, Drury, Moses Harris, John Jonston, L'Admiral, Lewin, Linnaeus, Matthew Martin, Merian, Merrett, Moffet, Petiver (including a copy of the exceedingly rare *Papilionum Britanniae icones*, 1717), Ray, Reaumur, Roesel von Rosenhof, Schaeffer, Sepp, Swammerdam and Wilkes (including only the second known copy of *Directions for making a Collection*, 1742). The catalogue is well printed on a good quality paper, and tastefully got up. — J.M.C.-H.

## BUTTERFLIES IN CENTRAL SPAIN IN MAY 1982, INCLUDING A RECORD OF NORTHWARD MIGRATION

By J. F. BURTON\* & D. F. OWEN\*\*

### Introduction

From 10th to 24th May, 1982 inclusive we visited the neighbourhood of the Sierra de Guadarrama, near Madrid, and the Sierra de Gredos further west; areas whose butterfly fauna has not received a great deal of attention. The main purpose of our expedition was to make sound recordings in stereo of birds and other wildlife for the B.B.C. Natural History Unit as well as three radio programmes about the wildlife of these areas which were broadcast on B.B.C's Radio 4 between 25th March and 8th April, 1983. We were accompanied by D. J. Tombs, an experienced B.B.C. recording engineer and keen amateur ornithologist. In spite of these preoccupations we paid as much attention as possible to the butterflies and featured them in the programmes we made.

We travelled to Spain with the car ferry from Plymouth to Santander, docking at 1000 hrs. local time on 10th May. During the drive from Santander via Burgos to our headquarters for the next week at the mountain resort of Miraflores de la Sierra, in the Sierra de Guadarrama, we made some casual observations at points along route E25 where we stopped for refreshment. These are included, for convenience, in the species list below together with our notes made in the Sierra de Guadarrama and Sierra de Gredos mountain regions where we spent most time.

As mentioned above, we spent the first six days, from 10th to 15th May, in the Sierra de Guadarrama. We concentrated on a mountainside wood consisting chiefly of Pyrenean Oaks: *Quercus pyrenaica* Willd., at an altitude of around 1,300 m. We also made a few excursions elsewhere: to Guadalix on 11th May; Puerto de Canencia (1,600m.), Canencia and Lozoyuela on 13th; and during our drive from Miraflores to the Gredos mountains on 15th we explored the mountain slopes above Rascafría.

From 16th to 24th May inclusive we explored an area of approximately 600 square kilometres between Arenas de San Pedro and Madrigal de la Vera in the southern foothills of the Sierra de Gredos and Oropesa and Calzada de Oropesa on the E4 Naval-moral de la Mata to Talavera de la Reina road to the south. A little time, however, was spent on the road leading up to the mountain pass of Puerto del Pico (1,352 m.) on 23rd May, where we

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observed the migration of butterflies described below, and also in the northern part of the Gredos Mountains around Navarredonda de la Sierra on 23rd and 24th May where we had stayed the night in the Parador — a splendid old hunting lodge.

From the bare granite tops of the Gredos Mountains the habitat graded through extensive pinewoods to mixed woodland and cultivated land on their lower slopes; to the south the land undulated fairly gently to and beyond the River Tietar through the Sierra del Agulla before flattening out to a dry, dusty plain which extended all the way to the next ridge of high ground on which Oropesa and its castle stands. Near Oropesa, there are large, semi-arid cultivated fields, but most of the country between the town and the River Tietar consists of sandy, heavily grazed grassland with a fairly extensive, park-like cover of Cork and Holly Oaks: *Quercus suber* L. and *Q. coccifera* L. here and there.

The weather throughout our sojourn in central Spain was mainly fine and sunny, although thundery showers occurred occasionally on the high mountain tops where quite a lot of snow still lay. It was distinctly cooler in the Sierra de Guadarrama, especially in the early morning, than in the Sierra de Gredos. The latter range is, of course, farther south and west, and we were there later in the month. It was usually very warm or hot in the valleys of the Sierra de Guadarrama, and especially hot in the foothills and the plain to the south of the Sierra de Gredos, except when an occasional breeze blew from the mountains.

