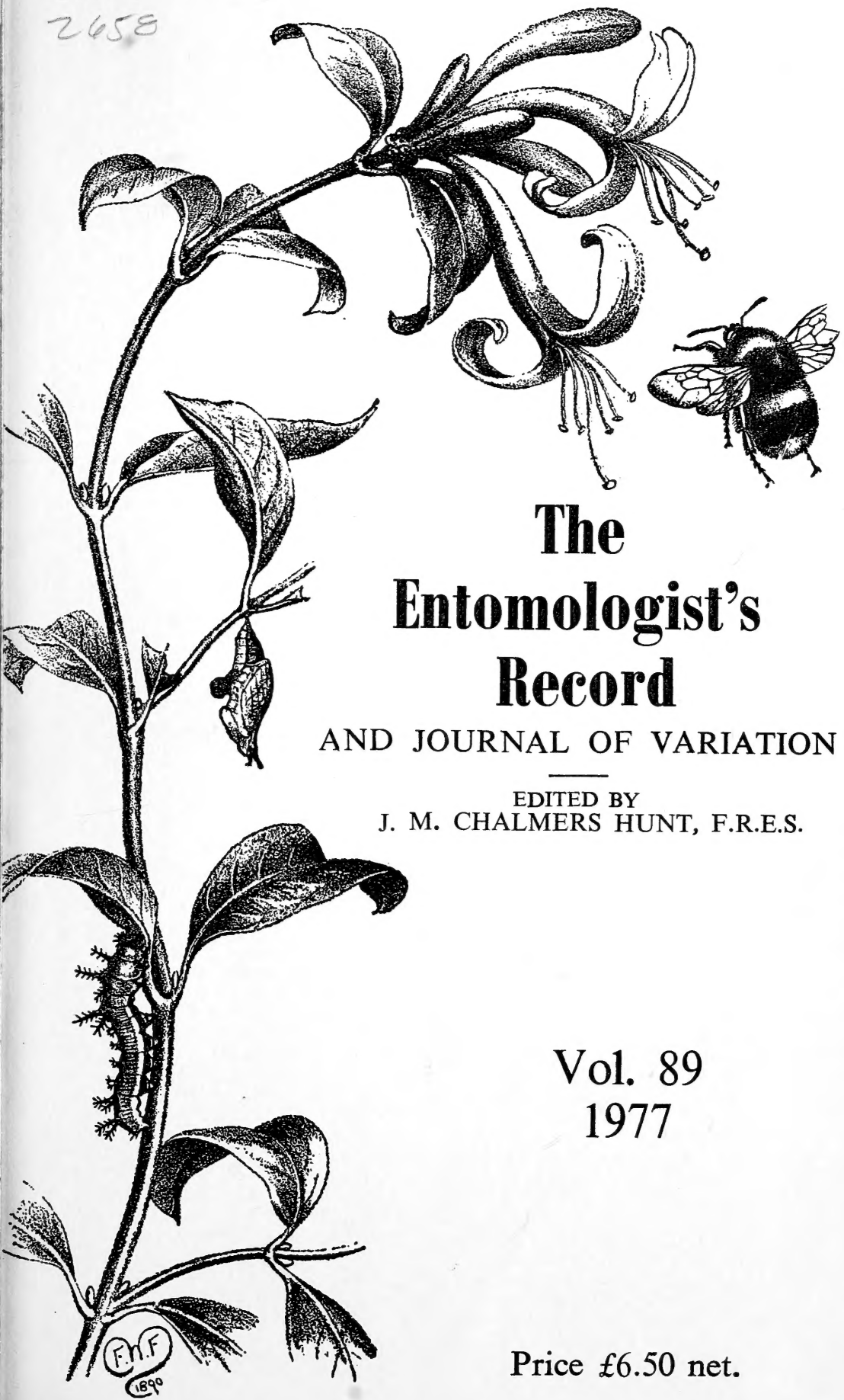

The Entomologist's Record

AND JOURNAL OF VARIATION

EDITED BY
J. M. CHALMERS HUNT, F.R.E.S.

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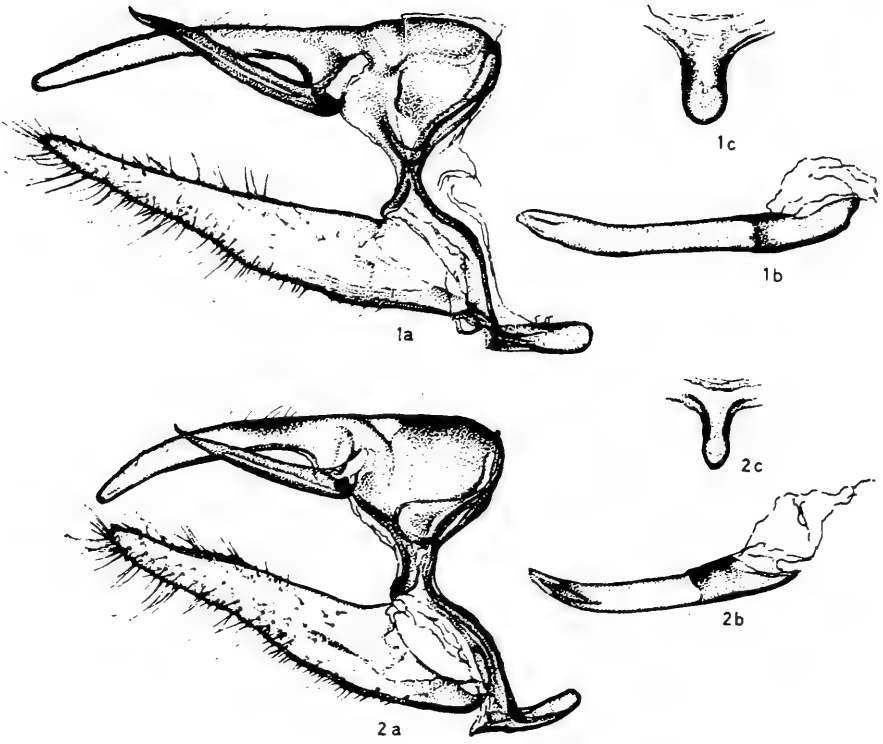
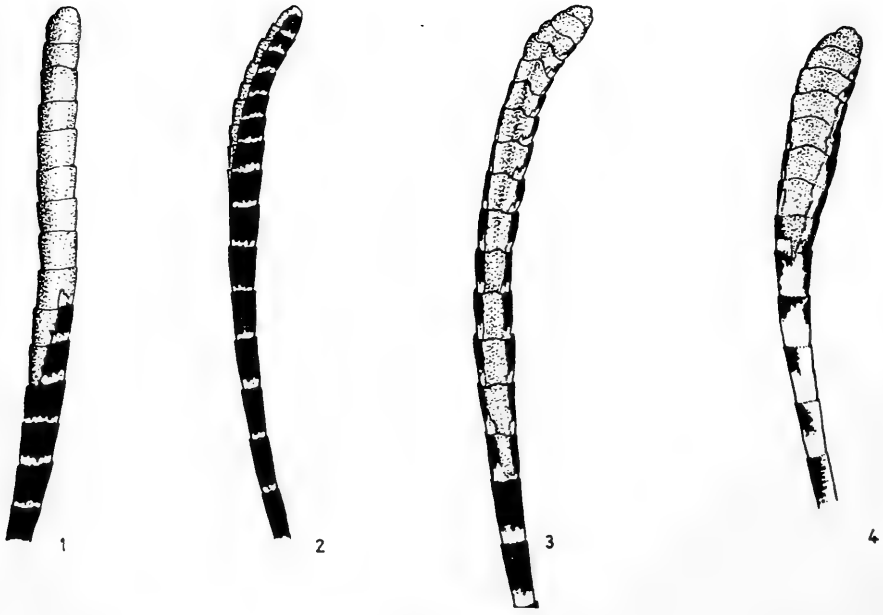
Plate I





Notes Concerning the Taxonomic Status of *Coenonympha thyrsis* Freyer

By John G. Coutsis, M.Arch.*

Coenonympha thyrsis Freyer, an endemic of the island of Crete, was originally described as a good species, but has since been regarded by many authors as a subspecies of *Coenonympha pamphilus* Linnaeus on the basis of superficial affinities toward certain south European forms of the latter and especially toward subspecies *sicula* Zeller, from Sicily.

The various subspecies and forms of *pamphilus* have been defined on the basis of a set of superficial characters involving the width and degree of definition of the dark marginal borders on the upperside, the degree of definition of the oblique postdiscal bar on underside of forewing, the presence or absence of small postdiscal spots on hindwings both upperside and underside and by the ground colour and shade arrangement of hindwing underside.

C. thyrsis differs from *pamphilus* in ways that are outside this set of differences and in a number of rather diverse points.

C. pamphilus is multivoltine and flies in the most southern parts of its range from April till October. *C. thyrsis* is univoltine and flies from May till about end of June. The former is a colony insect within the southern part of its range and is rather localised in areas with a certain degree of moisture. The latter is found practically everywhere within its area of distribution and may be observed flying about even in the driest of situations. The genitalic apparatus of male *thyrsis* differs from that of *pamphilus* by the shorter uncus, falces, valvae and aedaeagus and especially by the much slenderer saccus, which is about half the width of that of the latter. In *thyrsis* the underside of both the forewings and hindwings always has an indented antemarginal silver line, whereas in *pamphilus* this line is always absent. The distal end of the antenna of male *thyrsis* lacks scales all around, while that of

Plate I

1. *Coenonympha pamphilus* Linnaeus, Krania, Pindos Mts., Central Greece, 1,000 m., 13th May.
   (a) Genitalic apparatus with right valva and aedaeagus removed (side view); (b) Aedaeagus (side view); (c) Saccus (ventral view).
2. *Coenonympha thyrsis* Freyer, Lefka Ori, Crete, 1,500 m., 12th June.
   (a) Genitalic apparatus with right valva and aedaeagus removed (side view); (b) Aedaeagus (side view); (c) Saccus (ventral view).

1. Side view of distal end of antenna of male *C. thyrsis,* Faranghi Samarias, Crete, 1,000 m., 12th June.
2. Side view of distal end of antenna of male *C. pamphilus,* Mt. Rhoditis, Lesvos Island, Greece, 24th June.
3. Ventral view of distal end of antenna of female *C. thyrsis,* Road to Kataphygion, Lefka Ori, Crete, 1,200-1,700 m., 12th June.
4. Ventral view of distal end of antenna of female *C. pamphilus,* near Langadha Pass, Mt. Taygetos, Peloponnese, Greece, 1,300 m., 11th June.

* 4, Glykonos Street, Athens 139, Greece.

male *pamphilus* has a bald patch ventrally, that extends from the tip to about the eighth segment from it. The distal end of the antenna of female *thyrsis* has a bald patch ventrally that extends from the tip to about the fifteenth segment from it, while that of female *pamphilus* has a bald patch ventrally that extends from the tip to about the eighth segment from it.

The degree, constancy and broad range of these differences, as well as their deviation from the set of differences separating the various subspecies and forms of *pamphilus* from each other, suggest that *thyrsis* and *pamphilus* should be considered as being separate species, despite superficial affinities between the two and allopatry.

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Apatura iris L. — A Second Brood Specimen. — In the exceptionally hot weather this summer the Purple Emperor was out at least two weeks ahead of its normal emergence period. Of 42 pupae on sleeved sallow in our garden 18 emerged before the end of June (including several females) and on 30th June my wife and I saw a female *iris* settled on the ground in a Wiltshire wood. On the same day a captive hand-paired *iris* had already commenced ovipositing and larvae appeared after only five days. One of these early larvae grew rapidly undergoing all four moults and finally pupated on 12th September. The perfect insect, a smallish female, emerged three weeks later on 3rd October. The whole life cycle took place on the same sleeved sallow without forcing of any kind. — Dr. C. J. Luckens, 52 Thorold Road, Bitterne Park, Southampton, SO2 4JG.

A Late Vanessa io L. Larva. — Baron de Worms' note on late Peacocks (*Ent. Rec.*, **88**: 264) reminds me that I saw a fully-fed *io* larva on the inside wall of my garage here, clearly looking for somewhere to pupate, as late as last Sunday, 23rd October. This is almost unbelievably late for a larva, and since a number of imagines were flying in my garden during August and September, I think it very likely that this represented a second brood. Unfortunately I was unable to give time to box it at that moment, and it had disappeared on my return later. I wonder if it will emerge and, if so, when? — N. A. Watkins, Hazel Mead, Priory Road, Easton-in-Gordano, Nr. Bristol, BS20 0PR, 27.x.76.

A Few Days on the Isle of Wight in June, 1976

By G. Summers*

On 9th June, 1976 I crossed on the ferry from Southampton to Cowes on my first visit to the Isle of Wight hoping to see *cinxia* in particular (a new species for me) and also to have a look at the lepidoptera in general. I stayed at Bonchurch and upon reaching my destination took an early opportunity to explore nearby St. Boniface Down and resolved to visit the Niton Undercliff for *cinxia* next day.

It was very windy on the day of my arrival but the remainder of my five-day stay was warm and sunny, with the exception of the 12th which was dull and misty. On this day I walked from Alum Bay to Freshwater, including Tennyson Down, and the unsuitable weather, although improving later, accounts for the paucity of records from this locality.

Other areas visited were Sandown, Shanklin, Blackgang, Brading Down and a further look at St. Boniface. I confined my activities to the south of the island, visiting no woodlands, and these factors have resulted in several omissions of butterfly species which were on the wing at this time of the year. The complete list follows hereunder.

Speckled Wood (*Pararge aegeria* L.). Fairly common on St. Boniface Down and along the Niton Undercliff. A few at Freshwater, Bonchurch, Landslip and on Brading Down. Usually around the trees and bushes. Wall (*Lasiommata megera* L.). Singles at Sandown, Shanklin, Freshwater and Bonchurch. About six on St. Boniface Down. Meadow Brown (*Maniola jurtina* L.). Probably only just on the wing. Most seen on Brading Down, but fairly common on St. Boniface with a few at Freshwater, Bonchurch and along the Undercliff. Small Heath (*Coenonympha pamphilus* L.). Very common on Brading and St. Boniface Downs. Common between Alum Bay and Freshwater, along the Undercliff and at Bonchurch. Glanville Fritillary (*Melitaea cinxia* L.). As already mentioned, this was the main quarry and was quite easily located in the well-known area of the Undercliff near Niton. About 30 individuals seen imbibing mainly at Sea Thrift and Bird's-foot Trefoil. Red Admiral (*Vanessa atalanta* L.). Singles between Sandown and Shanklin, at Brading and at Bonchurch. Undoubtedly this and the next two species would have been more in evidence in gardens. Painted Lady (*Vanessa cardui* L.). Only one seen—on Brading Down. Small Tortoiseshell (*Aglais urticae* L.). Singles between Sandown and Shanklin, at Freshwater, two at Brading Down and a few on St. Boniface Down and at Bonchurch. Brown Argus (*Aricia agestis* D. & S.). Recorded only on St. Boniface Down in small numbers. The foodplant, Rock-rose, growing here. Common Blue (*Polyommatus icarus* Rott.). Common on Brading and St. Boniface Downs, from Alum Bay to Freshwater and along the Undercliff. A few between Sandown and Shanklin and at Bonchurch.

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Adonis Blue (*Lysandra bellargus* Rott.). Appeared to be in similar numbers to *icarus* on St. Boniface Down. A few along the Undercliff. This and the previous species were almost exclusively found only in the areas where the larval foodplant grows in the localities mentioned. Small Copper (*Lycaena phlaeas* L.). Recorded on St. Boniface Down (four) and the Undercliff (two). Green Hairstreak (*Callophrys rubi* L.). Only one seen—imbibing at Bird's-foot Trefoil along the Undercliff. Large White (*Pieris brassicae* L.). Recorded in all localities visited but in surprisingly small numbers. Some indication of increase at end of stay. Small White (*Pieris rapae* L.). Same remarks as for *brassicae*. The Green-veined White (*Pieris napi* L.) was not seen but may possibly have been overlooked although perhaps preferring different habitats from those visited. Dingy Skipper (*Erynnis tages* L.). Common on St. Boniface Down and recorded in smaller numbers along the Undercliff, with a few on Brading Down, at Freshwater and Bonchurch. Surprisingly the Grizzled Skipper (*Pyrgus malvae* L.) was not located. Large Skipper (*Ochlodes venata* Brem. & Grey). Common on St. Boniface Down and fairly common on Brading Down. A few along the Undercliff and at Freshwater and Bonchurch. Like *tages* particularly fond of brambles.

Although mainly looking for butterflies, I recorded any moths caught or otherwise positively identified.

Brading Down produced a beautiful female Cream-spot Tiger (*Arctia villica* L.) hiding in the long grass, a nicely marked Mother Shipton (*Callistege mi* Clerck), two Cinnabars (*Tyria jacobaeae* L.) and four Burnet Companions (*Euclidia glyphica* L.), whilst St. Boniface contributed a Small Elephant Hawk (*Deilephila porcellus* L.), again in the grass, two Yellow Shells (*Camptogramma bilineata* L.), a Heart and Dart (*Agrotis exclamationis* L.), three *mi* and about ten male Fox Moths (*Macrothylacia rubi* L.) in dashing flight across the Down. The last-named were active only on the windy day previously mentioned and none were seen on the second visit to St. Boniface Down when the weather was calm and sunny.

The dull day at Freshwater added only two *bilineata* and a look at the Spur Valerian in the evening at Bonchurch revealed a few Silver Y (*Autographa gamma*).

I left the island on the morning of 14th June, crossing from Yarmouth to Lymington to spend the next nine days in the New Forest.

THE BEAUTIFUL GOTHIC (LEUCOCHLAENA ODITIS HBN.: HISPIDA GEYER) IN SUSSEX IN 1976. — I took a single example of this moth which had entered the m.v. light trap in my garden here on the 21st October. — R. R. PICKERING, 123 Manor Way, Aldwick Bay Estate, Bognor Regis, Sussex. [This seems to be the furthest east occurrence in Britain of this local Devon and Dorset speciality, and the first record of this species for Sussex. I have seen the specimen and it is in quite good condition. — J.M.C.-H.]

Commercial Entomology — or is One Man's Rarity Another's Livelihood?

By Brian O. C. Gardiner*

The subject about to be discussed is one which in recent years has become a subject of some controversy. There are, however, several aspects to the question "One man's rarity is another's livelihood" but I think the most important one of all, nearly always overlooked, and which I would like to emphasise, is this: if there were no customers there would be no traders. Who then are the customers? My guess is that at some time or other all entomologists have been customers of some entomological trader or other. And if we are to ask who is the customer, then we must also who, and perhaps what, is a trader? This is nothing new. The argument about who is a dealer and who is an amateur entomologist has been going on for a century and a half. Anybody who cares to browse through the pages of the *Entomologist's Weekly Intelligencer,* published in the middle of the last century will be amply rewarded by the arguments put forward, for and against, the "amateur"—and I say "amateur" in inverted commas—dealer.

Without a customer we do not have a trader. So who is a trader? How do we define him? Where do we draw the line? Is a trader one who retails insects? and if so, does he collect them for sale, or simply act as a depot, buying from wholesalers and being simply a shopkeeper. Or is, as many conservationists will have it, anybody who ever exchanges an insect also a trader?

Is a professional entomologist to be defined as a trader? I myself am a professional entomologist. I make my living from insects and am paid for it. This does not, of course, mean that I rush out and catch every insect in sight, and out of sight if I can! And I think it is this aspect of trading which apparently, and in my opinion very wrongly not to mention erroneously, brings down the castigation of the conservationists and others who are apparently opposed to all dealing whatsoever in insects.

While it is quite clear that a person who buys wholesale and sells retail is quite clearly a trader, how do we define the following cases? Firstly, the museum which swaps specimens—these specimens after all have been collected in the first place; and secondly, the professional entomologist—I can think of no other term for him—who is deliberately employed to collect insects. He may be employed full or part-time, by an individual, a consortium, a museum, or all three at the same time.

I think it is perhaps worthwhile taking a look at some of these traders and those who employed them. A lot of it makes most interesting reading, there still remains much to be ferreted out of the literature and/or old documents and for those interested I would heartily recommend browsing through

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the entirety of the *Entomologist's Weekly Intelligencer,* which I have already mentioned, and also the delightful chapter or so about dealers and their machinations which appear in the late P. B. M. Allan's books—*Talking of Moths* in particular. Other most interesting items to read are the covers of early issues of the entomological journals. I am perhaps fortunate in that I have an almost complete set of *The Entomologist,* with the majority of the covers of the monthly parts bound in. It is very sad that this journal is now demised.

It is difficult to discover who was the first person to trade in insects. It seems almost certain, however, that Madam Sybilla Merian, the famous Dutch lady entomologist, employed people to collect for her. Our own Ray, Albin and Petiver probably did the same. Certainly during this period (17th century) there was constant interchange of specimens amongst the naturalists of the time.

Linnaeus did not obtain all those specimens described in *Fauna Suecica* and *Systema Natura* by himself, although in all fairness he did do a prodigious amount of collecting himself, particularly in Sweden. In the latter work he does in fact acknowledge the 500 insects found in Scania by Dr. John Leche. Darwin apparently kicked his paid collector downstairs for giving the first choice of some beetles to rival collectors (Moorehead, 1973). Had they perhaps offered better money?

The first recorded activities of dealers do not show them up in a particularly good light. Towards the end of the 18th century some very desirable insects were turned up in England, including an American skipper and high prices were paid by the now famous collectors of the day who dutifully described the specimens they bought, and some of them are still quoted in our books today. It must be remembered that before the coming of the railways travel was slow, tedious and expensive and the insect fauna of our country was as yet imperfectly known. Most collectors could collect only in their own vicinity and relied on swaps—or exchange—for species localised in other areas. Not unnaturally dealers sprang up to supply the demand and soon found they could make easy money importing from Europe. In the *Ent. Week. Int.* there is a delightful account of a collector accidentally meeting a known dealer in a boat-train from Holland, his baggage full of boxes containing quantities of rare British butterflies and moths.

There were of course many honest dealers about and the best of these openly solicited customers to take shares in their collecting activities in out of the way places, such as the Fens and Scotland. Let us face it, these dealers collected insects for money. They presumably collected as many as they could and this sort of activity was certainly going on for at least a century. With two or three notable exceptions, which I will deal with presently, all—and I think I should repeat that word ALL—the insects they collected so assiduously are still with us today.

As, however, travel has become easier and quicker, so has the desire to exchange British insects become less and less and your average entomologist today prefers to go and collect

his own, confining his buying to exotic species. One has only to study the catalogues of the better known dealers over the last 30 years or so to realise this. Another fact which has become very obvious over the last 10-15 years is the almost complete absence today of auctions of British insects—or indeed of foreign insects—at least in this country. I do not know where all the collections of deceased entomologists now go. Are they snapped up by the dealers rather than going up for auction? It might also be that entomologists' sons now follow in father's footsteps rather more often than they used to. I like to think so, having sons myself. The collections are perhaps being bought up by antique dealers and speculators and there is in fact some evidence that this is indeed so. Insect cabinets are now clearly being put to all sorts of amoral purposes.

The main objections against entomological traders appears to be the belief that they do nothing except catch butterflies, thereby depriving the naturalist public of the sight of these beautiful insects flying around in their favourite haunts. This is of course just not so. Neither now, nor in the past, has the actual catching of insects for sale formed more than a small part of the traders services, unless he be a small part-timer offering some local species on a sale or exchange basis and nothing else.

But let us consider for a moment the traders who went on paid collecting trips. In a sense these people were nothing but the arm of the actual collector who was unable, for reasons of time or finance, to go to certain localities himself. Many of these dealer-collectors not only collected in their own right, they also recorded, and their customers named and described the insects they caught. The backbone of our present day distribution lists, those same lists that were published in Tutt, Barrett and South, was built up to a large extent by these men. Nor did they collect only. I opened the pages headed "Exchange" for the Entomologist for 1880. This contained 22 items of duplicates for exchange and over half of these—12 in fact—were offering bred material, either as eggs, larvae, pupae or set adults bred out. Even a century ago therefore there was a marked emphasis for the quality of bred material. This does not of course mean that traders have not collected intensively. Both they and collectors have indeed done so. And of course if the collector subsequently swapped these specimens then he too could be said to have entered the ranks of the traders. But have they ever caused any species to become extinct and do they indeed still go and collect wild specimens for sale? The answer, certainly so far as this country is concerned, is an emphatic NO. It is also true to say that no species has ever been caused to become extinct by over-collectitng—whether it be by traders or collectors. Now why is this? The answer, of course, is that man is only one predator amongst many that prey on insects.

But let us consider first why traders do not go and collect in the wild any more. Although of course this is still done as regards the more remote areas of the tropics, and may still be

done occasionally near home. The answer, of course, is entirely an economic one. *It does not pay*. The time and labour required is far more, for an uncertain return, than that required to breed stock for sale. Either the trader breeds it himself, or else he obtains particular supplies from a specialised breeder. This does no harm at all to the wild populations and the quality supplied is of a very high order. This has been brought about by today's changed demands, for often very large numbers of insects for purposes which may be totally unconnected with collecting—such as research, examinations, publicity displays and film company purposes. Not only do these sources often require live material, but when they specify preserved material only high quality, fresh, unparasitized and uniform material is needed, and this can only be supplied by bred specimens.

It must also be born in mind that traders do not only supply insects. They also supply books, apparatus and often help and advice to the young beginner. They supply the schools in which natural history in all its aspects is taught. They supply publicity not only and always for themselves, but also for the conservation movement which may damn them, and keep the the image of entomology and natural history before the public eye. Witness the books, the radio and television appearances of dealers well known I think not to need naming here. The actual sales of insects is difficult to estimate, but the usage for some purposes is well known. Two tons of pupae were used in one chemical extraction of a hormone to yield a few mgm. I myself have been responsible for rearing 20 kg. of an insect whose average unfed 5th instar weighs 40 mgm. and I should imagine that over the past 20 odd years I have had something like several hundred million eggs of the Cabbage white butterfly pass through my hands. In some American establishments the whole process has been industrialised and hundreds, if not thousands of millions of insects are produced for various purposes. One of these was the production of sterile male screw-worms for release in a successful attempt to eradicate it from large areas of the country. A case of extinction in reverse in fact. A colossal breeding programme was found to be the most successful way of destroying a population, after every effort had been made to do so by collecting.

Compared with these sort of numbers, the sale of butterflies as *objects d'art* is very small indeed, although to see the displays put out in the shops one might imagine it is very large indeed. The number bought by collectors is today no doubt far less than those bought simply as decoration. And is there any real harm in this? In fact there is a lot of good. For one thing it is just this demand that has caused the cessation—for economic reasons already mentioned—in many areas abroad of wild collecting and the switch to breeding—as indeed has happened in Taiwan—actual butterfly farming. Tracts have been cleared, foodplants planted and a number of rare Formosan butterflies have now become comparatively common. If anyone should doubt this, one only has to compare the drastic drop in prices which has taken place over the years.

I feel it is particularly unfortunate that the Joint Committee for the Conservation of British Insects has condemned their use for the manufacture of jewellery. Although they do not say so, I take this to mean the use of *Morpho* wings in silver mounts—a very old established form of jewellery indeed. I say their condemnation is unfortunate because it is the demand for this jewellery that has forced the suppliers to give up collecting and turn to breeding to satisfy the demand. I have this on the authority of a colleague who has been in Brazil, and there was a paper pointing this out in the *Journal of the Lepidopterist's Society* a few years ago from the pen of the well known and respected entomologist E. P. Wiltshire.

Nobody today imagines that all the chickens and rabbits for sale in the supermarkets are wild caught. It is common knowledge that they are "broilers", factory farmed, and since the demand for insects is as great, or perhaps greater, why do people still imagine they are wild caught rather than also factory farmed?

What is actually destroying the butterfly fauna of South America, and indeed other parts of the tropics, is not the activities of the trader/collectors, but the immense sprawl of modern suburbs, airports, motorways and developmental improvements generally. It is not perhaps sufficiently realised in this country that works such as the Cabora Bassa and Ituri dams, the E-W and N-S motorways through Amazonia are destroying areas the size of one of the larger English counties and probably causing the extinction of species not yet described, as well as many which are. This destruction cannot on any account be laid at the door of the collector, and I can see no reason whatsoever—indeed I think it should be applauded—why traders should not move in front of the bulldozers and remove as much as possible from their path and so preserve it, at least in our collections, for posterity.

(*to be continued*)

Notes and Observations

THE FLAME BROCADE (TRIGONOPHORA FLAMMEA ESP.: EMPYREA HBN.) IN SUSSEX IN 1976. — A specimen of this fine moth came to the m.v. light trap in my garden here on the night of the 14th October during a south westerly gale. — R. R. PICKERING, 123 Manor Way, Aldwick Bay Estate, Bognor Regis, Sussex. [This distinctive and very rare noctuoid appears to have been temporarily resident in Sussex during the latter half of the 19th century. The only previous records to my knowledge of its occurrence in Britain during the present century, are of one taken by S. N. A. Jacobs in a spider's web at Chailey, Sussex in 1921, two taken in Devon (one in 1946, one in 1953), and one in Dorset in 1959. Mr. Pickering showed me his specimen while still on the board: it is in fair condition. — J.M.C.-H.]

THE LONG-TAILED BLUE (LAMPIDES BOETICUS L.) IN NORTHAMPTONSHIRE IN 1976. — The 25th of July was a day to remember. The sun was just coming through and it was a warmish morning as I went into my garden here about 10 a.m. A blue butterfly flew up and settled side-view, on a tomato plant. It was a male Long-tailed Blue (*L. boeticus*), and though in good condition had evidently already flown somewhat by the look of the fringes. This appears to be a new county record, and the only British *boeticus* noticed this season. — J. H. PAYNE, 10 Ranelagh Road, Wellingborough, Northants.

THE CLIFDEN NONPAREIL (CATOCALA FRAXINI L.) IN DORSET. — This moth was seen at a lighted window about 200 yards from the sea at Parkstone on 11th September, 1976. The observer was Miss Brotherton, the Hon. Sec. of the Dorset Naturalists' Trust, not a moth expert, but a thoroughly reliable observer. — Dr. T. NORMAN, The Old Rectory, Winterbourne Houghton, Blandford, Dorset.

THE CLIFDEN NONPAREIL IN YORKSHIRE. — An injured specimen was found on a road at Spurn on 28th August, 1976, it having presumably been knocked down by a passing car. — BARRY SPENCE, Spurn Bird Observatory, Kilnsea via Patrington, Yorks.

ANTIGASTRA CATALAUNALIS (DUPONCHEL) IN NORTH KENT. On 28th September, 1976, Mrs. V. Taylor, who operates a mercury vapour trap at Newington, near Sittingbourne, showed me a newly captured specimen of a Pyraustid moth which I could not immediately identify. The specimen, a female, bore a superficial resemblance to *Nascia* (*Pyrausta*) *cilialis* Hübn. but did not appear to be illustrated in Beirne (1952) *British Pyralid and Plume Moths.* Recourse to the key to the genera of the Pyraustinae in Beirne showed that the specimen could not be a "Pyrausta" since the antennae were too long but agreed with *Antigastra.* I tentatively identified the moth as *Antigastra catalaunalis* (Duponchel). This identification was subsequently confirmed.

The species has a wide distribution throughout Africa, the Near East and Southern Europe and feeds as a larva on *Linaria* and *Antirrhinum* species. Several specimens have been recorded from Southern England at long intervals, for example see *Ent. Rec. J. Var.*, **62**: 88 and *Ent. Rec. J. Var.*, **71**: 138-139. — P. J. JEWESS, 378 London Road, Aylesford, Kent.

MIGRANT LEPIDOPTERA IN 1976. — *Hyles gallii* Rott., Bedstraw Hawkmoth. One larva almost fully grown was brought to this museum on 24.vii.76 by the finder Alison Roberts (age 7). It was found near Keswick, half way up Skiddaw, crawling over the turf between rocks and near to bracken.

Agrius convolvuli (L.), Convolvulus Hawkmoth. One male was found on 24.viii.76 on a footpath in Acorn Road, Jesmond, Newcastle-upon-Tyne (Mrs. Polwarth). A second male was brought on 30.viii.76 from Wreckenton, three miles S.S.-E. of Gateshead (C. Bain). A third specimen was reported on 15.ix.76, taken at Whitley Bay on a garage door by Mr. D. Deas (J. McConway). A fourth specimen (male) was taken on 24.ix.76 at Gateshead and given to Mr. A. Pringle who showed it to me. A fifth was reported to me taken at Newbiggin-by-the-Sea on 27.ix.76 by Mr. Priestley (J. D. Parrack). A sixth (male) was brought from Gateshead on 2.xi.76. It had been found in the morning by a cleaner and was dead but not stiff (J. M. Mulligan). — A. G. Long, Deputy Curator, Hancock Museum, Newcastle-upon-Tyne.

Acentria nivea (Olivier) at Light. — My experiences of this species in Cambridgeshire are similar to those of Mr. R. G. Warren in Staffordshire (*Ent Rec.*, **88**: 136). In late July and early August 1975, I regularly caught *A. nivea* in fairly large numbers at light. Some entered the trap, but most fluttered dizzily on the sheet.

However, although I have caught this species close to potential breeding sites, I have also caught it in places which are a considerable distance from any surface water; a chalk-pit at West Wickham in Cambridgeshire is a particularly favourable locality. This adds weight to Mr. Warren's suggestion that we are witnessing a dispersal flight of this species. — P. J. Johnson, 7 Haverhill Road, Horseheath, Cambridge, CB1 6QR, 23.x.1976.

Calophasia lunula (Hufn.) and other Interesting Moths at Folkestone. — In view of G. H. Youden's note of this species from Dover (*Ent. Rec.*, **88**: 267) on 30th July, 1976, it is worth recording that I took a specimen in fresh condition at m.v. at Folkestone Warren on 23rd June, 1976. The 190 odd species recorded at my single m.v. trap included *Ethmia terminella* (Fletch.), *Anania verbascalis* (Schiff.), *Aplasta ononaria* (Fuess.), *Setina irrorella* (Linn.), *Lithosia quadra* (Linn.), *Diacrisia sannio* (Linn.), *Standfussiana lucernea* (Linn.), *Anaplectoides prasina* (Schiff.), *Hadena albimacula* (Bork.), *Apamea furva* (Schiff.) and *Chilodes maritimus* (Tausch.). — S. E. Whitebread, Hofackerstrasse 7, CH-4132 Muttenz, Switzerland, 5.xi.76.

Aegeria vespiformis L. and Inachis io L. in m.v. trap. — 1976 has produced a record number of moths, though not species, in the m.v. trap in my garden. On the 19th July amongst 818 other specimens, I was surprised to find a single *A. vespiformis*. I have not previously recorded this clearwing in the area, although we are well supplied with oak trees; there are four (two very large) in my own garden.

Inachis io L. has frequently been reported from m.v. traps, but it may be of interest to record that one was found

inside my trap on the 1st and 8th October and on the 5th, 6th and 21st October, single specimens were at rest underneath it (it is raised off the ground on bricks). Whether it was the same individual is not known, but the previous night's captives are released after dark 75 yards from the trap with a belt of trees and shrubs between the light and the release point. There have been several *I. io* in the garden on sunny days for some weeks. — J. A. C. GREENWOOD, The Thatches, Forest Road, Pyrford, Woking, Surrey.

BEIRNE: A LITTLE-KNOWN ERROR. — I have only recently noticed a serious error in B. P. Beirne's *British Pyralid and Plume Moths* that should be brought to the notice of British microlepidopterists. This concerns the two species *Pterophorus* (*Alucita*) *tridactyla* (Linn.) and *P. baliodactylus* Zell. On plate 15 of the new colour illustration (1954) edition these two species are depicted wrongly. Fig. 11 is really *baliodactylus* and fig. 12 is *tridactyla.* Having realised the error I looked up in my back numbers of the *Entomologist's Record* to see whether this was realised at the time. Sure enough, H. C. Huggins in one of his "Notes on the Microlepidoptera", pointed out the mistake (*Ent. Rec.*, **66**: 294).

However, at the present time too many people seem to be ignorant of the error and therefore record the wrong species. How many microlepidopterists of the present generation have the *Entomologist's Record* for 1954, let alone read it? Huggins also points out that the figure of *Platyptilia ochrodactyla* (D.& S.) (Pl. 15, fig. 3) appears to be a worn specimen. Fresh specimens are always of the same tint as that of the figured *P. pallidactyla* (Haw.).

Recently published records of these species must be treated with caution and special care should be exercised when supplying records for Vol. 6 of the *Butterflies and Moths of Great Britain and Ireland.* — S. E. WHITEBREAD, Hofackerstrasse 7, CH-4132 Muttenz, Switzerland, 12.xi.76.

COLOCASIA CORYLI L. F. MELANOTICA HAVERKAMPF IN OXFORDSHIRE. — I was interested to read about C. G. M. de Worms taking the melanic form of the Nut-tree Tussock in the Woking area of Surrey, as I took a specimen of this variety at Hooton cum Studley, near Oxford, in June 1969. It is of a dark brown colour, and has no white markings at all. — Rev. GUY A. FORD, The Rookery Farmhouse, Norton, Bury St. Edmunds, Suffolk.

BLAIR'S MOCHA (CYCLOPHORA PUPPILLARIA HBN.) AND OTHER INTERESTING MOTHS IN HANTS. IN 1976. — There was a female of *C. puppillaria* in very fresh condition in the m.v. trap in the garden here on 22nd July. Two very unusual wanderers were *Amathes agathina* Dup. on 19th September and *Eumichtis lichenea* Hbn. on 27th September, both at m.v. and both worn. *Cosmia diffinis* L. appeared on 19th July. These last three species were new to my trap. — C. H. DIXON, Northbrook Farm, Micheldever Station, Hants.

LITHOPHANE LEAUTIERI BOISD. AT WOKING. — It was indeed a pleasant surprise to find a female specimen of Blair's Shoulder-knot in my m.v. trap on the morning of 31st October, 1976. This insect is spreading steadily inland throughout the south of England since its original discovery by Dr. Blair in the Isle of Wight in 1951, and is now north of London and widespread in Surrey wherever there are large *macrocarpa* trees. — C. G. M. DE WORMS, Three Oaks, Woking, Surrey.

A PALE CLOUDED YELLOW (COLIAS HYALE L.) (?) RESTING ON THE SEA. — I am writing of an unusual incident concerning what I believe to have been a Pale Clouded Yellow (*C. hyale* L.), but cannot be certain of the species because I did not have enough time to observe it in detail. I was fishing some two-three miles west of the Isle of Portland from a boat lying at anchor in a fair tide running from the S.E. Suddenly, I noticed the butterfly drifting quickly past, lying on the water with its wings open and enabling me to see the markings. I attempted to lift it from the sea with the tip of my fishing rod, at which the butterfly took off and flew away strongly towards land and into the light northerly breeze. The incident occurred on the 17th July, 1976 in fine sunny weather. I have no more to add except that it did not appear to move until I tried to catch it. I am puzzled as to how it could lie with wings open yet not get them wet and when I first saw it, I believed it to be in the water and not resting on it. — FRANK POLLARD, 57 St. Johns Road, Tackley, Oxfordshire.

IS ERIOPYGODES IMBECILLA (FABR.) (LEP.: NOCTUIDAE) A REDISCOVERED BRITISH SPECIES? — Whilst recently thumbing through my copy of Wood's *Index Entomologicus* (1839), I at once recognised *Eriopygodes imbecilla* (Fabr.) in the section at the back of the book dealing with species that Wood considered doubtfully British. The text reads: —

Linn. names	Engl. names	Synonyms and new genera	Remarks
44 *imbecilla*		*Curtis's Guide*, p. 180. GRAPHIPHORA	Supposed to be British by Mr. Curtis.

Of the 57 doubtful species listed in this section, a large number is connected with the names of Stewart, Dr. Turton or Martyn, who appear to have added species without authority. Most of the other species are dismissed as British on grounds of known importation, admitted mistakes or a complete lack of positive evidence. Eight are now on the British list, with no asterisk denoting doubtful status. These are now known as *Adscita globulariae* (Hübn.), *Drymonia ruficornis* (Hufn.), *Phyllodesma ilicifolia* (Linn.), *Eugnorisma depuncta* (Linn.), *Actinotia polyodon* (Clerck), *Cucullia gnaphalii* (Hübn.), *Ennomos autumnaria* (Wern.) and *Oecophora bractella* (Linn.). Wood writes of the last mentioned species "*Curtis's Guide*, p. 208", "Supposed by Curtis to be British".

I am not familiar with any of Curtis's own works, but reading Wood, I get the impression that he was a good honest entomologist, who was responsible for describing a number of new species and discovering a number of species new to the British list.

Why, therefore, did Wood disbelieve Curtis over *bractella* and *imbecilla*? Can anyone who specialises in such entomological history shed any light on the subject? Perhaps there is a supposed British specimen of *imbecilla* in the Curtis collection in the National Museum of Victoria, Melbourne, Australia! — S. E. WHITEBREAD, Hofackerstrasse 7, CH-4132, Muttenz, Switzerland, 5.xi.76.

PAROCYSTOLA ACROXANTHA (MEYRICK) (LEP.: OECOPHORIDAE). — While on holiday in my regular haunts around Dawlish, Devon, in late June 1976, I was fortunate enough to secure two specimens of this moth. Both examples occurred on high moorland, a few miles inland from Dawlish; a female to 6 watt actinic light placed amongst the heather on 23.vi, and a male put up from heather on 26.vi, a very hot day. The female was in fine condition, but the male a little worn partly because of being carried around in the heat of the day's collecting.

Both Jacobs (1951) and Meyrick (1927) describe the status of *P. acroxantha* as "locally established on the South Devon Coast", but recourse to Agassiz (1971) and Metcalfe (1910, 1917) revealed that only 4½ (the "½" being a forewing) specimens were known from Britain, taken in 1908, 1917, 1925 and 1970. Other than these records *acroxantha* is only known from Australia and New Zealand from where it has undoubtedly been imported.