#### Migration through the Sierra de Gredos

On 23rd May, a hot sunny day, we left Arenas de San Pedro and drove northwards along the steep road which zig-zags up to the mountain pass of Puerto del Pico (1,352 m.). We noted many butterflies on the way to the top, including several migratory species (eg., Large White: *Pieris brassicae* L., Small White: *Artogeia rapae* L., Bath White: *Pontia daplidice* L., Clouded Yellow: *Colias crocea* Geoff., Long-tailed Blue: *Lampides boeticus* L., Red Admiral: *Vanessa atalanta* L. and Painted Lady: *Cynthia cardui* L.), but were not conscious of a migratory movement in progress until after we had reached the pass and had settled down towards noon in the narrow valley between the mountain peaks to spend a couple of hours making sound recordings of the Ortolan Buntings: *Emberiza hortulana* L. and other birds present there. While we were doing so we became aware that most of the butterflies we saw were flying northwards through the pass. We decided to make a count, starting at 1300 hrs., of the numbers per hour of each species passing between us on a 50 m. front. This gave the following figures:—

	Total/hour	Height above ground
<i>Artogeia rapae</i> L.	360	1 - 3 metres

*Colias crocea* Geoff.

250

0 - 1 metre

Combined total: 610

These were the only species which crossed our line of vision during the sample count, but during the three hours we spent in the pass other species noted flying north were Large Whites: *P. brassicae* L. (a few), Green-veined White: *A. napi* L. (several), Berger's Clouded Yellow: *C. australis* Verity (a few), Pale Clouded Yellow: *C. hyale* (a few), *V. atalanta* L. (a few), *C. cardui* L. (a few) and *L. boeticus* L. (several).

All the butterflies were flying purposefully against a fresh north wind, mostly at low level. The majority of those in our sector flew straight on through a thick plantation of small conifers, dodging between the trees. Some of the female *crocea* were of the form *helice*. We recorded a short eye-witness description of the migration by D.F.O. which was broadcast in B.B.C. Radio 4's "The Living World" on 30th May, 1982.

When we finished our sound recording work and continued north through the Sierra de Gredos on the Avila road we were surrounded by butterflies of the species already mentioned flying in the same direction. The movement was still in progress at 1400 hrs. when we stopped for lunch at Vta. del Obispo, some 5 km. further north, but appeared to have stopped when we emerged from the inn soon after 1500 hrs.

#### Systematic List of Species Recorded

Swallowtail: *Papilio machaon hispanicus* Eller. Sierra de Guadarrama: one, Miraflores town, 12.v. Sierra de Gredos: one, Arenas de San Pedro, 15.v.; a full grown larva on Fennel *Foeniculum vulgare* Miller near Ramacastanes, near Arenas de San Pedro, 16.v.

According to Eitschberger and Steiniger (1973b), supported by de Freina (1975), the Swallowtail is sporadic and solitary in its distribution in Spain with the exception of the mountain ranges of the Sierra de Guadarrama, Sierra de Gredos and the Sierra de Estrêla. Manley and Allcard (1970) state that it is to be found in all parts of the Peninsula, although it has never been their experience to find it in abundance.

Scarce Swallowtail: *Iphiclides podalirius feisthamelii* Duponchel Sierra de Guadarrama: one, Miraflores, 12.v. Sierra de Gredos: one, Oropesa, 19.v.

Like *machaon*, this species is also considered by Eitschberger and Steiniger (1973b), who have searched for it in many localities, to be rather solitary and sporadic in its distribution, while de Freina (1975) remarks that it seems faithful to its preferred haunts and that he has only found it in elevated places.