The life-history appears to be unknown, but it has been suggested that the larva feeds between spun leaves of *Eucalyptus*; a tree which I understand occurs on the South Devon coast. However, the locality in which the captures were made consists of moorland remote from any known area of cultivation, and so perhaps the larva has adopted a less exotic foodplant.

A point of interest is the early dates of capture: Jacobs (1951) and Meyrick (1927) give the flight period as August, but the late June dates are undoubtedly a reflection of the intensely hot summer of 1976. In addition, these authors give the wing span of *acroxantha* as 13-15 mm. My male is well within this range, but the female measured 18 mm.—perhaps the result of a different pabulum.

Further investigation of this area during July and August is clearly desirable, for the species would appear to have a tenuous foothold in a local area, and has perhaps been overlooked in the past. References: Agassiz, D. J. L. 1971. *Ent. Rec.*, **83**: 39. Jacobs, S. N. A. 1951. *Proc. S. Lond. ent. nat. Hist. Soc.*, **1949-50**: 189. Metcalf, J. W. 1910. *Entomologist*, **43**: 36. *Ibid.* 1917. *Entomologist*, **50**: 267. — A. A. ALLEN, 6 Potters Way, Woodhatch, Reigate, Surrey.

Frass as an Acceptable Pabulum for Leaf-mining Larvae. — On 29.viii.1975, I collected a leaf-mine of *Stigmella ruficapitella* (Haworth) [Lep.: Nepticulidae] on *Quercus* in Parkhurst Forest, on the Isle of Wight. It soon transpired that *Ectoedemia albifasciella* (Heinemann) was also mining this leaf, although *S. ruficapitella* had vacated its mine before .*E albifasciella* had finished constructing its gallery stage. Several times the larva of *E. albifasciella* found itself in a situation such that it was forced, since it could cross a previously-constructed mine in no other way, to consume frass, which was sometimes its own, and sometimes that of *S. ruficapitella.* Observation under the microscope suggested that the larva showed an equal preference for frass and for its natural pabulum. On the one occasion when the larva was faced with a choice between its own frass and that of *S. ruficapitella,* it tasted each, and proceeded to eat its own.

The larva seemed to flourish on its mixed diet, and, in spite of its slower than usual growth and of its brown, rather than green, gut, fed up, and successfully produced a fully-sized imago on 17.iv.1976.

Food passes through the guts of leaf-mining larvae extremely quickly: ingested food may well be voided as frass within a quarter of an hour of consumption. Consequently, it is only partially digested, and retains a high degree of nutriment. Hering (1951, *Biology of the Leaf Miners,* 's-Gravenhage, pp. 289-290) states: "The mining larva's frass . . . contains a considerable quantity of nutrient substances, even though the protein constituents are missing".

Many leaf-mining larvae seem to be very tolerant of their frass: many *Phyllonorycter* [Lep.: Gracillariidae] incorporate their frass into their cocoons. Not infrequently, larvae of Nepticulidae of the *atricapitella* group, when they feed in the late autumn, find their dwindling "green islands" insufficient for their needs. Often, they will then continue to subsist on their own frass. Col. A. M. Emmet collected a mine of *Stigmella atricapitella* (Haworth) at Lopham Fen, Norfolk, on 17.xi.1973, which fell into this category; yet it yielded a fully-sized imago on 6.v.1974. The moth and its highly unorthodox mine were exhibted at a meeting of the British Entomological and Natural History Society on 27.vi.1974.

Externally-feeding larvae do not seem to be tolerant of their frass; many semi-external feeders, however, do (e.g. members of the genera *Parornix* and *Caloptilia* [Lep.: Gracillariidae], but these do not actually eat their excrement).

I am very grateful to Col. A. M. Emmet for looking after and observing the specimen of *E. albifasciella* herein described during a period of my absence. I am also grateful to him for the provision of information on his experiences showing tolerance by leaf-mining larvae of their frass. — P. J. Johnson, 7 Haverhill Road, Horseheath, Cambridge, CB1 6QR, 27.x.1976.

BLAIR'S SHOULDER-KNOT (LITHOPHANE LEAUTIERI BOISD.) IN EAST SUSSEX. — On 21st October, 1975 I recorded a male *L. leautieri* near Dallington. It is a species that seems to be increasing its range as in 1976 I recorded two more specimens on the 2nd and 3rd October in Wadhurst, some 15 miles from Dallington. In 1974, at Dallington, I recorded the Tawny Pinion (*Lithophane semibrunnea* Haw.) on 27th October, and four Pale Pinion (*L. socia* Hufn.) during November.—A. E. C. ADAMS, Perrins Farm, Wood Green, Wadhurst, East Sussex.

A FURTHER NOTE ON COLEOPHORA TRIGEMINELLA FUCHS AND C. CORACIPENNELLA (HBN.). — Due to the apparent scarcity of these two *Coleophora* spp., which I discovered at the same locality in N. Kent recently (*Ent. Rec.*, **87**: 300), it seemed desirable to ascertain their present status.

Unfortunately, I was due to emigrate to Switzerland on 30th April, 1976, but as I had taken the first *Coleophora trigeminella* Fuchs case on 4th May, 1974, it seemed probable that the end of April was not too early for it. However, *Coleophora coracipennella* (Hübn.) would almost certainly still be in its overwintering case rendering it indistinguishable from *Coleophora cerasivorella* Pack.

Accordingly, on 25th April a visit to the locality was made in company with Mr. J. M. Chalmers-Hunt, who found the first case of *trigeminella* well concealed feeding amongst closely bunched Apple leaves. Searching on the Hawthorn soon revealed a few more cases, about eight in all, but they were often well concealed and were well separated along the hedge. Some were feeding on the unopened flower buds. The species could I think be described as common in the immediate vicinity of these bushes, but other hedges visited in the area revealed no more cases.

Just as we were leaving, Mr. John Roche, who just happened to be passing, joined us. Having been shown what to look for, he found the cases commonly at the bottom of his garden at Sidcup later that day.

That same evening I was visiting friends at Whitstable. As they have a number of Hawthorn bushes alongside their house, I quickly had a look on them before the light failed. A *trigeminella* case was soon found attached to a flower bud.

I took this case, and three cases from the original locality, to Switzerland with me. Two of these cases were quite short, with only a bivalved tailend. One later formed a trivalve, but the other remained bivalved. A ♂ specimen emerged from this case on the 4th June with a ♀ emerging from a trivalved case the same day. Another ♀ emerged from the Whitstable case on the 5th June. The fourth case produced a ♀ *Apanteles* sp. which has been retained by Dr. Mark Shaw for a more specific determination. A bivalved *trigeminella* case cannot be confused with the case of *Coleophora badiipennella* (Dup.), because the former is fairly smooth and is made of silk, whereas the latter is rougher and is cut from the edge of a leaf.

Because *trigeminella* constructs its case from silk, it cannot have a different hibernating case, but it gradually expands its case with silk as it grows. It is not known when the larva starts feeding or what young cases look like, but close searching through August and September should clear the matter up.

The final lengths of the cases were between 4.5 mm. (bivalved) and 6 mm. and they were all spun up in the fork of a twig.

I have also looked for the cases, with no success, in likely looking places in the Higham, Cliffe and Gillingham areas. The species is therefore very local, but common where it occurs.

Just before we left the locality, I found a very freshly cut out case together with the old hibernating case on Hawthorn. At this time the case was whitish, somewhat bulbous and bivalved. As the larva fed up, the case became strengthened with silk turning reddish brown, but remained bivalved: It was relatively fat for its length (6 mm.). A ♀ *coracipennella* (gen. det. S.E.W.) emerged on the 12th June. The specimen was again much darker than my *cerasivorella,* the black tipped scales being especially distinct under the microscope, where they extend into the tornal cilia.

I have since bred a further ♀ *coracipennella* (gen. det. S.E.W.) on the 20th July from a case found on Apple, near Zürich, Switzerland, on the 3rd July. This specimen is even darker than either of my English specimens and, of course, emerged over a month later.

The single character that my *coracipennella* cases have that my *cerasivorella* do not, is that they all have a longitudinal ridge on both sides, caused by the contraction of the silk inside. Some of my *cerasivorella* cases have ridges, but these are caused by the join of the cut out leaf and are therefore not symmetrical on both sides.

Two out of three *cerasivorella* cases that I also took with me also remained bivalved. — S. E. WHITEBREAD, Hofackerstrasse 7, CH-4132 MUTTENZ, Switzerland, 1.x.1976.

MACROGLOSSUM STELLATARUM (L.), SPODOPTERA EXIGUA (HBN.), EUROIS OCCULTA (L.) AND LITHOMOIA SOLIDAGINIS (HBN.) IN SOUTH WESTMORLAND IN 1976. — On 20th August Mr. Arthur Watson and I observed a nearly full grown larva of *M. stellatarum* feeding on *Galium verum* on Arnside Knott. On 30th September an adult was seen hovering over flowers in a Milnthorpe garden by Mr. A. J. Holman, and on 10th October, I saw one in my garden, hovering over various blooms during a brief spell of sunshine.

On the morning of 4th July, after the warmest night of the year here, I found a male *S. exigua* at the bottom of my Robinson trap, among 699 other macros (97 species) and masses of other small creatures (all released later). This is my first record of the species in the nine years that I have continually operated my m.v. light here.

In the early hours of the morning of 23rd August, on opening my back door, there, sat on the casing, was a perfect male *E. occulta.* It was exactly similar to the specimen illustrated in Souths' *Moths of the British Isles,* Vol. 1, pl. 57, fig. 4, and described as the black ab. *passetii* (Thierry-Mieg.).

On 29th August, again just before dawn, there was another male *occulta* sat on the house wall in pouring rain, this specimen was a shade lighter than the other. The last time I encountered this species was in 1964, at Bradford in Yorkshire, when four specimens were recorded, all of the much paler typical form.

Between 14th and 28th August, nine *L. solidaginis* appeared, none entering the trap. Only once previously have I had a single specimen of this species here. — J. Briggs, Frimley House, Deepdale Close, Slackhead, Beetham, Nr. Milnthorpe, Cumbria.

The Scarce Bordered Straw (Helicoverpa armigera Hb.) in Dorset in 1976. — On the 14th October, a Scarce Bordered Straw came to my m.v. trap here; and on 14th August the trap produced a male and female Convolvulus Hawk and again a male of the same species on the 17th August. — C. Cattell, 9 Folly Lane, Wareham, Dorset.

Epiblema grandaevana (L. & Z.) in Suffolk. — During a holiday in Suffolk in 1976 I was collecting on the coast on 24th June and took a female specimen of *grandaevana* at light. Dr. Bradley, who determined the insect, tells me that he knows of no record of it being taken since the early 1900s, except for a recent one by D. A. Sheppard who caught a *grandaevana* on 24th July, 1972 at the mouth of Castle Eden Dene, Co. Durham (1976, *Ent. Rec.,* **88**: 136). — L. Price, 17 Glen Park Crescent, Kingscourt, Stroud, Glos.

October in Scilly. — I made my annual bird-watching visit to the Isles of Scilly from 6th to 19th October, 1976— somewhat later than in previous years. This fact, together with the general unsuitability of the weather on some days accounts for the small number of butterflies seen. I recorded only four species: Red Admiral (*Vanessa atalanta* L.), small numbers on most suitable days. Speckled Wood (*Pararge aegeria* L.), very few. Large White (*Pieris brassicae* L.) and Small White (*P. rapae* L.), only one sighting of each. I also saw the Hummingbird Hawkmoth (*Macroglossum stellatarum* L.), two on each of St. Mary's and St. Agnes, and was informed by local naturalists that this species was much commoner than usual on the islands in 1976. — G. Summers, 23 West Close, Stafford, Staffs.

Second Brood Nymphalis io L. — Second broods of this butterfly are not often found, so when I came across a large batch of larvae on 24th September, 1976, I decided to breed them. They were nearly full-fed and when collected were distributed between two cages, fifty larvae in Cage A and

thirty in Cage B. The timetable of their subsequent development was as follows: —

Date	Cage A	Cage B
27th Sept.		First larvae suspended prior to pupation
29th Sept.		First pupae formed
4th Oct.		Majority of pupae coloured up
5th Oct.		Two butterflies emerge
6th Oct.		Twenty-three emergences
7th Oct.	Many pupae colouring up	Remaining butterflies emerge
9th Oct.	Eight butterflies emerge	
10th Oct.	Main emergence	
11th Oct.	Remaining butterflies emerge	

At no time was either cage subject to artificial heat and the weather throughout the whole period was so wet and stormy that, after a few days in the open, it was necessary to put both cages under cover, first in an unheated room and latterly in a cold greenhouse with the door open. I am unable to account for the difference in emergence dates between the two cages which had exactly similar treatment throughout. Apart from one cripple in Cage B, all the butterflies were up to size and normal in appearance.

Six or seven days in the pupal state would be good going even in the tropics, but must be most unusual in this country and therefore seems worth recording. — Maj. Gen. C. G. Lipscomb, Crockerton House, Nr. Warminster, Wilts.

Erebia serotina Descimon & de Lesse 1953: A Possible Hybrid. — I was very interested in Mr. N. D. Riley's recent note under the above heading (*Ent Rec.*, **87**: 266) concerning the suggestion that *Erebia serotina* could be a hybrid between *Erebia epiphron* and *Erebia pronoe*. I was, however, surprised to read that the reason this suggestion had previously been discounted was because of "the normally wide separation of their flight periods". Is there in fact normally such a wide separation? While odd specimens can appear at the end of July, the main emergence of *E. pronoe* f. *glottis* seems to start about the second week in August. *Epiphron* is on the wing later in the Pyrenees than in some other areas and I have found it still very much in evidence at this time. In fact in 1973 I found both species flying commonly together near Col du Tourmalet on 12th-15th August. Both sexes of both species were on the wing together during this period and they appeared equally fresh.

While the flight period may thus be less of a barrier to this hybrid theory than previously considered, there are other questions still unanswered, firstly the altitude. *Epiphron* in the Pyrenees is a high level species. I have not found it below 1,600 m. and it is usually higher—up to 2,500 m. *Pronoe*

generally occurs between 1,300 and 2,000 m. The locality where I found them together was at about 1,650 m. Col d'Aubisque, the locality mentioned by Mr. Riley, is 1,700 m. If *serotina* was a hybrid, one would thus expect to find it at this sort of altitude. However, the specimens of *serotina* from Cauterets were found between 800 and 1,000 m., substantially lower than one would expect to encounter either of their suggested parents. The other unexplained aspect of this theory is that *serotina* has so far only been found in one small area, while the joint range of *epiphron* and *pronoe* covers a substantial area of the central Pyrenees. — M. J. PERCEVAL, Holmesdale Cottage, Bonds Lane, Mid-Holmwood, Dorking, Surrey, RH5 4HF.

IMMIGRANT AND OTHER LEPIDOPTERA IN WEST SUSSEX IN 1976. — During the summer of 1976 the 125 watt m.v. trap in my garden did not yield any notable captures. However, with the change from hot dry weather and winds mainly from the north, to wet windy weather from the southern sector, there was a dramatic change and I recorded the following interesting immigrant species at light here: *Acherontia atropos* (L.), September 22nd (1); *Agrius convolvuli* (L.), September 25th (2), October 3rd (1); *Mythimna vitellina* (Hbn.), September 28th (1), 30th (1), October 3rd (1); *M. albipuncta* (D. & S.), October 11th (1), 25th (1); *M. unipuncta* (Haw.), October 27th (1). Also at light were *Helicoverpa armigera* (Hbn.), October 14th (1); *Cyclophora puppillaria* (Hbn.), October 21st (1); *Eumichtis lichenea* (Hbn.), eight between 24th September and 23rd October; and *Vanessa atalanta* (L.), two in the m.v. trap, on 12th October — R. R. PICKERING, 123 Manor Way, Aldwick Bay Estate, Bognor Regis, Sussex.

THE OLDEST LEPIDOPTEROUS SPECIMEN IN AMERICA. — Most of the remaining insect specimens of James Petiver (ca. 1662-1718), the London apothecary and naturalist who helped to stimulate natural history collecting in various parts of the world, including North America, are preserved in the Entomological Department, British Museum (Natural History). They were conveyed to the original British Museum, along with Petiver's herbarium and voluminous manuscripts, by Sir Hans Sloane.

After suffering depredations by predators, Petiver began mounting insects for his cabinet in "sandwiches" of thin sheet mica, sealed tightly at the edges with strips of paper, upon which he recorded pertinent data. Most of these later specimens were then mounted in several large folio volumes, in the manner of the herbaria of the period, and so successful was Petiver's method that his is one of the oldest entomological collections to survive.

Excepting fossil insects, what appears to be the "oldest" surviving entomological specimen in North America is obviously an estray from Petiver's natural history cabinet. In my personal collection of historical specimens, it is mounted in a manner identical to almost all of the B.M. (N.H.)

examples, and bears Petiver's notes on the strips of paper which seal the mica sheets together. The butterfly is a "Monarch", *Danaus plexippus* (L.), one of the more common species on the eastern seaboard where Petiver's collectors worked, but there is no certain evidence as to which one of his numerous correspondents added it to the series of *plexippus* in his cabinet. The number "1465c" on the lower paper binding might have provided a clue, except that the particular inventory of Petiver's insects to which this refers has apparently not survived, at least in the extensive series of his papers in the Sloane MSS., British Library. There is a note on the upper paper binding, also in Petiver's hand, which reads "Mus. Petiver. 526. American". This refers to entry 526 in Petiver's *Musei Petiveriani Centuria Sexta & Septima* [London, 1699], in which the butterfly which Linnaeus would name *plexippus* is described as "Papilio *Marianus* aurantiacus, maculis albis, limbis & venis latis nigricantibus;" p. 51.

There are, however, several specimens in Petiver's collection at the B.M. (N.H.) referred to 526, and one can only conclude that this earliest specimen in America was collected at the end of the seventeenth century or the beginning of the eighteenth; that it could, because of the reference to "Marianus", have been sent to Petiver by any one of his Maryland collectors, such as Hugh Jones, David Krieg, or William Vernon; or, alternatively, that Petiver could have used the number (as he did in other cases) to refer to material from other localities—and we know that *plexippus* was supplied to him from as far north as the Boston area, e.g. by Benjamin Bullivant. Apart from the loss of its antennae, some of its scales and several of its legs, the specimen is well preserved, testifying to Petiver's care in securing his collection from vermin.

A question remains about how the *plexippus* left Petiver's natural history cabinet. Many of the mica "sandwiches" have disappeared from the bound volumes of his collection, certainly before they came into the watchful care of the present Department; presumably these were removed in the eighteenth and perhaps even the nineteenth centuries, either for study or as curiosities of an earlier age of entomology. Whatever the reason for its alienation from Petiver's collection, the American *plexippus* will eventually join its fellows at the British Museum (Natural History). — Dr. R. S. Wilkinson, Library of Congress, Washington, D.C. 20540.

Some Comparative Observations between Populations of Coleophora badiipennella (Duponchel) in S. England and N. Switzerland. — J. M. Chalmers-Hunt considers that the best time to look for full grown larvae of *Coleophora badiipennella* (Dup.) in Kent is the last fortnight in September (cf. *Proc. Brit. Ent. Soc.*, **7**: 77). I find that this is sound advice, although cases can still be found commonly throughout October and a few hibernate on the twigs and resume feeding in the spring, till about mid-May.

I have with me eight cases taken off *Ulmus procera* Salis. at Dartford Heath, Kent, in October 1975. The lengths of these cases ranged from 5.0 mm-6.2 mm. Some younger larval cases were all 2.5 mm. long, attached to 6.0 mm.-7.0 mm. cut outs.

The main emergence period tends to be about the middle of June, slightly earlier or later, according to season.

In the Basel area of Switzerland, I have found 12 cases of this species between the 4th and 9th June this year. The lengths of these cases ranged between 6.5 mm. and 9.5 mm., the average being 8 mm. They were feeding on *Ulmus glabra* Huds. Five of the smaller overwintered cases were also found, showing that five at least had constructed their final case in the spring, not in September as in England. None of the larger cases, however, looked as if they had endured a winter. The lengths of these five cases were: one 2.5 mm., one 3.0 mm., and three 3.5 mm.

All but two of these cases produced parasites during the second week in July. The two moths emerged on the 3rd July.

A search on the 11th September revealed a number of young *Coleophora* cases. The egg was found tucked up into the hairs against a rib, usually in the angle of a lateral vein and the midrib. From this, the larva had mined an area 3-4 mm. x 1 mm., leaving dispersed grains of frass. Out of the end of this mine a 1.5 mm.-2.0 mm. case is cut, leaving a 2.0 mm.-2.5 mm. cut out, The larva had then fed a little in this case before constructing a further case 3.5 mm.-4.0 mm. in length.

The first case was light ochreous-grey, almost erect on the leaf, whereas the second case formed an angle of about 45° and was dark grey with the terminal $\frac{1}{3}$ whitish.

I will have to wait until next year to see if these larvae were the early stages of *badiipennella* or whether perhaps they were of *Coleophora limosipennella* (Dup.). In Britain, it is thought that *badiipennella* makes only two cases normally in its life cycle. *Limosipennella* is known to make three, but the nine overwintered first cases I have taken of this species have been between 2.0 mm. and 3.0 mm. in length. The 20 overwintered second cases I have taken were, however, between 3.0 mm. and 4.0 mm. The final case of this species ranges between 10.0 mm. and 12.5 mm., but exceptionally it reaches 14.0 mm.

What makes the S. England larvae feed up quicker than those from Switzerland? — S. E. WHITEBREAD, Hofackerstrasse 7, CH-4132 MUTTENZ, Switzerland, 1.x.1976.

THE SPECKLED WOOD (PARARGE AEGERIA L.) IN MADEIRA. — My friend Mr. N. D. Riley took a single specimen of this species on 8th October this year (1976), while he was on a short visit to Madeira. The specimen now in my collection, is a fresh, brightly marked female of the typical form (*P. a. aegeria*), taken about 15 miles north of Funchal at Ribeiro Frio, near Forest Lodge, flying at 860 m. The endemic *Pararge xiphia* was flying at the time, but *P. aegeria* was not seen again. This appears to be the first reliable record of the occurrence

of the butterfly on the island.

It seems possible that we may witness a repetition of the story of the Small White, *Pieris* (*Artogeia*) *rapae,* recently recorded by Niells L. Wolff. This species was not known to occur on Madeira until December 1971, when a specimen was caught near Funchal. Three years later, in July 1974, the butterfly suddenly became extremely common and widespread over the island, flying from sea level to 1,500 m. or more. Mr. Riley tells me that it was by far the commonest butterfly seen during his visit. Referring again to *P. aegeria,* I think this must be accepted provisionally as a Madeiran species, although only a single specimen from the island is known at present. Ref.: Wolff, N. L. 1975. *Bol. Mus. Munic. Funchal,* **XXIX**: 26-32. — Dr. L. G. Higgins, Focklesbrook Farm, Chobham, Woking, Surrey.

Lithophane leautieri (Boisd.) in Winchester. — Although I have been running an m.v. trap for the last three years in Winchester, during 1974 and 1975 there was no sign of *Lithophane leautieri* (Boisd.), which was first recorded in Britain by Dr. K. G. Blair at Freshwater, Isle of Wight, in 1951. Mr. B. Goater in *The Butterflies and Moths of Hampshire and the Isle of Wight* mentions that the species now seems to be established at Martyr Worthy (about five miles N.E. of Winchester), one or two being recorded annually, and these were the nearest records to Winchester itself. This year, however, six specimens have appeared up to 29th October, all on different nights, in my m.v. trap in Winchester, actual dates being October 9th, 11th, 13th, 14th, 15th and 28th. It appears that the spread of this comparatively new addition to the British list is continuing. — Colonel D. H. Sterling, "Tangmere", 2 Hampton Lane, Winchester, Hants., 30.x.1976.

Green Islands of the Nepticulidae. — I have read with interest the discussion surrounding this phenomenon, in particular the notes by Mr. E. H. Wild (*Ent. Rec.,* **88**: 103) and Col. A. M. Emmet (*ibid.,* **88**: 207). Although not claiming to advance any definitive solution to the problem, I feel it worth considering two possible causes of the green islands. Firstly, that the presence of the larva induces and sustains the island. If true, this would be by no means a unique situation. The chlorosis (yellowing) associated with the later stages of diseases caused by certain rusts and mildews is often broken by islands of green tissue surrounding the sites of initial infection, and these islands may persist for some considerable time against a background of chlorotic and senescent tissue. Furthermore, it is possible to experimentally induce the formation of green islands by procedures such as application of fungal or yeast extracts, or by the use of synthetic chemicals which resemble natural plant hormones. In some cases they can be induced to form on leaves that are already yellowing. Thus it is possible for a green island to be induced and sustained by an external influence. Could such an external influence be a Nepticulid

larva? On balance I feel that it could not. As Col. Emmet points out, the green islands associated with *Ectoedemia subbimaculella* (Haworth) develop regardless of whether or not the larva survives its early ecdyses. There appears to be no precedent for such a lengthy persistence of the effect after removal of the cause.

The second explanation involves the green island persisting by default, rather than being actively sustained. To investigate this possibility, it is necessary to examine the natural sequence of events leading up to leaf fall. Mr. Wild describes the gross effects of leaf abscission, but in many species development of the final abscission layer is preceded by a gross reduction in the chlorophyll content, and a net export from the leaf of protein nitrogen and many of the more mobile ions such as potassium, magnesium and phosphorus. Removal of the chlorophyll in particular leads to the exposure of the accessory pigments such as anthocyanins and carotenoids, which give the leaves their characteristic autumn colouration. Recent work also suggests that some "waste" products are passed into the leaf prior to abscission, and that these contribute to the general necrosis which follows leaf fall. Thus the second hypothesis for the development of green islands is that the presence of the larva in some way prevents (a) the receipt and execution of signals (? hormones) designed to initiate senescence and death in the leaf; (b) the degradation of chlorophyll and export of essential minerals, and (c) transport into the leaf of toxic waste products. All these objectives can be achieved by the expedient of blocking the leaf vein serving the area and will subsequently become a green island.

The question now arises of how a very small larva would be able to block a relatively large sector of leaf veins. I would suggest that the larva plays no active part in this procedure, but that the plant itself seals off part of its vascular system as a natural host reaction to invasion by a parasite. Such a reaction can be observed in response to invasion of plant tissue by certain fungal and bacterial pathogens, presumably in an attempt to isolate the invading organism.

To summarise the hypothesis: the development of a green island results from a host reaction to the presence of a small larva. This host reaction effectively isolates a sector of the leaf from the normal transport systems of the plant, and as a consequence that sector fails to die in the prescribed manner. This failure is exploited by the larva, which completes its development in the remaining green tissue. It would follow from this that the shape and extent of the green island would be determined by the position on the leaf where the larva first begins the mine, and on the nature and extent of the venation on the leaf. The only mine I have to hand at the moment is that of the aspen feeding *Ectoedemia argyropeza* (Zeller), whose triangular green island extends over the area served by one of the three major veins arising from the petiole. — P. A. SOKOLOFF, 4 Steep Close, Green Street Green, Orpington, Kent.

14. Tenterden, common (Stainton, *Man.*, **2**: 27).

VARIATION. — My series of 22 *roboraria* from Orlestone Woods consists of 16 more or less typical examples and six ab. *infuscata* Stdgr. (C.-H.).

The following aberrations are in RCK: *infuscata* Stdgr., Ham Street, three bred by C. N. Hawkins, June 1936, from larvae beaten from oak; Ashford (Ham Street), four, 1934, A. J. L. Bowes. Ab. with "darkened margins", Ham Street, ♀ bred 1936, C. N. Hawkins. Ab. with "subterminal well developed", ♂, Ashford (Ham Street), 1935, A. J. L. Bowes.

FIRST RECORD, 1831: Birch Wood (Stephens, *Haust.*, **3**: 187).

Serraca punctinalis Scopoli : **consortaria** Fabricius : Pale Oak Beauty.

Native. Woods; on oak, sycamore.

In 1948, L. W. Siggs took a moth at Orpington on April 27th, which is unusually early for this species; and in 1950, R. W. Parfitt took one at Ham Street as late as September 8th, perhaps a representative of a partial second generation.

1. Recorded in the past from many locations in this division. More recently it has been noted from: Bexley, May 22nd 1952 (2) (A. Heselden). Petts Wood, common, 1951 (A. M. & F. A. Swain). Abbey Wood, 1952 (J. Green). Shooters Hill, May 14th 1948 (J. F. Burton). West Wickham, several at light, 1963 (C.-H.). Joydens Wood, common (D. O'Keeffe). Orpington, 1964 (I. A. Watkinson). Bromley, 1960 (26), 1961 (19), 1962 (13), 1963 (8), 1964 (16), 1965 (15) (D. R. M. Long).

3. Broad Oak, one, June 23rd 1946 (C.-H.). Pine Wood, three, 1947 (J. A. Parry). Millstrood, Whitstable, one on elm trunk (P. F. Harris).

5. Farnborough*, ♂, June 20th 1900 (Alderson, *Ent. Rec.*, **12**: 248). Westerham (R. C. Edwards). Shoreham, two larvae (R. G. Chatelain).

6. Greenhithe* (Farn MS.). Eynsford, one, 1960 (R. G. Chatelain).

6a. Darenth Wood (Stephens, *Haust.*, **3**: 187); 1845 (Stevens, *Zoologist*, 1787); 1859 (Harding, *Ent. week. Int.*, **6**: 67); two, June 6th 1925 (F. T. Grant); fairly common (B. K. West). Mark Oak Wood (Chaney, 1884-87). Stone Woods (H. C. Huggins). Cobham Wood, June 6th 1913 (F. T. Grant).

7. Chatham*, exhibited by W. C. Chaney at meeting of S. London Entomological and Nat. Hist. Soc. on June 19th 1872 (*Entomologist*, **6**: 144). Wigmore Wood (Chaney, 1884-87). Long Beech Wood; Kings Wood; Westwell (Scott, 1936). Boxley, 1953 (A. H. Harbottle).

8. Folkestone* (Ullyett, 1880). Elham (W. E. Busbridge); "Woods near Barham" (E. & Y., 1949) may refer. Wye Crown, one, 1938 (C.-H.). Dover, several, 1943 (B. O. C. Gardiner). Brook* (C. A. W. Duffield). Bridge, c. 1946 (R. Gorer). Covert Wood, June 13th 1949 (G. H. Youden).

10. Seal Chart (Carrington, *Entomologist*, **13**: 79). Brasted (R. M. Prideaux). Westerham (Coote and Jacobs, *Proc. S. Lond, ent. nat. Hist. Soc.*, **1937-38**: 37); 1951 (Leston, *Proc. S. Lond. ent. nat. Hist Soc.*, **1951-52**: 72). Sevenoaks, four, May 24th 1947 (W. E. Busbridge); 1949 (F. D. Greenwood).

11. Yalding; Wateringbury (V.C.H., 1908). Wateringbury, three, 1909, in E. Goodwin coll. (C.-H.). Tonbridge dist., 1911 (Rattray, *Entomologist*, **45**: 80). Edenbridge, 1930 (F. D. Greenwood). Aylesford, two, 1952, three, 1953 (G. A. N. Davis). Hoads Wood, June 15th, 20th 1955 (W. L. Rudland); ♀, July 1962 (M. Singleton). Maidstone, one, May 26th 1955 (E. Philp). Sevenoaks Weald, 14, June 2nd-27th 1960 (E. A. Sadler).

12. Ham Street (G. V. Bull); 1935 (A. J. L. Bowes); 1937 (A. H. Lanfear, *Diary*); frequent at light, 1938 and since (C.-H.); *at sugar*, June 28th 1955 (R. A. Jackson, *Diary*); larvae fairly common on oak in Orelestone Woods, c. 1960 (M. Singleton); an imago September 8th 1950 (R. W. Parfitt). Chartham (P. B. Wacher). Willesborough, 1954 (2), 1956 (2); Wye, 1953 (4), 1954 (1), 1955 (2), 1956 (5) (W. L. Rudland). Willesborough, one, 1960 (M. Singleton). Ashford Warren, larva on sycamore (M. Enfield).

13. Pembury (Stainton, *Man.*, **2**: 27). Tunbridge Wells (E. D. Morgan). Goudhurst (G. V. Bull); common annually (W. V. D. Bolt, *personal communication*, 1961).

14. Sandhurst; Benenden, 1939 (G. V. Bull).

16. Folkestone, two (A. M. Morley).

VARIATION. — This is chiefly in regard to the increase of darkness leading up to ab. *humperti* Hump. Dark forms have been recorded on numerous occasions from Kent and the following are among the published references: *Proc. S. Lond. ent. nat. Hist. Soc.*, **1916-17**: 100, **1925-26**: 13, **1929-30**: 31, **1930-31**: 75, **1951-52**: 42; *Ent. Rec.*, **18**: 222-226, **26**: 73; *Entomologist*, **38**: 165.

The following Kent aberrations are in RCK: *distincta* Lempke, N. Kent, bred 1918; *bicolor* Lempke, one, N. Kent, bred 1918; *intermedia* Lempke, numerous, N. Kent, bred 1918; *consobrinaria* Borkh., N. Kent, bred 1918 (numerous), Wateringbury, several, 1903, Kent, bred 1900 (1), 1904 (several), 1907 (1); *humperti* Humpert, N. Kent, bred 1918 (numerous), Mid. Kent, 1906, E. Goodwin (1); Ab. with "basal area darkened", Kent, bred 1916 (2). Also, several typical specimens, N. Kent, bred 1918.

FIRST RECORD, 1831: Stephens, *loc. cit.*

Cleorodes lichenaria Hufnagel : Brussels Lace.

Native. Woods, copses; on lichen on blackthorn and old fences.

1. Dartford Heath (Jenner, *Week. Ent.*, **2**: 197). West Wickham, larva, April 14th 1866 (C. Miller in *Ent. Ann.*, **1867**: 154); March 26th 1880, two larvae "from the top of an old fence" (Anderson, *Young Nat.*, 7: 116). Lee, one, June 27th 1904 (Green, *Trans. W. Kent nat. Hist. Soc.*, **1905-06**: 15).

3. Faversham (Morris, *Br. Moths*, **1**: 121).

4. Deal, two, July 28th 1891 (Fenn, *Ent. Rec.*, **2**: 204).

6. Longfield, 1867 (Jennings, *Entomologist*, **4** (51) ii). Greenhithe*, in moth trap (Farn MS.).

6a. Four Elms Hill; Mark Oak Wood (Chaney, 1884-87).

7. Darland Hill (Chaney, 1884-87). Boxley, one, E. Bartlett, in Maidstone Mus. (C.-H.). Westwell, July 19th 1934 (A. J. L. Bowes).

8. Coombe Wood, Dover, one, June 8th 1899 (Stockwell, *Diary*); four in H. D. Stockwell coll., labelled Dover, 1898, may be from here (C.-H.). Elham Park Wood, at acetylene light, July 3rd (2), 5th (5) 1926; Haddling Wood, at acetylene light, one, July 9th 1934 (W. E. Busbridge, *Diary*). Covert Wood, one or two larvae beaten out, 1927 (H. C. Huggins); June 22nd 1935 (J. H. B. Lowe). Stowting; Brook (C. A. W. Duffield). Reinden Wood, 1929 (Morley, 1931). Chilham, one, July 9th 1938 (C.-H.). Whitfield, occasionally at light (E. & Y., 1949). Bettes-hanger, one, July 6th 1957 (R. F. Bretherton).

10. Wildernesse Park (Carrington, *Entomologist*, **13**: 80). Sevenoaks, one at rest on fence, August 2nd 1941 (W. E. Busbridge, *Diary*).

11. Yalding, often at light (Reid, *S.E. Nat.*, **1904**: 53). Bethersden, one bred July 16th 1928, G. V. Bull (C.-H. coll.); 1928 (6), 1930 (3), 1937 (1), all bred, in G. V. Bull coll. (C.-H.); larvae on lichen, February 23rd 1953, two reared (P. Cue); a half-grown larva beaten from lichen-covered sloe, April 17th 1953 (W. L. Rudland).

12. Ham Street, June 30th 1935 (A. J. L. Bowes); one in Long Rope, June 22nd 1938, one, June 11th 1948 (C.-H.).

13. Pembury, common (Stainton, *Man.*, **2**: 25). Tunbridge Wells, a few, A. L. A. Townsend; Frant Road, one, E. D. Morgan; Broadwater Down, one, 1907, E. D. Morgan (E. D. Morgan).

14. Tenterden, common (Stainton, *loc. cit.*). Sandhurst, one, 1932, two, 1943, all in G. V. Bull coll. (C.-H.).

15. Dymchurch, three, 1902 (Browne, *Entomologist*, **35**: 270).

16. Saltwood (Knaggs, 1870). Folkestone, one, July 24th 1946 (Morley, *Entomologist*, **80**: 47).

FIRST RECORD, 1858: Stainton, *loc. cit.*

Ectropis bistortata Goeze : **biundularia** Borkhausen : Engrailed.

Native. Woods, copses, bushy places, parks; on birch, oak, spindle, sallow, broom, hornbeam, *Rhamnus catharticus*. Found in all divisions, few records for 2, 4, 15. "Generally distributed" (*V.C.H.*, 1908).

The larva has been found by D. R. M. Long on birch and oak at Petts Wood, on spindle at Shoreham and on sallow at Crofton; and I

have taken it at Orlestone on broom (*Proc. S. Lond. ent. nat. Hist. Soc.*, **1967**: 24) and hornbeam, and at Lydden on *R. catharticus,* and on each occasion bred the moth (C.-H.).

2. Sheppey, 1872 (Walker, *Ent. mon. Mag.*, **9**: 162).

4. Sandwich, one on gas lamp, July 31st 1951 (W. D. Bowden). Ham Fen, one, August 5th 1950, one, April 10th 1955 (C.-H.).

15. Dungeness, one, July 27th 1956 (R. F. Bretherton); one, late July 1957 (E. Philp).

VARIATION. — Cockayne (*Ent. Rec.*, **65**: 241, plt. 13 fig. 7) described *brunneipennis* ab. nov. holotype ♂, Wye, 1924; and de Worms (*Entomologist,* **89**: 283) records taking in East Kent an ab. "in which the ground colour is deep fulvous with the normal wavy cross-lines completely absent, being replaced by small black flecks".

I have two ♂♂ taken by Dr. G. A. N. Davis at Aylesford, July 16th 1956 and July 11th 1957, of a unicolorous greyish-black with whitish submarginal line that may be referable to ab. *defessaria* Frr.

Stephens (*Haust.*, 3: 192) records f. *strigularia* Stephens from Darenth Wood; and in RCK is ab. *fasciata* Petersen, Farnborough, Kent, 1893 (1), 1900 (1).

FIRST RECORD, 1831: Birch Wood (Stephens, *Haust.*, 3: 191).

E. crepuscularia Denis & Schiffermüller : Small Engrailed.

Native. Woods, parks, bushy places; on birch.

1. Birch Wood (see *First Record*). Eltham, April 21st (1843) (Bedell, *Zoologist,* 1007). West Wickham, larva on birch, bred 1861 (Huckett, *Ent. week. Int.*, **10**: 51); about a dozen moths, April 25th 1863 (Fenn, *Diary*). Petts Wood, one, May 6th 1865; Bexley Park Wood, one, May 28th 1887, one, May 21st 1889, two, June 2nd 1894 (Fenn, *Diary*). Hayes dist., May 28th 1899 (Carr, *Entomologist,* **33**: 47). Forest Hill (Cansdale, *Ent. Rec.*, **2**: 69). Greenwich Park (West, *Ent. Rec.*, **18**: 172). Shooters Hill (Tutt in Buckle and Prout, *Trans. Cy Lond. ent. nat. Hist. Soc.*, **1900**: 64). Chislehurst (S. F. P. Blyth). Orpington, 1955 (L. W. Siggs).

5. Chevening, May 19th 1912 (Gillett, *Diary*).

6. Greenhithe* (Farn MS.). Otford, June 21st 1902 (Adkin, *Proc. S. Lond. ent. nat. Hist. Soc.*, **1902**: 50). Eynsford (B. K. West).

6a. Darenth Wood, five, May 29th 1882 (Marriott, *Young Nat.*, **3**: 260); a few, May 25th 1952 (J. F. Burton).

7. Wigmore Wood (Chaney, 1884-87). Hollingbourne, ♀ at rest on yew, June 5th 1904 (R. A. Jackson, *Diary*). Sharsted; Faversham (H. C. Huggins). Bearsted, two taken, June 19th 1947 in G. Law coll. (C.-H.).

8. Dover, one, May 23rd 1893, one, May 15th 1932, in H. D. Stockwell coll. (C.-H.). Lyminge Forest (P. Cue). Dover district, "common in woods" (E. & Y., 1949).

9. Margate, in garden (H. C. Huggins).

10. Seal Chart (Adkin, *Proc. S. Lond. ent. nat. Hist. Soc.*, **1905-06**: 41); one, May 24th 1956 (G. A. N. Davis).

11. Wateringbury, one, June 1906, one, May 1907, in E. Goodwin coll. (C.-H.). Mereworth (H. C. Huggins). Benenden, one, May 27th 1939, G. V. Bull (C.-H. coll.).

12. Ham Street, 1934 (see under *Variation*); ♀, taken September 17th 1953, in E. J. Hare coll., may have been one of a partial second generation (C.-H.).

13. Kilndown, one, May 2nd 1936, G. V. Bull (C.-H. coll.). Tunbridge Wells (E. D. Morgan).

14. Sandhurst (G. V. Bull).

16. Folkestone* (Ullyett, 1880).

VARIATION. — A ♀ in my coll. taken by Dr. E. Scott at Ham Street, May 15th 1934, is referable to ab. *delamerensis* Buchanan White (C.-H.).