Spanish Festoon: *Zerynthia rumina* L. Sierra de Guadarrama: common around Guadalix and Miraflores, especially in open clearings of Pyrenean Oak woods. Here 2nd instar larvae were found

singly, or in twos and threes on birthwort *Aristolochia pistolochia* L., 12.v. Sierra de Gredos: locally plentiful in the foothills around Arenas de San Pedro and also on the Cerro del Agulla near the River Tiétar between Candeleda and Corchuela, 17-22.v.

Black-veined White: *Aporia crataegi* L. Sierra de Gredos: several. Cerro del Agulla, near River Tiétar, 21.v.; two flying on flowery bank below the Canal de Rosarita, near Madrigal de la Vera, 21.v. (one collected by D.F.O.).

Presumably those we saw belong to the race *rutae* Bryk: de Freina (1975) recorded it in the Sierra de Guadarrama at El Escorial in June, 1973.

Large White: *Pieris brassicae* L. Sierra de Guadarrama: frequent around Miraflores, 11-14.v.; Sierra de Gredos: fairly common 17-22.v.; a few seen migrating north over the Puerto del Pico, 23.v. (*q.v.*).

Eitschberger (1970) and Eitschberger and Steiniger (1973b) found the apparent scarcity of this species puzzling during collecting trips to Spain in 1969 and 1972.

Small White: *Artogeia rapae* L. Sierra de Guadarrama: frequent around Guadalix, Miraflores, Puerto de Canencia and above Rascafria, 11-15.v. Sierra de Gredos: common, 16-23.v., in foothills between Madrigal de la Vera and Arenas de San Pedro; 360 per hour seen migrating north over the Puerto del Pico, 23.v. (*q.v.*).

Green-veined White: *A. napi* L. Sierra de Guadarrama: frequent around Miraflores, 11-14.v., including glades in pinewoods at around 1,500 m.; also at ca. 1,400 m. on mountain slopes above Rascafria on 15.v. Sierra de Gredos: frequent in foothills between Madrigal de la Vera and Arenas de San Pedro, 16-23.v.; a few seen migrating north over the Puerto del Pico, 23.v. (*q.v.*).

Bath White: *Pontia daplidice* L. Sierra de Guadarrama: one, Guadalix, 11.v.; apparently frequent around Miraflores 11-14.v. Sierra de Gredos: apparently common in foothills between Madrigal de la Vera and Arenas de San Pedro, and southwards on the Cerro del Agulla and the Sierra del Agulla, 17-23.v.; as already mentioned, this species was present in small numbers with other migratory species in the steep valley leading up to the Puerto del Pico on 23.v., but we did not obtain any clear evidence of its involvement in the migration we observed through that pass at midday on that date. As we only caught and examined a sample of the butterflies we saw and found it difficult to separate this species from *Euchloe simplonia* Freyer by sight when on the wing, we were unable to establish a precise idea of the relative abundance of the two species.

Dappled White: *Euchloe simplonia* Freyer. Apparently common on open ground in most of the places we visited in the Sierra de Guadarrama and Sierra de Gredos regions, including Miraflores, Poyales de Hoyo, Candeleda, Arenas de San Pedro, below the Puerto del Pico, Madrigal de la Vera, Cerro del Agulla and Sierra del Agulla.

Orange Tip: *Anthocharis cardamines* L. Road from Santander to Burgos 10.v.: one male at Puerto de Carrales (1,020 m.), common at Pesquera de Ebro along the banks of the Ebro where it flows through a deep gorge; Sierra de Guadarrama: a few, Guadalix, 11.v., common in the Pyrenean Oak wood near Miraflores, 11-14.v., and also on the mountain slopes above Rascafría, 15.v. Not met with in the Sierra de Gredos or its environs.

Morocco Orange Tip: *A. belia euphenoides* Staud. Sierra de Guadarrama: common around Miraflores, 11.14.v., especially in the wood of Pyrenean Oaks. Frequent on the mountain slopes above Rascafría, 15.v. Sierra de Gredos: common locally in the foothills between Madrigal de la Vera and Arenas de San Pedro, and in the steep valley leading up to the Puerto del Pico.