In RCK are the following named aberrations: *pallidaria* Krul., one, Swanscombe, May 27th 1905, H. C. Huggins; Gravesend, one, May 31st 1905, H. C. Huggins; *fasciata* Wolff, Cuxton, four bred; Greenhithe, one, 189-; Kent, May 12th 1913, one [Brasted, R. M. Prideaux]. Also, ab. "markings light transverse lines reduced to dots", West Wickham, bred May 1887 (4), Westerham, one, bred May 16th 1904; ab. "median area clearly defined", Chislehurst, one, 1905.

FIRST RECORD, 1831: Birch Wood (Stephens, *Haust.*, 3: 191).

E. consonaria Hübner : Square-spot.

Native. Woods (particularly those on the chalk or greensand); on oak, birch, yew.

1. Birch Wood, one, May 6th 1821 (Curtis, *Br. Ent.*, 280); several (Stephens, *Haust.*, **3**: 191). West Wickham; Abbey Wood; Shooters Hill (West, in *Wool. Surv.*, 1909). Petts Wood, one, May 17th 1931 (S. F. P. Blyth); frequent 1951 and 1952, larvae on oak and birch (A. M. and F. A. Swain).

6. Greenhithe, one, 1859 (Fenn, *Diary*). Eynsford, one, May 17th 1940; Kingsdown, a larva on yew from which an ab. *nigra* Bankes was reared c. 1954 (B. K. West).

6a. "Kent" [? Chattenden]*, May 1859, "took thirty-eight" (Allchin, *Ent. week. Int.*, **8**: 3). Mark Oak Wood (Chaney, 1884-87). Darenth, one or two annually, 1902-10, when looked for (H. C. Huggins).

7. Faversham (Morris, *Brit. Moths,* **1**: 128). Wigmore (Chaney, 1884-87). Sharsted (H. C. Huggins). Westwell, locally common; Long Beech Wood (Scott, 1936).

8. Folkestone* (Ullyett, 1880). Elham (W. E. Busbridge); near Barham, one at light, May 4th 1935 (E. & Y., 1949), may refer. West Wood, one, June 9th 1949 (Morley, *Proc. S. Lond. ent. nat. Hist. Soc.*, **1949-50**: 39); fairly common, 1949 (Morley, *Trans. Folkestone nat. Hist. Soc.*, **1949-50**: 18); one, May 7th 1950 (R. Cheesman); plentiful, c. 1953 (P. Cue); May 31st 1958 (de Worms, *Entomologist,* **92**: 69).

10. Seal Chart, one, June 18th 1887 (Fenn, *Diary*). Sevenoaks (*V.C.H.*, 1908). Brasted Chart, May 5th 1913 (Gillett, *Diary*); not rare (R. M. Prideaux).

11. Yalding (*V.C.H.*, 1908). Mereworth Wood; Wateringbury (E. Goodwin and others). Vallance Wood* [? Kings Wood, Sutton Vallance], May 18th 1913 (Gillett, *Diary*).

13. Pembury (Stainton, *Man.*, **2**: 28). Tunbridge Wells, one, 1957, L. R. Tesch (C.-H.).

16. Near Hythe* (Morley, 1931).

VARIATION. — Doncaster (*Ent. Rec.*, **18**: 223), in 1906, observed that the melanic ab. *nigra* Bankes was first discovered by Edward Goodwin near Maidstone [Mereworth] about 1892, that it had occurred there annually till then, and that it was less numerous than the type. He, moreover, stated that normal females in the affected district yielded about 10% melanics; ova from black females yielded 30%-75%, averaging about 50%; black ♀ x black ♂ gave 38 black and four typical. W. A. Cope told me that he and Goodwin used to get *nigra* regularly in Mereworth Wood, and since I took one (a female) there on May 15th 1949, the form evidently persists at this its original locality. From this 1949 specimen I reared some 20 moths of which approximately 80% conformed to *nigra* (C.-H.). Elsewhere in Kent *nigra* has been noted at Kingsdown (div. 6) by B. K. West (*vide supra*). In J. J. Walker coll. at Hope Dept., Oxford, are 15 *nigra* bred from larvae of Rainham (div. 7) stock obtained from L. W. Newman (Woodforde, *Entomologist,* **55**: 13).

In RCK, are 139 examples of ab. *nigra* Bankes from Kent including the lectotype "Kent bred 1905 E. Goodwin". Also, an ab. of "strong rufous tint", Sevenoaks, five bred 1887.

FIRST RECORD, 1829: Curtis, *loc. cit.*

E. extersaria Hübner : Brindled White-spot.

Native. Woods; on oak.

1. West Wickham, one, 1859 (Allchin, *Ent. week. Int.*, **8**: 3); June 6th 1861 (Fenn, *Lep. Data*); at sugar, 1866 (Miller, in *Ent. Ann.*, **1867**: 154); abundant (Wells, *Entomologist,* **25**: 193); 1893 (Robinson, *Entomologist,* **26**: 224); 1902 (1), 1920 (2), 1926 (1) (A. M. Swain); at light, July 6th 1956 (1), June 11th 1963 (1) (C.-H.). Eltham (Jones, in Buckle and Prout, *Trans. Cy Lond. ent. nat. Hist. Soc.*, **1900**: 64). Abbey Wood (W. West, in *Wool. Surv.*, 1909). Holwood, 1906 (W. Barnes, in *Wool. Surv.*, 1909). Bexley, 1900 (Carr, *Entomologist,* **34**: 108). Joydens Wood, larvae fairly plentiful, September 1st 1919, few larvae, August 27th 1920; Bexley Park Wood, two larvae, September 13th 1922 (A. R. Kidner, *Diary*). Dartford*, 1897 (James, *Entomologist,* **31**: 57). Petts Wood,

occasionally; one on oak trunk, May 24th 1943 (S. F. P. Blyth); 1950 (A. M. Swain). Bromley Common, one c. 1938 (F. A. Swain). Dartford dist., 1952 (B. K. West).

3. Bysing Wood (H. C. Huggins). Barton Wood, one, 1937; Den Grove, one, 1936, nine, June 16th 1939 (C.-H.). Thornden Wood, common on pine trunks, 1938 (A. J. L. Bowes). Oldridge Wood (J. A. Parry). Eddington, one at light, July 3rd 1948 (D. G. Marsh, *Diary*).

6a. Darenth Wood (see *First Record*); two ♂♂, June 8th 1859 (H. Tompkins, *Diary*); June 12th, 23rd 1860 (Fenn, *Lep. Data*); larvae found feeding on oak (Meek, *Entomologist,* **4**: 127); (E. J. Hare). Chattenden (Chaney, 1884-87); (H. C. Huggins). Mark Oak Wood; Cobham (Chaney, 1884-87).

7. Chatham*, exhibited by W. C. Chaney at meeting of S. London Entomological and Nat. Hist. Soc. on June 19th 1872 (*Entomologist,* **6**: 144). Wigmore Wood (Chaney, 1884-87). Longton Wood (H. C. Huggins). Kings Wood, three, June 14th 1934 (T. G. Edwards).

8. Folkestone* (Ullyett, 1880). Elham Park Wood, one at acetylene light, July 3rd 1926, one, June 21st, two, June 22nd 1933 at dusk (W. E. Busbridge, *Diary*). Near Barham; Woolwich Wood (E. & Y., 1949). Bridge, c. 1946 (R. Gorer). Betteshanger, July 6th 1957 (R. F. Bretherton).

10. Brasted, occasionally on trunks (R. M. Prideaux). Sevenoaks, one at light, June 28th 1947 (W. E. Busbridge, *Diary*). Westerham, one, July 6th 1956 (C.-H.).

11. Wateringbury (*V.C.H.,* 1908). Hoads Wood, at sugar, 1951 (P. Cue). Aylesford, 1952 (2), 1953 (1) (G. A. N. Davis). Sevenoaks Weald, one, June 20th 1960 (E. A. Sadler).

12. Ham Street, not uncommon at light, June 17th 1934 (A. J. L. Bowes); at sugar, May 22nd 1957 (R. A. Jackson, *Diary*); larva on oak (D. R. M. Long); Orlestone Woods, June 2nd-4th 1950, June 1st-2nd 1956 (R. F. Bretherton); 1939, and regularly since, several fresh examples at m.v. light in Long Rope, June 21st 1975 (C.-H.).

13. Pembury (Stainton, *Man.,* **2**: 29); c. 1950 (Miss V. M. Sage). Tunbridge Wells (E. D. Morgan). Goudhurst, one at m.v.l., June 6th 1963 (W. V. D. Bolt).

14. Sandhurst (G. V. Bull).

16. Hythe (Morley, 1931).

VARIATION. — In my experience the moth is fairly constant, but I have in my coll. an extreme melanic ab. *variegata* Raebel ♂, taken off a street lamp in June 1912 at Bickley by W. A. Cope, and which he kindly gave me (C.-H.).

In RCK, is ab. *intermedia* Raebel, West Wickham, two bred May 24th 1893 from larvae from B. A. Bower; two bred 1897 and 1898, from larvae from B. A. Bower.

FIRST RECORD, 1831: Darenth Wood, two many years since (Stephens, *Haust.,* **3**: 192).

Aethalura punctulata Denis & Schiffermüller : Grey Birch.

Native. Woods, alder carr; on birch [and alder]. Recorded from all divisions except 2, 4, 9, 15. "Generally common" (*V.C.H.,* 1908).

A. M. Swain has taken the larva on birch at Petts Wood; and A. R. Kidner (*Diary*) took larvae at St. Pauls Cray, August 4th 1909 (several), August 2nd 1912 (a few). The species is mainly found among birch in Kent, but in 1960, M. Enfield observed it commonly in an alder carr at West Ashford.

The moth is perhaps most often found at rest on tree trunks and is normally on the wing from the beginning of May until early June. On April 8th 1926, near Faversham, Huggins (*Entomologist,* **59**: 126) found three moths, one of which was "very faded and worn, and had probably emerged at least a week before". D. R. M. Long has noted the moth at Bromley as late as July 2nd in 1962; but in 1924, Carr (*Ent. Rec.,* **36**: 143) records finding a specimen on a tree trunk at Westerham on September 24th, and presumably representing one of a partial second generation.

FIRST RECORD, 1829: Birch Wood (Curtis, *Br. Ent.,* 280).

Ematurga atomaria L. : Common Heath-moth.

Native. Chalk downs and rough chalky places, sandpits, heaths and heathy woodland; on *Calluna vulgaris.* Recorded from all divisions except 2, 4, 15. The species is decidedly local, but is often abundant where it occurs, especially on heaths as e.g. on Hayes Common (div. 1) and Seal Chart (div. 10), and on chalk downs in div. 8 and elsewhere. The *V.C.H.* (1908) gives it as "Generally abundant".

A. R. Kidner (*Diary*) notes finding a larva on St. Pauls Cray Common on August 2nd 1913; and Huckett (*Ent. week. Int.,* **10**: 51) records larvae feeding on heath (*C. vulgaris*) at West Wickham. Although the moth is one of the most plentiful of chalk insects, its foodplant (or foodplants) in such situations in the county is unknown or has never been recorded to my knowledge. On May 22nd 1947, J. F. Burton encountered the moth plentifully in the sandpit at Charlton (div. 1), and he writes (*in litt.*) that "heather and heaths no longer grow in this locality, although they probably did so many years ago". He adds that "nowadays the larvae must feed [there] either on broom or some other leguminous plants".

VARIATION. — There are two very distinct races in Kent. (1) The large pale "grass" form found on the chalk and which is referable to *atomaria atomaria* L. (2) The small dark "heath" form occurring on heathlands and which conforms to *atomaria minuta* Heydemann.

I possess two ♂♂ from Kent of the extreme ab. *unicoloraria* Staudinger; one of which I took at Westwell (div. 7), on June 5th 1938; the other taken by Dr. G. A. N. Davis on Seal Chart (div. 10), June 11th 1956 (C.-H.).

The following named aberrations from Kent are in RCK: — *fasciata* Heqvist, Westwell, one, 1908, Dover, one, Chatwin, 1882, Folkestone, one, S. G. Hills, 1911; *ustaria* Fuchs, Folkestone, 10 ♂♂ bred 1924; *kindervateri* Schawerda, Wye, one, 1906, Folkestone, several; *tenuilineata* Lempke, Dover, three; *unimarginata* Cornelsen, Dover, one, Bailey, 1883, Kent, one [R. M. Prideaux], 1906; *mediofasciata* Nordstrom, Folkestone, three, 1925, Sevenoaks, one, 1905; *virilis* Stauder (this form is that of a ♀ with ♂ colouration), Folkestone, several, Wye, several; trans ad *virilis* Stauder, Folkestone, N. Kent, Dover; *caloraria* Stauder, Folkestone, one, Dover, one. Also, ab. with "antemedian heavily developed", Chislehurst, one, 1902, one, 1911; ab. with "darkened base", Walmer, one, 1891; ab. with "subterminal strong", E. Kent, one, Folkestone, one; ab. with "lines moved inwards", E. Kent, one, Folkestone, one; ab. with "lines replaced by yellow", Folkestone, one.

In RCK is a somatic mosaic ♂ from Wye; also, an extraordinary ♂ *atomaria* with six wings taken by C. P. Pickett at Folkestone in 1906 (cf. Pickett, *Proc. S. Lond. ent. nat. Hist. Soc.,* **1906-07**: 88, *Entomologist,* **39**: 261, *Ent. Rec.,* **18**: 190).

A gynandromorph (left side ♂) taken in E. Kent, was exhibited by Embry (*Proc. S. Lond. ent. nat. Hist. Soc.,* **1937-38**: 22).

FIRST RECORD, 1775: "Chalk pits by Charlton" (Harris, *Aurelian's Pocket Companion,* 31).

Bupalus piniaria L. : Bordered White.

Resident. Woods, copses, plantations; on *Pinus sylvestris.* Recorded from all divisions except 2, 4, 5, 9. "Generally common amongst fir trees" (*V.C.H.,* 1908).

This species sometimes occurs in exceeding abundance, but is also liable to extreme changes in numerical strength. W. A. Cope observed that at Keston (div. 1) in 1950, he made numerous attempts to beat for the larva but not a single one came to hand, though only a few years before he had beaten there from the same pines well over 100 in an afternoon. Fenn (*Diary*) records that at Seal Chart on June 30th 1888, he witnessed the moth flying there in hundreds.

VARIATION. — Normal Kent ♂♂ have pale yellow ground and are referable to *flavescens* Buchanan White. Typical ♂ *piniaria* has white ground and this form is apparently only of occasional occurrence in Kent. J. F. Burton took a male in Barnett Wood, Hayes, June 16th 1949, in which the ground was white.

Chittenden (*Proc. S. Lond. ent. nat. Hist Soc.,* **1899**: 107) exhibited

"both white and yellow forms of the female" from Ashford; and Adkin (*Proc. S. Lond. ent. nat. Hist. Soc.*, **1904-05**: 59) a remarkable male taken at West Wickham Wood in 1888, in which "the usual dark markings were represented by two small ill-defined dark spots on the costa of each forewing and dark spots on the fringes, the whole of the remainder of the wings being of a pale brownish yellow, with the veins darker brown".

The following named aberrations are in RCK: *immacula* Dzurz., Darenth, one, bred 1906; trans ad *immacula* Dzurz., North Kent, one; *costimaculata* Lempke, North Kent, one, 1901; *rautheri* Krausse, North Kent, one, 1918. Also, ab. with "basal streak joined to apical blotch by transverse stripe", Blean, one, Westerham, one.

Chittenden (*Proc. S. Lond. ent. nat. Hist. Soc.*, **1900**: 87) exhibited a gynandromorph (left side male) from West Wickham, which is probably the specimen in RCK taken at West Wickham, June 13th 1900.

First Record, 1831: "Rare till within these few years within the metropolitan district" (Stephens, *Haust.*, **3**: 147). A more positive Kent record dates from 1858: Perkins, *Ent. week. Int.*, **4**: 111.

Cabera pusaria L. : Common White Wave.

Native. Woods, carr, bushy places; on sallow, alder, oak. Found in all divisions; few records for 9, 15. "Generally common" (*V.C.H.*, 1908).

The moth is normally out by the third week in May and reaches its optimum about the third week in June. However, in 1937, A. J. L. Bowes took one at Ham Street as early as May 3rd; and in 1962, D. R. M. Long one at Bromley on October 6th, an extremely late date. Undersized specimens frequently occur on the wing as late as the third week of August, and these may represent a partial second generation.

The larva has perhaps most often been found on sallow. D. R. M. Long has taken it on this at Bromley; and A. R. Kidner (*Diary*) found larvae at Bexley on alder, September 19th 1911 and at Chattenden on sallow, September 17th 1911. A. M. Swain took the larva at Petts Wood on oak.

9. Cliffs End, one, July 9th, 1945 (A. H. Lanfear, *Diary*).

15. Dungeness, two, June 11th 1938 (A. M. Morley).

Variation. — The following aberrations are in RCK: *rotundaria* Haw., Westerham, bred 1925; *bilineata* Galvagni, Brasted Chart, two, bred 1913; *heyeraria* H.-S., Sydenham, T. Chitty, 1872 (this is presumably the specimen recorded as from Sydenham Hill, August 18th 1870, by J. P. Barrett in *Entomologist*, **5**: 215).

B. K. West took an example of ab. *lativittata* Cockayne in Swanscombe Park, which specimen I have seen (C.-H.); and Priest (*Entomologist*, **6**: 264) records a "black var." from Darenth Wood, June 1872. Ab. *rotundaria* Haw. has been recorded on numerous occasions, but is probably only a product of starvation.

First Record, 1831: Stephens, *Haust.*, **3**: 197.

C. exanthemata Scopoli : Common Wave.

Native. Damp woods, carr, bushy places; on sallow. Found in all divisions except 9. "Generally common" (*V.C.H.*, 1908).

Huckett (*Ent. week. Int.*, **10**: 117) records breeding the moth from larvae found on sallow at Darenth. Kidner (*Diary*) found larvae at Joydens Wood, September 25th 1911 (fairly plentifully); St. Pauls Cray Common, September 1910 (fairly plentifully), July 28th 1925 (one, full-fed); Darenth, July 12th 1903 (a few), September 25th 1910 (fairly plentifully).

The moth appears normally to be single brooded from May to July with perhaps an occasional partial second generation. C. Fenn (*Diary*) writes that at Lee in 1861, C. Cortissos took the moth as early as April 25th, and that he himself saw it at Deal in 1888 as late as August 30th, and in 1892 commonly at Ham Fen on August 17th.

Variation. — In RCK are the following named aberrations: *approximaria* Haw., Brasted Chart, bred 1915; *bistriaria* Meves, Brasted Chart, bred 1913; *crassesignata* Lempke, Greenhithe, A. B. Farn, two, 1900.

Goodson (*Proc. S. Lond. ent. nat. Hist.*, **1961**: 40) records ab.

crassesignata Lempke from Ham Street, June 15th 1961.
FIRST RECORD, 1844: G. Bedell, Zoologist, 735.

Lomographa bimaculata F. : White Pinion-spotted.

Native. Woods, copses, hedgerows; foodplant unrecorded.

1. Lanes between Darenth Wood and Birch Wood (see *First Record*). Lee, one, May 16th 1862; Old Park Wood, May 17th (12), 24th (10) 1862 (Fenn, *Diary*). Plumstead (Turner, *Proc. S. Lond. ent. nat. Hist. Soc.*, **1895**: 45). Bexley, formerly very common among wild cherry (A. H. Jones, in *Wool. Surv.*, 1909). West Wickham (Wells, *Ent. Rec.*, **3**: 35); Well Wood, one, May 30th 1957 (C.-H.). Chislehurst, always very scarce; one, June 21st 1902, one, June 4th 1905 (S. F. P. Blyth). Petts Wood, frequent, 1948 (A. M. Swain). Bexley (L. T. Ford). Orpington, a few (R. G. Chatelain). Blackheath, one, worn, June 21st 1960 (A. A. Allen). Bromley, 1960 (2), 1964 (2) (D. R. M. Long). Joydens Wood, ♂, May 17th 1968 (D. O'Keeffe).

2. Greenhithe* (Farn MS.).

3. Bysing Wood (H. C. Huggins). Clangate Wood, Sturry, May 28th (1), 31st (1) 1932 (W. E. Busbridge, *Diary*). Broad Oak, 1938, 1939, 1953 (C.-H.). Church Woods, Blean, one, May 28th 1956 (A. A. Allen).

5. Between Chelsfield and Cudham, 1898 (Carr, *Entomologist*, **32**: 40). Farnborough*, numerous (W. Barnes in *Wool. Surv.*, 1909). Westerham (R. C. Edwards). High Elms, one, May 20th 1963 (D. R. M. Long). Biggin Hill, one, May 12th 1965 (C.-H.).