Clouded Yellow: *Colias crocea* Geoff. Sierra de Guadarrama: frequent around Miraflores, 11-14.v.; two near Guadalix, 11.v. Sierra de Gredos: common in the southern foothills and on mountainsides, and here and there in flowery fields in the plain to the south, 17-22.v.; 250 per hour migrating north over the Puerto del Pico, 23.v. (*q.v.*). A small proportion of the females were of the variety *helice*.

Pale Clouded Yellow: *C. hyale* L. Road from Santander to Burgos, 10.v.: one. Sierra de Guadarrama: none seen; Sierra de Gredos: as least one and a few other possibles migrating north over the Puerto del Pico, 23.v. (*q.v.*). There are apparently few authenticated records of this species in Spain and its status is uncertain (Manley and Allcard 1970). Eitschberger and Steiniger (1973b) and de Freina (1975) did not encounter any during their visits to the Guadarrama and Gredos ranges.

Berger's Clouded Yellow: *C. australis* Verity. Sierra de Gredos: several identified, including a few migrating north with *crocea* over the Puerto del Pico, 23.v.

Brimstone: *Gonepteryx rhamni* L. Road from Santander to Burgos, 10.v.: several at Puerto de Carrales (1,020 m.), common at Pesquera de Ebro; Sierra de Guadarrama: frequent in pinewoods at ca. 1,500 m. between Miraflores and Canencia, 13.v., also at ca. 1,400 m. on mountain slopes above Rascafría on 15.v. Sierra de Gredos: frequent in the foothills between Madrigal de la Vera and Arenas de San Pedro, 16-23.v.

Cleopatra: *G. cleopatra europaea* Verity. Pesquera de Ebro, north of Burgos: common, 10.v. Not seen elsewhere.

Wood White: *Leptidea sinapis* L. Sierra de Guadarrama: a few noted in woods dominated by Pyrenean Oak *Q. pyrenaica*, near Miraflores, 11-14.v. Sierra de Gredos: a few encountered in the foothills between Poyales de Hoyo and Candeleda, 17-22.v.; Madrigal de la Vera: one collected 18.v.; several on shady banks of the Canal de Rosarita, 21.v.

(To be continued)

## Notes and Observations

TREASURER'S NOTICE. - I am pleased to announce that the subscription to *The Record* for 1984 (Volume 96) will remain at £10.00 (U.K.) and £11.50 (Overseas). - P. J. JOHNSON.

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BOOK TALK SIX. - That impressive, finely illustrated work *The Lepidoptera of the British Islands* by Charles Golding Barrett (1836-1904), is still regarded as the most authoritative account of the subject despite its age. Published from 1893-1907 in 11 volumes 8vo. large paper, it contains 504 hand coloured plates, the quality of which can vary considerably in different sets. In the earlier or subscribers' copies the colouring is superior, whereas in those sets which were coloured up later - the work was still obtainable new from Lovell Reeve the publisher until shortly after the end of World War II - the illustrations tend generally to be relatively poor. In my own copy which belonged to E. A. Atmore, who collaborated with the author, the illustrations are among the finest I have seen in this work and contrast favourably with those of the original pattern plates in the Department of Entomology, British Museum (Natural History), with which they have been compared by kind permission of the Librarian.

The work was evidently published originally in parts with printed wrappers, but with what frequency these parts were issued is not known. I have only seen one example in parts, and that is very incomplete. It is in the library of Mr. D. S. Burrows and collates as follows: Part 35, 1896, pp.1-32, plts. 137-140; Part 38, 1897, pp. 97-128, plts. 149-152; Part 39, 1897, pp. 129-160, plts. 153-156; Part 42, 1897, pp. 225-256, plts. 165-168; Part 43, 1897, pp. 257-288, plts. 169-172; with each part printed on the wrapper "Price 3s Plain, 5s Coloured". I have not seen a copy with the plates uncoloured, though there is of course the ordinary 8vo. unillustrated edition which is not rare.