6. Cuxton (Tutt, *Ent. Rec.*, **4**: 229). Shoreham, June 10th-11th 1899, "much more plentiful than *L. temerata*" (Carr, *Entomologist*, **33**: 47). Otford (Adkin, *Proc. S. Lond. ent. nat. Hist Soc.*, **1902**: 50). Clay Lane Wood (H. C. Huggins); 1914 (F. T. Grant). Eynsford, larva, August 19th 1933 (Blair, *Proc. S. Lond. ent. nat. Hist. Soc.*, **1933-34**: 33); not common (B. K. West). Trottiscliffe, several, June 10th 1968 (D. O'Keefe).

6a. Darenth Wood (Stephens, *Haust.*, **3**: 295); 1859 (Harding, *Ent. week. Int.*, **6**: 76); rather common, 1861 (Jones, *Ent. week. Int.*, **10**: 187). Cobham Great Wood, May 23rd 1868; Chattenden Roughs, June 2nd 1869 (J. J. Walker MS.). Chattenden Roughs, 1912, 1913, 1919, 1925 (F. T. Grant).

7. Hills between Maidstone and Sittingbourne (Green, *Young Nat.*, **1** (34) 267). Westwell (Scott, 1936).

8. Folkestone* (Ullyett, 1880). Dover district (Stockwell, *Entomologist*, **34**: 26). Crundale (G. V. Bull). Stowting; Brook (C. A. W. Duffield). Woolwich Wood, one, May 29th (1), June 6th (1) 1927 (W. E. Busbridge, *Diary*). Wye, May 24th 1933; Covert Wood, June 10th 1935; Ewell Minnis, June 14th 1935 (J. H. B. Lowe). Dover, one, April 26th 1943, two, May 12th 1945 and since (B. O. C. Gardiner). Coombe Wood (E. & Y., 1949). Betteshanger Park, June 11th 1951 (W. D. Bowden). Brook, one, 1960 (D. Youngs).

11. Yalding (*V.C.H.*, 1908). Mereworth (Morgan, *Lepidoptera of Tunbridge Wells District* MS.). Aylesford (G. A. N. Davis). Sevenoaks Weald, May 12th (1), 16th (1) 1959, May 17th (1), June 4th (1) 1960 (E. A. Sadler). Hoads Wood (P. Cue).

12. Ashford Town, in garden (P. Cue MS.). Willesborough, one, June 24th 1955; Wye, one, June 15th 1955 (W. L. Rudland). Ham Street (Scott, *Proc. S. Lond. ent. nat. Hist. Soc.*, **1959**: 77). West Ashford, in an alder wood, c. 1960 (M. Enfield).

13. Tunbridge Wells, scarce (Knipe, 1916). Bayhall (Morgan, *Lepidoptera of Tunbridge Wells District* MS.).

16. Hythe, 1930 (Morley, 1931).

VARIATION. — At the Annual Exhibition of the South London Ent. Soc. on November 4th 1875, W. H. Tugwell exhibited a "suffused var." from Strood (Champion, *Ent. mon. Mag.*, **12**: 166). Cockayne (*Entomologist*, **83**: 54) described ab. *suffusa*, holotype ♀, N. Kent, 1886, Tugwell coll., and figured by Barrett, *Br. Lep.*, plt. 74, fig. 3b).

In RCK is ab. *costijuncta* Cockayne, paratype, Chattenden, 1901; and I have an example of this ab. that I took at Downe on May 21st 1956 (C.-H.).

FIRST RECORD, 1831: Stephens, *Haust.*, **3**: 294.

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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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CONTENTS

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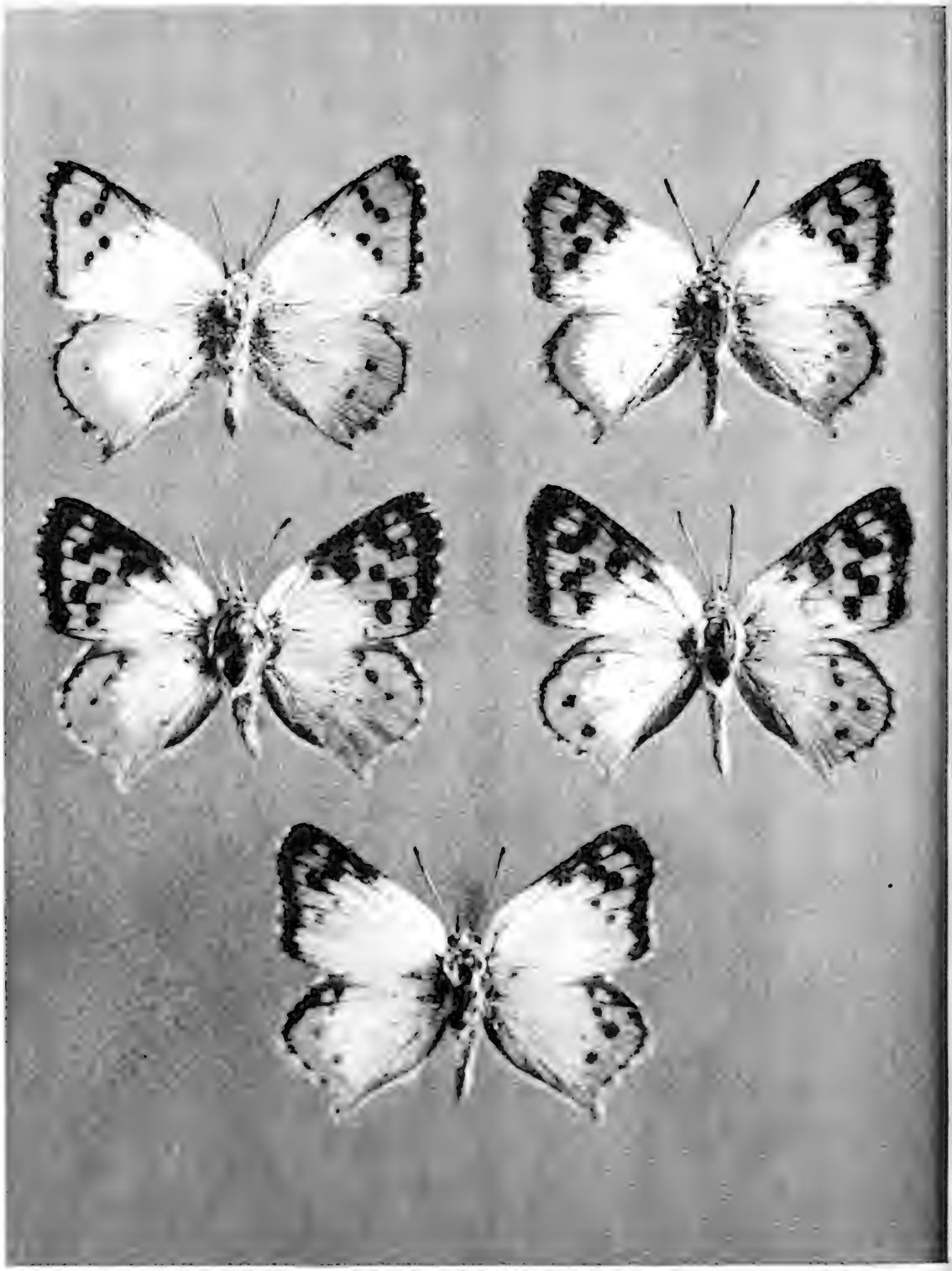

Photo: S. F. Henning

Poecilmitis trimeni Riley ♂ — *Poecilmitis dicksoni* spec. nov. ♂
Poecilmitis beulah Quickelberge ♂ — *Poecilmitis pan* Pennington ♂
Poecilmitis perseus spec. nov. ♂
Uppersides x 2

New Species of *Poecilmitis* Butler (Lepidoptera: Lycaenidae) from Namaqualand, Cape, South Africa

By W. H. Henning*

Poecilmitis trimeni Riley stat. nov.
Poecilmitis thysbe trimeni Riley, 1938:
Trans. R. ent. Soc. Lond., **87**: 240.

Riley says in his original description, "This is a small pale race characterised by the smooth contour of the wings and the even black borders. The border shows no sign of the marked indentations which are so prominent in typical *P. thysbe* (L.), no trace of orange lunules, and only traces of pale grey cilia between the extremities of the veins." It has been generally accepted for some time that this is a good species in its own right, and the raising in status is now suggested. The species appears to be confined to its type locality of the Port Nolloth area, McDougall Bay, Namaqualand, and the type material is that cited at the time of the original description, viz., Holotype ♂ and allotype ♀ (B.M. Type No. Rh. 453 ♂, 454 ♀): Pt. Nolloth, Namaqualand, August 1890 (R. Lightfoot) (ex. Trimen coll.).

Poecilmitis **dicksoni** spec. nov.

Although this little *Poecilmitis* has often been confused with *P. trimeni* Riley in the past, it is actually more closely allied to *P. pan* Pennington and *P. beulah* Quickelberge.

P. dicksoni is a smaller, much darker insect than *P. trimeni* in that (a) the margins are twice the width of those of *P. trimeni* and (b) the veins are black, not orange as in the latter. The underside of *dicksoni* is variable, but is basically a flat brown, whereas *P. trimeni* is usually a dark brown with silvery markings.

This species was first discovered by Mr. C. G. C. Dickson and his nephew Mr. C. W. Wykeham, who caught a useful series of seven males south of Kamieskroon on 2nd September, 1962. C.G.C.D. says: "The specimens were found on a rough slope, with rocks and scattered vegetation and occurred here and there for a considerable distance as we ascended the slope in the direction of the summit. They had the usual irregular flight of members of the *thysbe* group within a circumscribed area and settled frequently on the ground or sometimes on rocks and stones." Dr. J. Kaplan subsequently visited the area on the 27th September, 1973 and took two females.

In December, 1974, Mr. Ivan Bampton came across *P. dicksoni* in numbers ranging from the coast of Hondeklipbaai, where he caught seven specimens, and along the road towards Wallekraal, 22 specimens 8 km. from Hondeklipbaai, 13 specimens at the 18 km. mark and three specimens further on. Bampton said that unlike *P. trimeni* which flies among scattered shrubby vegetation sheltered by sand dunes just beyond the highwater mark, and never penetrates very far inland,

* 1 Lawrence Street, Florida Park, 1710, South Africa.

P. dicksoni was much more plentiful away from the coast. The vegetation in this area was more varied than that on the beach front and several plants were two or three feet high with the occasional *Rhus* bush reaching four to five feet. *P. dicksoni* appears to fly higher than *P. trimeni,* but frequently settles on the ground and sometimes on a twig in the lee of a small shrub.

The description is as follows: Orange with light metallic blue from bases in both wings, and black markings generally as in *P. trimeni,* but can be separated easily from this species by its heavier black margins and spots, the blackish veins in the apical area of the forewings, and paler, "flatter" underside.

Holotype male: *Upperside.*

Forewing. Iridescent blue extends up to black discocellular mark at the middle of the costa, crosses the inner portion of area 2, and below vein 2 almost covers the orange ground colour, extending to outer-margin from vein 1 down to inner-margin. The outer-margin is straighter than in *P. pan* or *P. beulah.* The costal black edging is well defined beyond the blue area, the post-discal black spots being large and conspicuous in the orange area, and the veins beyond them thinly black, with the outer-marginal black border very well developed. Length of forewing, from base to apex, 9 to 13 mm. (11 mm. in the holotype).

Hindwing. The dark blue portion extends from the base to halfway along the costa and almost two-thirds along the inner-margin, but the iridescent blue reaches and thinly covers all five post-discal black spots, leaving a fairly wide orange area between the blue and the hind-marginal border. This border is about half as broad as that of the forewing and extends down to vein 2, where it fades out. The shape of the hindwing is slightly more angular than in *P. trimeni* and the "tail" at vein 1 b is longer but thinner than in *P. pan* or *P. beulah.*

Cilia short, dark brown at end of veins, dark grey between the extremities of the veins, on both forewing and hindwing.

Underside. Forewing has the usual metallic-centre spots beyond vein 4, and the other black spots of the *thysbe* group; the markings being very similar to those of *P. pan.* The apex and hind-margin of the forewing and the whole of the hindwing is orange-buff, slightly darker than but very similar to *P. pan* with the striae on the hindwing faintly showing and a slightly more pronounced brown suffusion in areas 4 to 5.

Paratypes show little variation except that some males have the spots in the hindwing smaller and/or fainter, or even absent as in three of the paratypes.

Allotype female: *Upperside.*

Forewing. Similar to *P. beulah* in that the solid blue lacks the surface iridescence and is much reduced, hardly reaching a third of the way along the costa, and halfway along the inner-margin. There is a rectangular spot in the cell and a double spot in area 1 b. Beyond the post-discal spots, the veins are black as in the male, a feature also of *P. beulah,* but

Plate III

Photo: S. F. Henning

Poecilmitis trimeni Riley ♂ — *Poecilmitis dicksoni* spec. nov. ♂
Poecilmitis beulah Quickelberge ♂ — *Poecilmitis pan* Pennington ♂
Poecilmitis perseus spec. nov. ♂
Undersides x 2

Plate IV

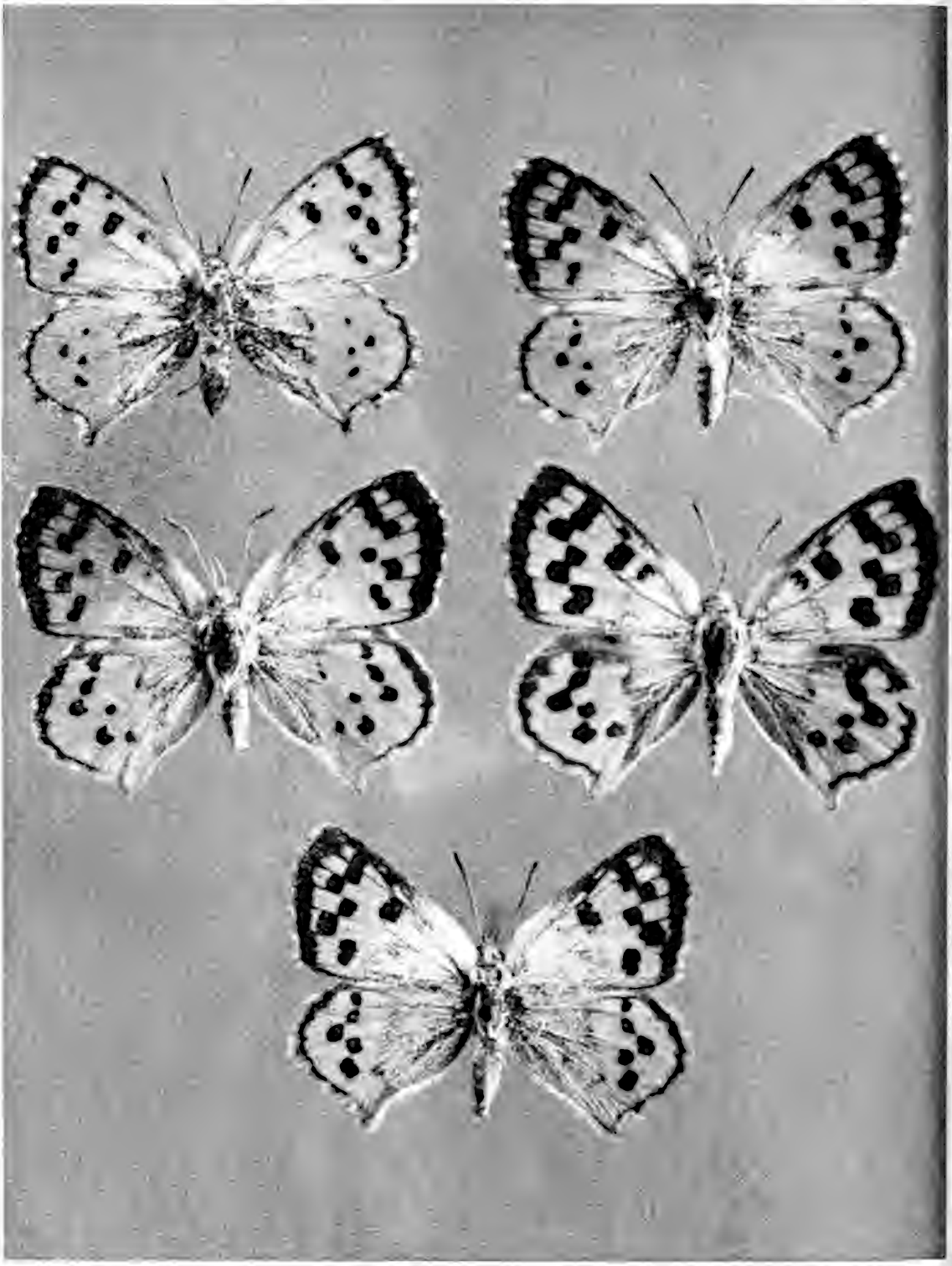

Photo: S. F. Henning

Poecilmitis trimeni Riley ♀ — *Poecilmitis dicksoni* spec. nov. ♀
Poecilmitis beulah Quickelberge ♀ — *Poecilmitis pan* Pennington ♀
Poecilmitis perseus spec. nov. ♀
Uppersides x 2

not of *P. trimeni*. The termen is much more rounded than in the male, and the cilia lighter grey between the vein extremities. Length of forewing, from base to apex, 9 to 14 mm. (12 mm. in the allotype).

Hindwing. The blue portion extends from the base to less than halfway along the costa, covering the cell and extending straight across to two-thirds of the way along the inner-margin, leaving clear the black spots in the orange area. The black marginal edging extends down to the "tail".

Underside. Similar to the male, except that the submarginal black streak of the forewing is more prominent, and the striae of the hindwing slightly more pronounced.

Paratypes are similar to the allotype, except for the hindwing where a sixth post-discal spot may be present in area 1 c.

On the underside the brownish suffusion in area 5 is usually present, but never very well developed. Sometimes the very faint whitish rays in area 3 of the hindwing are more noticeable, but the greyish patches present in *P. trimeni* are always lacking.

♂ Holotype. NAMAQUALAND: 18 kms. east of Hondeklipbaai, 15.xii.1974 (I. Bampton), deposited in the Transvaal Museum, Pretoria, South Africa.

♀ Allotype. NAMAQUALAND: 8 kms. east of Hondeklipbaai, 14.xii.1974 (I. Bampton), also in the Transvaal Museum.

Paratypes. NAMAQUALAND: Hondeklipbaai, five ♂ ♂, one ♀, 6.xii.74 (I. Bampton); two ♂ ♂, 24.ix.75 (Dr. J. Kaplan); 8 kms. east of Hondeklipbaai: six ♂ ♂, four ♀ ♀, 7.xii.74, four ♂ ♂, two ♀ ♀, 13.xii.74, two ♂ ♂, two ♀ ♀, 14.xii.74 (all I. Bampton); 18 kms. east of Hondeklipbaai: 10 ♂ ♂, three ♀ ♀, 15.xii.74 (I. Bampton); Wallekraal/Soebatsfontein road: two ♂ ♂, two ♀ ♀, 15.xii. 74 (I. Bampton). Some of these paratypes will be distributed to the British Museum, the Allyn Museum, Sarasota, Florida, U.S.A., the Transvaal Museum, and various private collections in South Africa; the remainder will stay in the Henning collection.

The butterfly is dedicated to Mr. C. G. C. Dickson who took the species in 1962 and as a small tribute to his valuable systematic work on South African Lycaenidae, and particularly, as a token of appreciation of the kind assistance received from him by the author over a period of many years.

Poecilmitis **perseus** spec. nov.

This is another small *Poecilmitis* which, hitherto, has been confused with *P. trimeni* Riley. Although Dr. G. Van Son took seven specimens at Hondeklipbaai, Namaqualand, as long ago as November 1933, credit for the discovery is really due to Mr. Ivan Bampton, who visited the Hondeklipbaai area in December 1974. Mr. Bampton said that the majority of *P. perseus* were collected either at the beach front south of Hondeklipbaai or not far inland along the road from Hondeklipbaai to Wallekraal. The statistics were: 19 on the beach front, 17 alongside the road 8 kms. from Hondeklipbaai, seven at the 18 km. mark, and one further on. Dr. J. Kaplan visited

the area on 24th September, 1975, and took five specimens at Hondeklipbaai and four at the 18 km. locality.

P. perseus was much easier to keep under observation, and appeared to fly at a slightly higher elevation than either *P. dicksoni* or *P. trimeni.* Mr. Bampton says: "Perhaps the main reason for my finding them easier to observe was the thicker ground vegetation with less open areas of white sand. Some of the small shrubs were almost a meter in height, and *perseus* when coming to rest chose the lee side of these small bushes, and used twigs as resting places as much as they did the ground. The terrain in this area differed from that at Mcdougall Bay, Port Nolloth, inasmuch as there were no sand dunes, the sand being of a permanent nature which would no doubt account for differences in the amount of vegetation."

Description as follows: Orange-yellow with extensive metallic blue from bases in both wings, and differs from *P. trimeni* and *P. dicksoni* in the more angular shape of the fore- and hindwings, paler, more yellowish ground-colour, the quality and extent of the blue and, like *P. dicksoni,* it is smaller and darker than *P. trimeni.*

Holotype: *Upperside.*

Forewing. The metallic blue is of a more solid, silvery greyish-blue with less iridescence than in *P. dicksoni* and extends to and obscures the black discocellular mark below the middle of the costa, then crosses diagonally over the wing, partially obscuring the spots in areas 2 and 3, and meets the well-defined marginal black border at vein 2. The termen is slightly angled above vein 4, being almost concave between vein 4 and tornus. The costal black edging beyond the blue area is not so well defined as in *P. dicksoni,* but the post-discal black spots in the orange area are also large and conspicuous, heavier than in *P. trimeni.* The veins between the post-discal spots and the margin are black as in *dicksoni.* Length of forewing, from base to apex, 10.5 to 14 mm. (11.5 mm. in the holotype).

Hindwing. The silvery-blue portion extends from the base to at least three-quarters of the way along the costa and more than two-thirds along the inner-margin, and obscures all but two of the post-discal black spots, leaving a relatively small orange area between the blue and the hind marginal border, which is narrower than in *P. dicksoni.* The spot in area 4 is slightly further from the base than in *dicksoni,* and as the hindwing angulation is slightly more pronounced, the two spots in areas 2 and 4 are almost parallel to the outer margin, whereas in *dicksoni* they are usually more in line with the end of vein 1 b.

Cilia dark brown at end of veins, grey between the extremities of the veins.

Underside. Similar to *P. dicksoni,* except that it is paler, the forewing being of a lighter orange and the hindwing a "flatter" brown, although the striae are slightly more distinct.

Paratypes show some variation in the shape of the fore-

Plate V

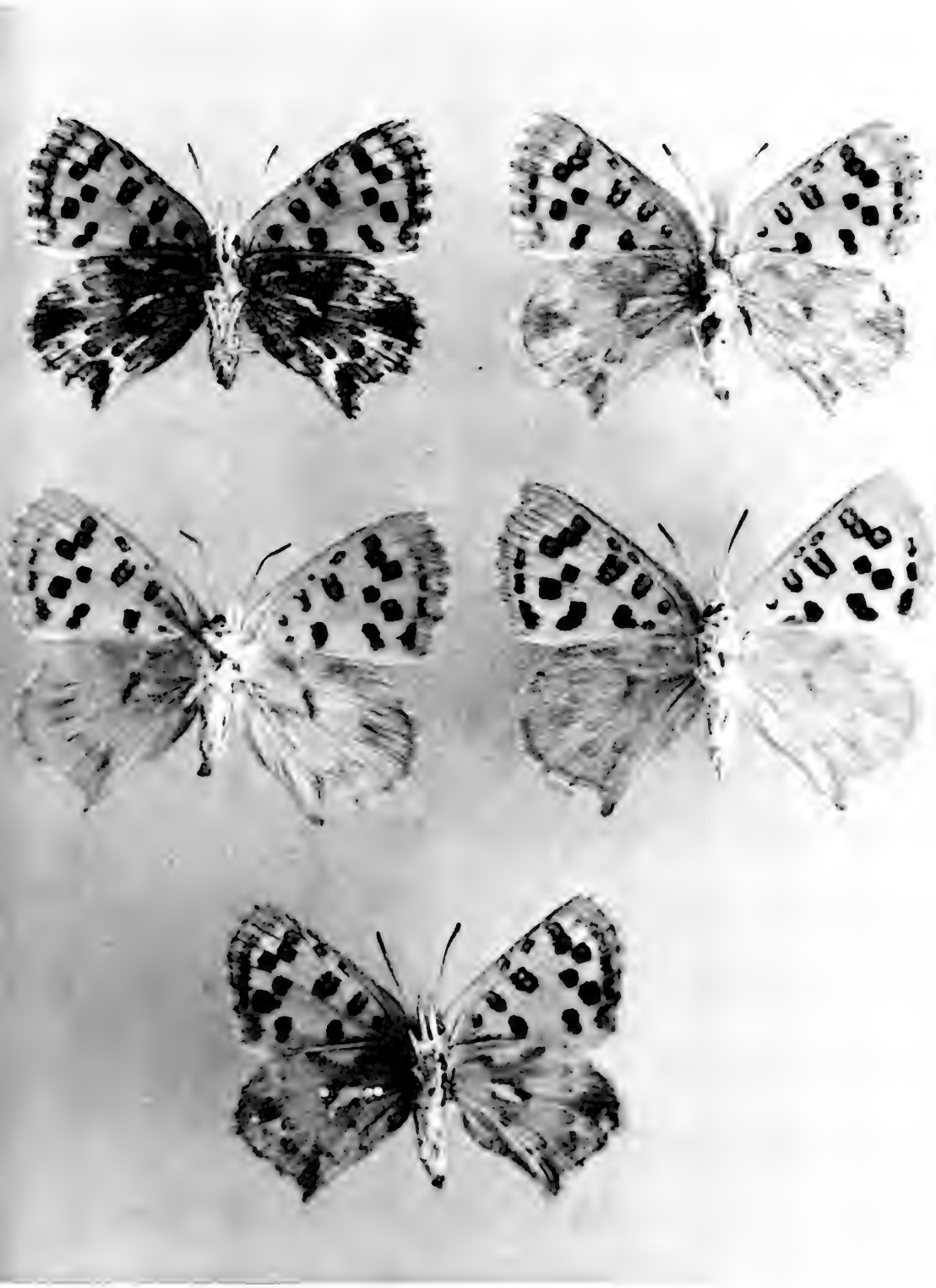

Photo: S. F. Henning

Poecilmitis trimeni Riley ♀
Poecilmitis beulah Quickelberge ♀
Poecilmitis dicksoni spec. nov. ♀
Poecilmitis pan Pennington ♀
Poecilmitis perseus spec. nov. ♀
Undersides x 2

wing, the distal-margin in some specimens being straighter between vein 4 and the anal-angle. In a few of the paratypes the spot in area 2 of the hindwing upperside is slightly nearer to the hind-margin, resulting in the two main spots not being as parallel to the outer-margin as they are in the holotype. On the undersides some specimens are indistinguishable from *P. dicksoni,* the slightly more distinct striae in the holotype not being present in these examples.

Allotype female: *Upperside.*

Forewing. The ground-colour is sandy orange-yellow, not as bright an orange as in *dicksoni.* The distal-margin is not as rounded as in *dicksoni,* being bluntly angled at vein 4, and straighter between vein 4 and the tornus. Greyish-blue area extends from base to a third of the way along the costa and two-thirds along the inner-margin. There is a rectangular spot in the cell and a double spot in area 1 b, a heavy spot in area 2 near the outer-margin, a smaller spot in area 3 closer to the cell, and the three spots in areas 4, 5 and 6 are very close to each other with the one in area 5 nearer to the cell. Beyond the post-discal spots the veins are thinly black with the outer-marginal black border well defined. Length of forewing, from base to apex, 11 to 14 mm. (13 mm. in the allotype).

Hindwing. Similar to *P. dicksoni,* except that the ground-colour is lighter, as in the male. The blue area extends from the base to the middle of the costa, then outwards to a black spot in area 1 c, whence it runs more or less parallel to the distal-margin to meet the inner-margin at a point about two-thirds from the base. There are five further black spots in the orange area, and the outer-marginal border is much narrower than in the forewing. The shape of the hindwing is more angular than in *P. dicksoni.* Cilia lighter grey between the vein extremities than in the male.

Underside. Similar to the male, but "flatter", with the striae much less distinct.

Paratypes show little variation except in the reduction of the blue area in the forewings of some specimens. On the hindwings the sixth spot in area 1 c is absent in two specimens, but the blue area always extends to this point and does not extend straight across the wing as in *P. dicksoni.* This is a constant difference and even old, faded specimens can be distinguished by means of this observation. In some specimens the distal-margin is lightly more rounded than in the allotype. Larvae and ova were obtained by I. Bampton and bred on *Zygophyllum* sp. by C. G. C. Dickson.

♂ Holotype. NAMAQUALAND: 18 kms. east of Hondeklipbaai, 15.xii.1974 (I. Bampton), deposited in the Transvaal Museum, Pretoria, South Africa.

♀ Allotype. NAMAQUALAND: 8 kms. east of Hondeklipbaai, 14.xii.1974 (I. Bampton), also in the Transvaal Museum.

Paratypes. NAMAQUALAND: Hondeklipbaai, 14 ♂ ♂, one ♀, 6.xii.74 (I. Bampton); one ♂, 4 ♀ ♀, 24.ix.75 (Dr. J. Kaplan), four ♂ ♂, three ♀ ♀, 11.xi.33 (Dr. G. Van Son);

8 kms. east of Hondeklipbaai: one ♀, 7.xii.74; eight ♂ ♂, five ♀ ♀, 13.xii.74; one ♂, one ♀, 14.xii.74 (all I. Bampton); 18 kms. east of Hondeklipbaai: four ♂ ♂, two ♀ ♀, 15.xii.74 (I. Bampton), four ♂ ♂, 24.ix.75 (Dr. J. Kaplan); Wallekraal/ Soebatsfontein road: one ♀, 15.xii.74 (I. Bampton). Some paratypes will be distributed to the British Museum, the Allyn Museum, Sarasota, Florida, U.S.A., Mr. C. G. C. Dickson, Mr. W. Teare and various other private collectors in South Africa; the remainder will stay in the Henning collection.

Acknowledgements

My thanks are due to my friend, Mr. I. Bampton, whose valuable field work made this paper possible, and also to my friend, Mr. C. G. C. Dickson, who read the manuscript and helped with some very useful advice.

Finally, thanks are also due to my sons, Stephen F. Henning and Graham A. Henning, for assistance rendered and helpful suggestions and criticisms.

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AGRIOPIS MARGINARIA F. F. FUSCATA MOSLEY IN WORCESTERSHIRE. — At Powick, near Worcester, on 6th April, 1974, I captured a specimen of f. *fuscata* in fresh condition; also another melanic of a paler colour which was possibly an intermediate. — A. E. C. ADAMS, Perrins Farm, Wood Green, Wadhurst, East Sussex.

ANOTHER PABULUM FOR AEGERIA VESPIFORMIS L. IN SUSSEX. — Buckler (1887) and South (early editions to 1948) give oak and elm bark as pabula for the Yellow-legged Clearwing (*A. vespiformis*) in Britain; later editions of South (from 1961) and Goater (1974) add sweet chestnut; however, "it is said to have been found in birch and other trees" (cf. A.E.S. Leaflet nr. 18 (1946)).

After visiting three different localities in Sussex during 1976 for the purpose of collecting Sesiid larvae from birch stumps, all the resulting pupae yielded moths of *A. vespiformis.* Although *vespiformis* was also bred from oak bark, this species seems to have replaced *A. culciformis* L. as the main lepidopterous wood-boring inhabitant of birch stumps in the area visited. References: A.E.S. Leaflet nr. 18 (1946). Buckler, W., 1887, *Larvae of British Butterflies,* Vol. 2. Goater, B., 1974, *The Butterflies and Moths of Hampshire and the Isle of Wight.* South, R. (all editions), *Moths of the British Isles,* Vol. 2. — C. PRATT, "Oleander", 5 View Road, Peacehaven, Newhaven, Sussex.

Commercial Entomology — or is One Man's Rarity Another's Livelihood?

By Brian O. C. Gardiner*

(*Concluded from page 9*)

One other point also that needs to be born in mind is that attractive and colourful butterflies on display in a case give the impression that some rare and beautiful object has been removed from its natural habitat—as indeed it may have been. But was it rare and beautiful? Or was it deadly and disastrous where it originated? *Papilio demoleus,* attractive enough in a frame on a wall, is a major pest of Citrus trees and needs keeping under control. There is also the case of the Tobacco hornworm. Two American farmers were trying to grow tobacco and suffered an infestation of this large hawk-moth. One of the farmers brought in a pest control firm, spent 5,000 dollars and ended up with a crop worth 4,000 dollars. The other farmer had had a bad time lately and could not afford the pest control firm. He went out and collected the hornworms after they had eaten all the tobacco and sold them for 4,000 dollars. Since of course he had had no expenses he ended up much the better off. So before we condemn the wild collection of specimens let us consider what harm they may have been doing and who, if anyone, has been deprived of them. While the trader is taking such specimens away from their natural habitat he is of course depriving the passer-by of the sight of them and making a profit, but the whole question is really one of semantics and the emotional response to the capturing of something beautiful which, as I have just said, forms a very minute part, almost certainly less than 0.1%, of the total trade in insects. We must face up to the fact that the real cause of extinction of species is due to changes in their habitat—either by development or simple changes in agricultural practices or by climatic changes (see Heath, 1974).

It has been suggested from time to time in the past that collecting was the cause of the extinction of species such as the Large copper and Large blue. It is certainly true that the former used to be extensively collected by traders of the day. However, it covered a large and difficult-of-access habitat. This habitat had already been extensively drained by 1800 and by 1860 when the Copper had gone this drainage was finally virtually completed, to the extent existing today. To my mind the draining of Whittlesea Mere was one of the largest acts of vandalism committed against nature in this country and resulted in immense destruction of livelihood for the poorer inhabitants of the region and all for a temporary, but immense, profit to the despoilators who carried out the work. When we look back today we can see what a magnificent wildlife refuge this area could have been and what a superb recreational area it could have become.

* A.R.C. Unit of Invertebrate Chemistry and Physiology, Department of Zoology, Downing Street, Cambridge.

It is almost certain that one reason why the Coppers did not survive even for a short time after the draining was due to the fact that the entire area was rigorously burnt, at the wrong time for the butterfly, in order to aid the subsequent ploughing.

One of the most frequently collected species by both traders and collectors has been among the Lycaenidae—the Blues. It must be admitted that vast numbers of these used to be taken often year after year. Older readers may recollect the heydey of such places as Royston Heath and the downs above Folkestone. Did this collecting result in the great decline of these species? Here again the answer is NO. It is difficult to say precisely why there has been this decline, but almost certainly a variety of factors is involved. The situation is very complex. With regard to these Blues, and particular *arion,* the question has been gone into very thoroughly in recent years and for those interested reference should be made to the work of Spooner, published 1963 in the *Entomologist,* and two recent papers by Messrs. Howarth (1973) and Muggleton (1974) respectively. Muggleton's conclusions, and he appears to be the first professional entomologist to have studied the problem, not as a part-time interest but as a full-time research investigation backed up by the resources of a university, are interesting enough to repeat in full. They are as follows:

"To conclude, the main point I wish to make is this, that collecting, climatic changes and insecticides are only secondary factors in the decline of these butterflies. Their results are normally reversible whereas those of the primary cause of the decline are not, and the primary cause of the decline is the destruction of habitats."

I would like to qualify that last sentence, "The destruction of habitats". This does not necessarily mean their physical destruction. It can also mean leaving them alone. Cease to graze sheep, we get a hawthorn thicket. Dry out a fen, we get birch/sallow woodland. The entomologist's butterfly paradise has given way to the ornithologist's delight. And this brings me to a heresy I should like to propound which is this. Should we better preserve our butterflies, not by trying to control their habitats, but by ruthlessly killing off the local birds. Let me explain this further. Many entomologists today, I believe, have collected abroad, and I believe that their experiences may be similar to mine. For when I was in Denmark some years ago and Switzerland last year, I was greatly struck by the immense numbers of butterflies, their thickness on the ground—and the absence of birds. The reason for this, of course, is the sporting Englishman's habit of only shooting game on the wing whereas all those foreigners shoot birds flying or sitting, large and small, and since we are now in the Common Market will not Brussels now order us to do the same? This of course, removes from the scene large numbers of insect eating predators. England is noted for its small bird density and many of these eat insects. I have already in my capacity on a Naturalist's Trust come across this clash of

interest, the birdwatchers preferring the hawthorn scrub on the chalk which is destroying the lepidopterist's habitat. I do not, of course, wish to offend the ornithologists, but I do think the pendulum has swung too far towards the preservation of birds to the exclusion of other species. There is a place for everything, and some areas at least should be set aside solely for more insects and the birds therein kept down. Let us consider a pair of butterflies or moths. They will mate and the female will then lay on average several hundred eggs. Only two of these, perhaps one half of a percent, is going to become another adult butterfly, so what happens to the rest? Some will die by accident, some by parasites, some may be collected, but the greater proportion will serve as food for birds. So even a slight reduction in the bird population could well lead to an increase in the butterfly population and in any case must far outweigh the depredations of the collector, who after all should really be regarded as merely another predator. And while he is charging around collecting, or running a light trap, he is, at the same time, keeping off the other predators who would otherwise be eating the insects he is catching. Net deficit—Nil. It is the collecting instinct that fires the enthusiasm for entomology. If it is to be banned, then that instinct will be turned to other things—stamps, coins, books. All excellent in themselves, but not quite the same as a love of nature, which I believe most entomologists have. Photography is but an adjunct to collecting. There is, too, little point in rearing, if the final results are not retained and recorded. I think the young entomologist needs to collect, he needs to obtain from dealers to complete a series, a group to compare with other localities, to prepare an exhibit or a teaching aid, to obtain livestock. I do not think even a considerable amount of collecting will harm any but a tiny minority of species. I entirely agree with Spooner that some of the species at present in danger of extinction, such as the Large blue butterfly, may be harmed by collecting, as a result of their present parlous state brought about by other factors and it is right in such cases to ban it. But perhaps the real reason for their state is the fact that here in England they are on the edge of their range, and species on the edge of their range can be expected to come and go (see Heath, 1974).

In spite of having been intensively searched for and collected when they first arrived in this country by collectors and dealers alike, species like the Golden Plusia and the Varied Coronet, together with many others, are today common moths. It is, of course, occasionally difficult to decide whether a newly recorded species has been overlooked in the past and suddenly become more common, or has recently arrived. In most cases, however, the latter explanation is obvious and I think there is little doubt that by and large, our gains here more than replaced our losses. Let us not forget that. We moan our losses; we rarely praise our gains.

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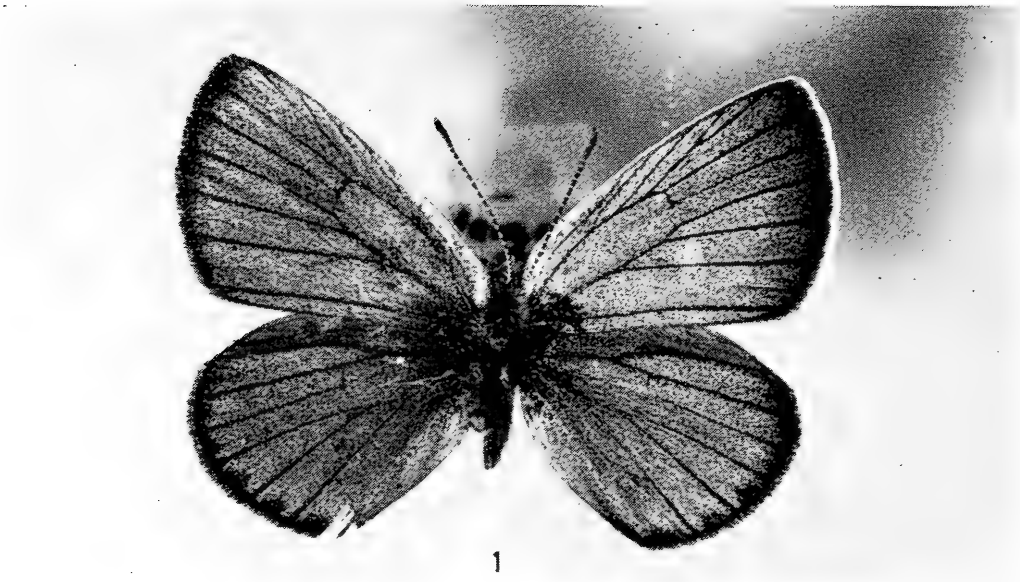
In addition to the above references, a great deal of information was gleaned from various volumes of the following periodicals, particularly the Advertisement and Exchange sections which are usually to be found on the covers of the monthly parts in which they were mostly issued: — *Entomological News,* 1890-1915. *Journal of Economic Entomology,* 1908-1975. *The Entomologist,* 1862-1972. *The Entomologist's Monthly Magazine,* 1864-1975. *The Entomologist's Record and Journal of Variation,* 1891-1975. *The Entomologist's Weekly Intelligencer,* 1856-1861.

AGRIUS CONVOLVULI (L.) AND EUMICHTIS LICHENEA (HBN.) IN EASTBOURNE IN 1976. — I am aware of three records for Eastbourne of the Convolvulus Hawk (*A. convolvuli*) this year. The first is of a male taken on the 23rd August in an actinic 5 trap at Friston Forest (per Mr. M. Parsons). A second was collected at rest on the 1st of September at Ratton Wood (per Mr. M. Parsons). The final and third record for this species this year is of a specimen collected in the Beachy Head area, where it was attracted to light (per Dr. I. A. Watkinson).