After the author's death, Richard South undertook responsibility for seeing the final portion of the MS. through the press and so enabled volumes 10 and 11 to be published. Subsequently, in 1907, there was published separately, both in large paper and in ordinary 8vo., a most useful pamphlet of 20 pages (including title page and verso), listing alphabetically every species (with synonyms) mentioned in the work, together with the references to plate, volume and page numbers, and entitled *Alphabetical List of Species contained in C. G. Barrett's Lepidoptera of the British Islands forming a Supplementary Index to that Work*. The remaining stock of this index was acquired by Mr. L. Christie, 129 Franciscan Road, Tooting, London SW17 8DZ, from whom copies are still obtainable at the time of writing. - J. M. CHALMERS-HUNT.

COLIAS CROCEA IN 1983. — We have received so many reports of sightings of this butterfly this year that it would be impossible to publish them all. They range from Cornwall to Kent and Essex, north to Westmorland (vc.69), and to Breconshire in Wales. We hope in due course to produce a summary of its occurrence in the 1983 Migration Report. — J.M.C.-H.

BUTTERFLIES AT M. V. LIGHT AND AN AGRIS CONVULVULI. — On 17 August 1983 in the Burren, a Grayling entered the trap and refused to leave. The next night a Wall was attracted and on 19 August it was a Speckled Wood. On the night of 20, I operated at Kylemore, Connemara, when the next morning revealed a Peacock sharing an egg carton with a worn Convolvulus Hawk. All four nights were mild and muggy. R. G. CHATELAIN, 65 East Drive, Orpington, Kent.

A SECOND NORFOLK RECORD OF DORCATOMA SERRA PANZ. (COL.: ANOBIIDAE); AND A CORRECTION. — On 22nd June, 1981, I swept a *Dorcatoma* from tangled mixed foliage in a row of straggly trees in a lane at Catfield Fen, E. Norfolk, which to my surprise proved to be a fine fresh male of *D. serra*. There is one previous record known to me for the county, from Swainsthorpe near Norwich by the late F. D. Buck; I do not have the date, but it would be about 40 years ago. The species is very local and usually rare but, like any of the genus, can sometimes be found in plenty when its breeding-place (various tree fungi) is discovered. There were some rather decrepit alders where the Catfield specimen was taken, one of which no doubt was the source.

In a recent note on *Dorcatoma* spp. in Kent (*antea* 115-6) I mentioned that there appeared to be no Kent record of *D. dresdensis* Hbst. Since then Mr. E. G. Philp has kindly informed me of a record of Capt. J. A. Stephens having exhibited specimens of *dresdensis* from Cobham Park in 1944, reported in *Proc. S. L. ent. nat. Hist. Soc.*, for 1944-5, p.19. This is of interest in offering a conceivable explanation of Fowler's VCH record of *D. flavicornis* "in fungi on trees" at the same locality by J. J. Walker, on which I commented in the above note. If we can believe that the species found by Walker was actually *dresdensis* — a bare possibility — long before it was known to be British, Fowler's puzzling reference to tree fungi is accounted for.

An earlier Kent record of *D. dresdensis* has come to light, not known to either Mr. Philp or myself at the time of writing the above. A visit to the BMBH has revealed three specimens with data 'East Malling, 10.v.42, A. M. Masee, bred ex *Polyporus*'. Dr. Masee must surely have published this discovery, but I have seen no note of it. — A. A. ALLEN.

THE SMALL BLUE: CUPIDO MINIMUS FUESS. IN CUMBRIA. — On July 8 1983 I discovered a colony of the Small Blue in Cumbria. In a careful three hour search in ideal weather conditions, I located

seven (and possibly eleven) separate individuals flying with Small Heath, Common Blue, and Meadow Browns. The food plant (*Anthyllis vulneraria*) was locally abundant. This being at a rather late date in what was an already late season, some specimens were a little worn but at least one male was freshly emerged. Whilst localised, individuals were prepared to range for up to 50 metres and were difficult to follow for long periods, for although relatively slow and low flying, they were readily lost against the background in the bright conditions pertaining. To my knowledge this is the first reported record for Cumbria within the last decade where the species was thought to be possibly extinct. It is also perhaps the first record for several years for North West England as a whole. The locality which is a warm sunny bank and flat below, is in a previously unrecorded 10 km square for this species, (*Distribution Maps of the Butterflies for the British Isles*, Ed. J. Heath, 1982), but for obvious reasons the site is not disclosed. Several specimens were photographed, but none were taken. I hope to further monitor the progress of this colony in future years and it is hoped that it will be unaffected by any form of commercial development or by collectors. — M. J. Y. FOLEY, 87 Ribchester Road, Clayton-le-Dale, Blackburn, Lancs.

ON THE OCCURRENCE OF *DANAUS CHRYSIPPUS* L. IN TUNISIA IN 1983. — Further to the remarks on this butterfly by J. F. Burton (*Ent. Rec.*, 94: 208), I may add that I too had the wonderful experience of seeing this butterfly on the move in Tunisia. On July 10th 1983 while on a birdwatching expedition with a colleague Dr. Charles Galea Bonavia, a number of specimens of *D. chrysippus* were noted. They were flying in a NNW'ly direction across the vast glasswort plain adjacent to the west sector of Kairouan, during a shade temperature which increased to 40°C by noon while the wind remained relatively calm throughout the day.

The first specimen was observed at 0725 hrs. and a total of 13 butterflies was seen up till 0910 hrs. No more were accounted for until later on in the afternoon of that day, when at 1715 hrs. a further four were sighted sailing over the locality in the same general direction. Three days later (13/7) we travelled to El Kef, a bus journey lasting some 3½ hours across almost 200km of countryside. During a short stop along the route in an area known as La Kesra (approx. 80km from Kairouan), we spotted yet another specimen: further evidence that the species was heading towards the Maghreb coast and possibly crossing the Mediterranean to southern european localities.

On arrival at El Kef we sought accommodation at the local Youth Hostel, afterwards strolling around the grounds where we caught sight of another *chrysippus* at 1625 hrs. (13/7). The writer is indebted to Mr. Anthony Valletta, F.R.E.S., for his valuable advice. — L. F. CASSAR, Villino Fralimar, Nazju Ellul Road, Msida, Malta.

HYDRELIA SYLVATA D. & S: TESTACEATA DON. (LEP.: GEOMETRIDAE) — LARVAL FOODPLANT IN MID-KENT. — It has long been thought that the larvae of this moth fed here upon sweet chestnut (*Castanea sativa*), — the moths were frequently observed resting on these trees, but Chalmers-Hunt in his 'Lepidoptera of Kent' states for this species — foodplant unknown. On August 16th, 1983, I visited a sweet chestnut plantation last coppiced several years ago, near Barming, and by beating the lowest branches which were just within reach secured half a dozen of the quite distinctive larvae. A month earlier, on July 18th, one m/v light within half an hour had attracted about one hundred *H. testaceata*, the vast majority of which were males, and almost all specimens were melanics approaching, or of the form, *goodwini* Banks. Undoubtedly, in these woodlands, sweet chestnut is not only the major larval foodplant, but probably the only one. — B. K. WEST, 36 Briar Road, Bexley, Kent.

## Current Literature

### Tabellen En Verspreidingsatlas Van De Nederlandse Microlepidoptera.

A4 format. limp. **PART I: Pyralidae** by J. H. Kuchlein, F. Leffef & R. H. Kleinpaste. 77pp: 149 figs: 99 maps. Pub. 1980 (now reprinting). **PART II: Pyralidae, Pterophoridae** by J. H. Kuchlein & C. Gielis. 86pp: 119 figs; 113 maps. Pub. 1982, price 21.75 Dutch Florins. Obtainable from Agricultural University, Centraal Magazijn, De Dreyen 4, Wageningen, Netherlands.

The title of this series of publications translates as "Keys and distribution atlas of the Dutch microlepidoptera". Part I covers the sub-families Galleriinae, Crambinae and Phycitinae whilst Part II covers the Pyralinae, Pyraustinae and Pterophoridae. Between the two parts, 211 species are considered.

The works are essentially illustrated keys together with distribution maps (for the Netherlands) and brief notes on the biology and occurrence of each species. The illustrations comprise diagrams of wing patterns, genitalia and other structures for selected species very much in the style of the text figures in "British Pyralid and Plume Moths" (1954) by B. P. Beirne, but in the opinion of the reviewer these illustrations are far superior to those in Beirne. A considerable amount of information is available to the patient reader with no knowledge of Dutch, and with a dictionary it is (just!) possible to creep through the keys.

The reviewer was unable to translate enough of the text to comment on its accuracy, but the quality of the figures makes them a worthwhile purchase for the serious student of the Pyrales. It is a great pity that the publishers did not follow the example of the "Fauna Entomologica Scandinavica" series in choos-

ing English as the text language, for had they done so there is no doubt that they would have enjoyed substantial European sales. — PAUL SOKOLOFF.

**The Study of Stoneflies, Mayflies and Caddis Flies** by T. T. Macan. 44pp. and 17 text figs. Stiff wrapper. The Amateur Entomologist, volume 17. 1982. £2.70 inclusive. Obtainable from: AES Publications, 4 Steep Close, Green Street Green, Orpington, Kent BR6 6DS.

Here we have another of those inexpensive, handy and admirably practical monographs for which the AES is so renowned, attractively written by an authority of high repute. A brief general introduction on collection, equipment, methods and identification is followed by accounts of the Plecoptera (about 9pp.), with habitats of the larvae and adult, life history, food of larvae; then the Ephemeroptera (about 15pp.), with structure and development, food, life history, habitat of the various species, ecological factors, the adults, mating and oviposition; and finally, the Trichoptera (about 14pp.), with literature, description, the adult, eggs, larvae, pupa, classification, life histories, general distribution, ecology, migration, food, trichoptera and man. The enlarged (for the most part) illustrations add considerable interest, and a list of 34 bibliographical references completes the booklet. — J.M.C.-H.

**Annales Historico-Naturales Musei Nationalis Hungarici** (abbreviated to *Ann. H-N.*), and **Acta Zoologica Academiae Scientiarum Hungarici** (abbreviated to *Acta Zool.*).

I have received from Dr. A. M. Vojnits a series of separates of his papers on mainly oriental Eupitheciid and one or two other Geometrid species. These papers are in the English language and are illustrated by clear line-drawings of genitalia dissections, and include several new species and sub-species. I list below the titles and references of these papers, which appear in either one or other of the above periodicals.

(1) Archiariinae, Rhodometrinae, Geometrinae II, Sterrhinae II and Ennominae III (Lepidoptera, Geometridae) from Mongolia. *Ann H-N.* 69: 165-175, 1977. (2) New *Eupithecia* Species and Sub-species from Asia and North Africa. *Acta Zool.* XXIII, 1-2: 227-236, 1977. (3) Geometridae Eupitheciinae III (Lepidoptera). *Acta Zool.* XXIII, 3-4: 461-485 1977. (4) Larentiinae (Lepidoptera) Geometridae) from Mongolia: *Ann. H-N.* 70: 191-195. 1978. (5) Eupithecini from Korea and China. *Acta Zool.* XXIV, 1-2: 225-252. (6) Investigations in the "*Eupithecia scalptata-syriata*" Group (Lepidoptera, Geometridae). *Acta Zool.* XXIV, 3-4: 431-438, 1978. (7) Data to the *Eupithecia* Fauna of China (Lepidoptera, Geometridae) *Acta Zool.* XXVI, 4: 433-449, 1980. (8) Data to the *Eupithecia* Fauna of Nepal I. (Lepidoptera, Geometridae) *Acta Zool.* XXVII, 1-2: 217-238. 1981. (9) Data to the *Eupithecia* Fauna of Asia (Lepidoptera, Geometridae) *Ann. H-N.* 73: 221-237. 1981.

(10) On Some Chinese *Eupithecia* Material Collected by H. Höne (Lepidoptera, Geometridae). *Acta Zool.* XXVII, 3-4: 407-430, 1981. (11) A Revision of the "*Eupithecia innotata* Group" I (Lepidoptera) Geometridae). *Ann. H-N.* 74: 217-239, 1982. (12) New *Eupithecia* Species from the Asiatic Regions of the Soviet Union and Iran. *Acta Zool.* XXVIII, 3-4: 403-420, 1982.

The quoted periodicals are obtainable from: Blackwell's Periodicals, Oxenford House, Magdalen Street Oxford. Collet's Subscription Import Department, Denington Estate, Wellingborough, Northants. Robert Maxwell and Co. Ltd., 4-5 Fitzroy Square, London W. — S.N.A.J.

**Butterflies of the Yemen Arab Republic** by **Torben B. Larsen**, with a **Review of Species in the *Charaxes viola* Group from Arabia and East Africa** by **Dr. A. H. B. Rydon**. Three coloured and two other plates; paper wrappers. Royal Danish Academy of Sciences and Letters. Obtainable from: Munksgaard Export and Subscription Service, 35 Norre Sogade, DK 1370 Copenhagen K, Denmark. Kronen 120,00.

In this survey of the butterflies of the Yemen Arab Republic the author has followed a similar scheme to that used in his well known book on The Butterflies Of Lebanon. An introduction outlining the very restricted history of butterfly research in Yemen is followed by a comprehensive bio-geographic description of the country and brief comments on the author's own experiences there in May 1980. In the systematic part Torben Larsen draws on the meagre published information and some unpublished data, as well as his own records. 106 butterfly species are listed in this section but a further 13 are included in a postscript, most of these additions being a result of a further visit to Yemen by the author. Some of the species resulting from these two visits were not only new to the Arabian peninsula but three of them were new to science. In my opinion the outstanding feature of all of Larsen's writing, however, is in the interesting personal observations he includes of habits, foodplants, and general ecology. This paper is no exception.

In the Appendix, Dr. A. H. B. Rydon has contributed an interesting paper on aspects of the taxonomy of the *Charaxes viola* group. This includes descriptions of three new species, one of them *Charaxes bernstorffi*, collected in the Yemen for the first time by him in May 1980 and the only member of this group to have been recorded from Arabia. The other two new species described are both from south west Ethiopia *Charaxes smilesi*, previously lumped with *Charaxes daria* Van someren and Jackson; and *Charaxes larseni*, also a member of the *viola* group. Other members of which are discussed in this paper. Para. 7.

This joint publication concludes with five plates, (three in colour) of Yemen butterflies and their habitats; and illustrations of some of the closely related *Charaxes viola* group — including the three new species. — C. J. LUCKENS.

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## TO OUR CONTRIBUTORS

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# SPECIAL INDEX

COMPILED BY S. N. A. JACOBS (LEPIDOPTERA)  
AND A. A. ALLEN (OTHER ORDERS)

For British Lepidoptera this Index follows the nomenclature of *A Check List of British Insects*, Part 2 by Kloet & Hincks (1972), brought up-to-date to correspond with the *Label List of British Butterflies & Moths* by Bradley & Fletcher (1979). Where a contributor has used a synonym, a cross reference is given. Any newly described taxa (species, genera, etc.) are distinguished by bold (Times) type, and taxa new to British or newly recognised as British by an asterisk. Moreover, with *Orders other than Lepidoptera*, (1) A bracketed asterisk denotes the reinstatement of a species long omitted from the British list, or the confirmation of one previously doubtful; (2) A formerly subspecific taxon raised to specific rank is treated as an addition to the fauna, but a correction of identity is not; and, finally (3) The "equals" sign indicates a *new* synonym, i.e. published for the first time; italics without this sign, recent synonymy that may be unfamiliar to many.

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