One of Eastbourne's most local moths, the Feathered Ranunculus (*E. licheneai*, became exceedingly common this year with a total of approximately 54 specimens recorded: Rodmill Estate, 21.ix.76 (3), 25.ix.76 (4); Beachy Head, 25.ix.76 (5); King's Avenue, 19.ix.76 (4), 20.ix.76 (4), 21.ix.76 (7); 22.ix.76 (7), 26.ix.76 (2), 29.ix.76 (12), 2.x.76 (5) and 4.x.76 (1). — M. HADLEY, 7 Beverington Close, Eastbourne, Sussex.

Plate VI



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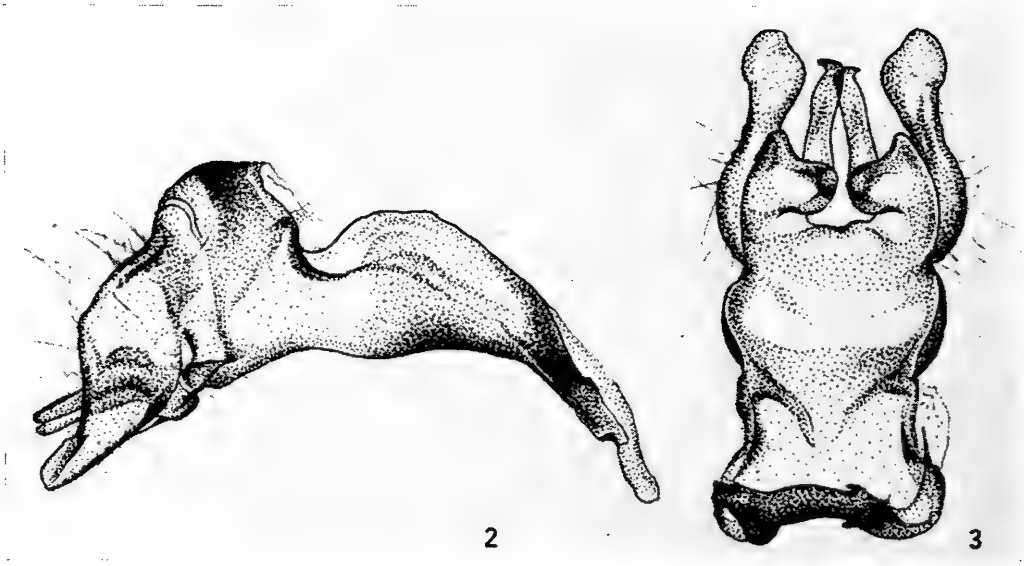

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Fig 1. *Cyaniris semiargus* Rott. with aberrant genitalia. Upperside. Roughly x $2\frac{1}{2}$.

Fig. 2. Aberrant genitalic apparatus of *C. semiargus* Rott. Side view.

Fig. 3. Aberrant genitalic apparatus of *C. semiargus* Rott. Ventral view.

A Sexually Aberrant *Cyaniris semiargus* Rott. from Greece

By John G. Coutsis, M.Arch.*

On 25th and 26th July, 1975 a series of *C. semiargus* Rott. was obtained at 1,600-1,700 m. on Mt. Pangeon, which is situated immediately west from the coastal town of Kavala, in eastern Greek Macedonia.

Amongst the males subsequently dissected, one superficially normal male was found to possess an abnormal sexual apparatus in which a number of appendages were absent, while others were considerably malformed. The labides and falces, though present, differed both in size and shape from those of normal individuals. The vinculum halves were fused distally, while the aedaeagus, the valvae and the furca were absent.

During the preparation of the genitalia under consideration no due care was taken in trying to salvage possible remnants of female sexual organ parts and thus it cannot be said whether the specimen in question is a gynandromorph, or a male with a sexual apparatus that never quite reached full development.

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An Unusual Brood of Polygonia c-album (L.) f. hutchinsoni Robson. — On 30th June, 1976, while visiting Ot Moor in Oxfordshire, a female *Polygonia c-album* f. *hutchinsoni* was captured, which subsequently laid 71 ova, of which about 80% were fertile. The larvae fed up very quickly, the first pupating within 13 days, the rest doing so within three weeks. From 45 healthy pupae, the first 39 specimens to emerge were all of the form *hutchinsoni,* the remaining six being normal. Daytime temperatures were uniformly high during the larval period, often with maxima above 30°C. I would be most interested to hear from anyone else who might have had similar experiences with this species during the past remarkable summer, as I am sure that mine is not an isolated case. — P. L. Broom, B.A., M.Mus., 6 Paddocks Road, Rushden, Northants., NN10 9RY.

Plusia gamma L. and Nomophila noctuella D. & S. in S. Devon in 1976. — *P. gamma* totals were: 1st-31st May (m.v. trap in use 30 nights), 8; June (28 nights), 47; July (29 nights), 164, with 34 on 27th and 24 on 28th; August (31 nights), 148; September (21 nights), 42. Total, for 1st May to 22nd September, 409. *N. noctuella* totals were: May, nil; June, nil; July, 5; August, 10; September, 3. Total 18. — H. L. O'Heffernan, 3 Coombe Meadows, Chillington, Kingsbridge, S Devon.

The Macrolepidoptera of Eastbourne (Excluding Butterflies)

By MARK HADLEY*

Eastbourne and its environs has attracted a great deal of attention from collectors in the past, and comprehensive accounts have been published, e.g. Adkin (1930), but in the intervening decades little, if any, attention has been paid to this area of outstanding entomological interest. Adkin's work was fairly comprehensive in that nearly 480 species have been known to occur in this region. Before this, the first well-documented literature cited by the late Robert Adkin was a list by Jenner (1885).

Since Adkin's list was published, only a single article has appeared in the *Transactions of the Eastbourne Natural History and Archaeological Society,* namely by Salvage (1953). The latter, who is still resident in the area, was able to furnish the writer with useful information.

As far as present-day investigation is concerned, the area has been worked mainly by Dr. Ian Watkinson who has provided the Society with many records. The present writer, resident in Eastbourne, has currently been engaged on compiling a list of the Macrolepidoptera for the Society. The purpose of this paper is to provide a condensed and selected version of some of the more interesting species observed over four years.

The extent of the survey is limited to an area of a radius of seven miles from the Town Hall; this embraces as wide and varied environments for Lepidoptera as is conceivable, from the shingle expanses of the Crumbles to the waterlogged Pevensey Levels. A major forest is encompassed, namely Friston, a dense coniferous area with beech and sycamore plantations. The survey area also includes species from the Chalk Downs, and the deciduous woodland of Milton Hide and Abbot's Wood. A comparison between the distribution of species which the writer has found, and the species which Adkin has listed can give a useful indication of the trend in moth populations. It must be understood, however, that although Adkin's list contains 480 species his information was drawn from many sources, from old county histories and literature concerned with the area. Adkin had compiled all the information together in three volumes, whilst the present writer has only recorded over the past few years species which he has himself captured or seen.

Of the 214 species which the writer has recorded, 11 go completely unmentioned in Adkin's list. *Lygephila pastinum* Treits., later noted in *Transactions of the Society,* three specimens taken in July 1976. *Heliophobus albicolon* Hbn., a single specimen caught. *Eupithecia succenturiata* L., *Euphyia luctuata* D. & S., *Ectropis crepuscularia* Hbn., *Sterrha vulpinaria* H.-S., *Euxoa cursoria* Hufn., *Drepana cultraria* Fabr., *Caradrina ambigua* Fabr., *Cosymbia linearia* Hbn., and

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Spaelotis ravida Hbn. Several specimens have been collected of the last nine species.

Of the remaining 203 species, 18 have increased their populations, 64 species have decreased and the remainder have remained at their earlier level. This is significant information; from the species that have been recorded recently, approximately one-third are decreasing, the rest are either increasing or remaining stationary.

The criteria upon which the moth populations were assessed: Rare. The species is only known to have occurred once or twice. Uncommon. The species is known from several specimens. Common. The species is taken regularly, every year. Abundant. Found in great profusion, every year.

A short discourse on several species which have notably increased or decreased since Adkin's time is of interest, as these changes have in some instances been dramatic. For example, a moth which has increased is *Agrotis puta* Hbn. Adkin writes: "Generally distributed throughout the district but apparently not very common . . . " This is misleading in our present context as in July of most years the light traps are full of this species. Perhaps a satisfactory explanation is that the majority of recording is performed with the aid of light traps, which were only being experimented with in Adkin's day.

Euxoa nigricans was occurring sparingly on the Downs in Adkin's time, it is now commonly taken in suburban gardens and upon the Downs. Another moth which has attracted a lot of attention in the past is *Apamea ypsillon* Borkh.; the Crumbles have a fine white form of this species quite peculiar to this type of habitat. This was so in Adkin's time and, although the population is still strong in this one restricted locality, we are likely to lose it if present plans for the "development" of this area are carried out. A moth we are likely to see more of in this area is *Nola albula* Hbn. which was formerly confined to a small colony in Abbots Wood but has been recorded elsewhere in the district, although nowhere commonly.

Lygris prunata L., is quite common in June/July throughout the area but favours established gardens as it did in Adkin's survey, and in 1905 (*Victoria County History*). It occurs sparingly upon the Downs and at Beachy Head. Another species which has increased is *Discestra trifolii* Hufn. It occurs throughout the area in two broods, a first flight in early June till early July and a second flight at the beginning of August. *Ematurga atomaria* L. was a great rarity but is now quite common at a restricted marshy area in Milton Hide.

D. cultraria has turned up again in the area after a long absence. A single specimen was taken at Ratton Wood and a second at Friston. *Lithosia complana* Linn., is quite a common moth and is attracted in good numbers to light at Beachy Head and Ratton Wood. This species had previously been regarded as somewhat of a rarity.

Unfortunately many species have declined in the inter-

vening decades. *Polychrisia moneta* Fabr., was common many years ago. Adkin wrote of this species as "fairly frequent in gardens throughout the district from June to September". Only two specimens have been found over the last three years, although both these were in gardens. The history of the occurrence of this species in the British Isles only dates back to 1890, see South (1961). *Catocala nupta* L. was once "abundant" at Eastbourne; Jenner said of this species: "Generally distributed and rather common." Adkin echoed this view and gave, in addition, Abbot's Wood and Pevensey as suitable localities. It has been rather uncommon in recent years with isolated individuals occurring sparingly.

Eastbourne, due to its maritime location, has furnished good records of immigrant Sphingids: migrants *Herse convolvuli* L. and *Acherontia atropos* L. are frequently associated with the area. Of the area's resident Hawkmoths, *Deilephila elpenor* L. and *D. porcellus* L. are common, and the former is widespeard in woods and gardens alike. The later prefers the Downs but frequents lights in the town. *Mimas tiliae* L., *Laothoe populi* L. and *Sphinx ligustri* L., are common but widely distributed.

In 1907, 1916 and 1917 large areas of Eastbourne were defoliated by the gregarious larvae of *Euproctis chrysorrhoea* Hbn. This moth is found in abundance at Beachy Head annually where the larvae can browse on the large patches of blackthorn. However, in recent years this species appears to be moving inland and the silken tents of the larvae have been found on elm and hawthorn at Belle Tout, sallow on the Crumbles, and on hawthorn at Newhaven. The nests were absent from the Beachy Head locality for the first time in 1975, but isolated adults have been trapped in that area. *E. similis* Fuessly has declined appreciably since Adkin wrote of it, with only a few instances of the larvae being found of late.

On reflection, the mothing scene at Eastbourne appears hopeful, providing that industrial development does not result in the wholesale elimination of the levels by drainage, nor the encroachment of housing on the Downs.

Acknowledgements

I am indebted to Mr. Brian Whitby, President of the Eastbourne Natural History and Archaeological Society, who made available to the writer the Society's Library and Transactions.

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Migrant Lepidoptera in Cornwall in August 1976

By Brian Elliott*

The family holiday this year was taken on the Lizard Peninsula at Housel Bay, from 19th to 27th August.

A stop at Liskeard on the way there to visit friends revealed the presence of enormous numbers of butterflies, mostly *Vanessa atalanta* L. and *Cynthia cardui* L. One *Macroglossum stellatarum* L. was also seen patrolling along the edge of a wall, flying backwards and forwards, and occasionally settling.

We arrived at Housel Bay on 19th August in the late afternoon and a walk round at dusk revealed little of interest.

A quiet day was spent on the 20th, but at 11 p.m. that night, when driving out of Helston, I saw a large hawkmoth spinning in the road, having presumably been knocked down by the car in front of me. I braked as I went over it and grabbing a torch, ran back up the road, but it had disappeared. From my glimpse of it I came to the conclusion that it was probably *Herse convolvuli* L., though I could not be certain, but I was soon to receive dramatic confirmation of its probable identity.

An easterly wind slowly moderated during the 21st and 22nd, but there were few moths in the static trap and little of interest in the way of migrants except for small numbers of *Udea ferrugalis* Hübn. and *Nomophila noctuella* Denis and Schiff.

By this time, Mr. Barry Goater and his family had turned up at Coverack for their holiday, and on the 22nd Barry found a specimen of *Heterographis oblitella* Zell., when we were exploring together on the coast at Hayle.

On the 23rd, the wind had changed to southerly, bringing a mist in off the sea. Late that night a visit to the static trap at Housel Bay revealed a female *Herse convolvuli* L. and a male *Mythimna vitellina* Hübn., both in fresh condition.

Next morning, the 24th, there was a further *H. convolvuli* in the trap, this time, a male.

The mist came in off the sea all day and it became very humid. As darkness fell, Timothy, my son and I accompanied Mr. Barry Goater to Kynance Cove to run a portable m.v. Immediately after setting up, moths began pouring in. The vast majority were *Agrotis ipsilon* Hufn. which flew to the light in enormous numbers, seriously disturbing other lepidopterous visitors and making observation difficult. In rather smaller numbers were *Autographa gamma* L., many of which were of the small *f. gammina* Stdr. The latter's presence was unfortunate, since at one stage I thought I saw a *Trichoplusia ni* Hübn., but Barry was unable to confirm it. In the midst of this mêlée, *vitellina* appeared at a steady rate, flying up the cliff through the mist and we estimated that we had seen a hundred by 1 a.m. At intervals a *convolvuli* would land on

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the sheet until we had seen six. We also had a surprise when two *stellatarum* arrived. We were not previously aware that it flew at night. One moth we expected to see more of was *Mythimna unipuncta* Haw., but only three came in.

A return to Housel Bay in the middle of all this was most fortunate, since Barry secured a gravid female *Mythimna albipuncta* Denis and Schiff. It was flying to a lighted window.

After packing up at Kynance, we returned to Housel Bay to have a look at the static trap. In and around the trap were a further six *convolvuli* and about 30 *vitellina.* In addition to what we had seen at Kynance was one *Hyles gallii* Rott., one *Uresiphita limbalis,* one male *Heliothis peltigera* Denis and Schiff. One *Mythimna loreyi* Dup. was twice seen round the trap; each time it was disturbed before it could be boxed and it finally eluded capture. At this stage, Barry left for Coverack and after a short rest, I returned to the trap to see if I could find the *loreyi.* By now there were a further 10 *convolvuli.* In addition, as dawn came I found a *Palpita unionalis* Hübn. in the bottom of the trap and one *Euplagia quadripunctaria* Poda on the grass outside it. It was a male in reasonably good condition, until I accidentally trod on it in the night when walking round the trap.

I took the *convolvuli* down to the cliffs to release them and when I threw them up in the air so as to disperse them, they all flew off strongly in a westerly direction though it was perfectly still. Of the *loreyi,* I saw nothing.

As the evening came, Barry and I were in a state of high expectation as we selected a spot to the west of Lizard Point for m.v. and sugar. Unfortunately as it became dark a northerly wind developed. We saw the same species as at Kynance the night before flying downwind. Later, at the Housel Bay trap, *vitellina* was present in smaller numbers and only two *convolvuli.* Next morning the count of *convolvuli* increased to four, but there was a fresh male *Hyles livornica* Esp. present. (Barry took one at Coverack on the night of the 24th.)

On the night of the 26th, my last night, the Housel Bay trap contained even smaller numbers and it seemed that the migration was over. The *convolvuli* count had declined to two, but I was pleased to see a male *albipuncta* in the trap.

Discussion

My total sighting of *convolvuli* was 30. Their relatively sudden appearance in numbers from dusk onwards on the night of the 24th—which was a perfect emergence night—along with the *vitellina,* all of which I saw in fresh condition to the end of my stay, strongly suggests a local emergence. Coinciding with this was an immigration of other species followed by a further movement explaining the fall off in captures of the *convolvuli* and *vitellina.*

I thought the most intriguing of these immigrants to be the *quadripunctaria.* It could have flown into the area during the period of east winds from Devon some days previously.

Though in a locality where it occurs regularly every year (in Devon), I could only find one very worn female on the 19th August. Or, there is raised the possibility of its flapping across the Channel on the southerly air drift of the 24th. One is, of course, assuming a second generation on the Continent in this fine summer. This could well explain the two *stellatarum* dropping on to the sheet that night; they arrived in the dark, so to speak.

I cannot end this article without saying thank you to my wife and sons for allowing me to grossly neglect the principles of the "family holiday", albeit for exceptional circumstances.

ACHERONTIA ATROPOS L., MACROGLOSSUM STELLATARUM (L.) AND EUCOSMA PUPILLANA (CLERCK) IN STAFFORDSHIRE. — In September 1976, two larvae of the Death's Head Hawk (*A. atropos*) were found on separate occasions in a potato field at Hopton, near Stafford; later, a pupa was dug up in an adjoining garden.

I have received many reports of Humming-bird Hawks (*M. stellatarum*) seen in gardens in Staffordshire in 1976, one or two in June, but the great majority in September. One was on honeysuckle in my own garden on 18th September. The number of sightings, spread right across the county, indicates the largest immigration of this species we have experienced since 1947. Several observers have commented that the moths were seen hovering over plants which were not in flower, searching presumably for sources of nectar which in that period of drought must have been in very short supply.

Eucosma pupillana was recorded for the first time in Staffordshire as recently as 1973 when I disturbed one from the foodplant (Wormwood, *Artemisia absinthium*) on waste ground near Burton-on-Trent. The plant has within the last ten years or so become much more widespread in Staffordshire, appearing on waste ground and cleared sites in industrial areas in the north of the county. In one such place, near Biddulph, on 14th July, 1976, I found the moth commonly, two or more dropping out of each plant I touched. The site was near to a disused railway line and this was no doubt the route by which first the plant and then the insect had spread; even so, the comparatively short time it has taken the moth to spread from one end of the county to the other seems remarkable. — R. G. WARREN, Wood Ridings, 32 Whitmore Road, Trentham, Stoke-on-Trent, ST4 8AP.

LAOTHOE POPULI L. IN S. DEVON IN 1976. — Mint specimen in m.v. trap on 19th August, and one month later than any previous year. Earliest capture was on 21st May, 1976, which is normal. Was the August specimen from a second brood? — H. L. O'HEFFERNAN, 3 Coombe Meadows, Chillington, Kingsbridge, S. Devon.

A Possible Natural Hybrid *Nudaurelia zambesina* Wlk. x *N. said* Ob.

By D. G. SEVASTOPULO*

It would seem probable that I have recently bred a small brood of a natural hybrid *Nudaurelia zambesina* Wlk. x *N. said* Ob.

Towards the end of March 1976, what appeared to be a very weathered female *N. zambesina* was found resting beside a small batch of eggs on the wall against which my m.v. lamp is placed. The moth was similar in general appearance to *zambesina,* but the normal green-silver ground colour had been degraded to brownish and the moth lacked the normal dark crimson basal markings on the forewing below and the hindwing above.

When the eggs hatched a little later, it became obvious that the moth was not *zambesina,* as the newly hatched larvae had a brownish yellow body with small black vurrucae marking the positions of the spines of later instars, whilst the newly hatched larva of *zambesina* has the ground colour black. The larvae were given a choice of foodplants and selected *Heeria mucronata* Bernh. (Anacardiaceae).

Reference to Seitz suggested that the moth was, in fact, *Nudaurelia said* Ob. This is obviously a rare species as I have never met it before in some 20 years of working an m.v. lamp on the Kenya Coast, and Dr. Pinhey, then at the Coryndon, now the National Museum, wrote in his paper "The Emperor Moths of Eastern Africa" (1956, *J.E. Afr. N.H. Soc.*) that he had never seen it. Dr. R. H. Carcasson, who visited me at the end of May, agreed with the identification and added that he too had never seen the species before, although he was well acquainted with *zambesina.*

Subsequent larval instars resembled *zambesina,* but the larvae had six instars instead of the usual Saturniid five. Casualties were fairly heavy, and I was finally left with four pupae, one larva having been blown.

The resulting moths, all rather small—three males and one female—bore a greater resemblance to *zambesina* than to their female parent, the ground colour of the wings being the green-silver of *zambesina,* but in all four the basal dark crimson markings of the forewing below and the hindwing above were far les extensive than in pure *zambesina.* Unfortunately the female failed to attract a male, either of *said* or *zambesina,* so that a further generation could not be reared.

* C/o Reynolds & Co., P.O. Box 95026, Mombasa, Kenya.

NOLA ALBULA (D. & S.) IN EASTBOURNE. — On the night of 17th July, 1976, two examples of this local species were attracted to light on the coast. I know of no others for this neighbourhood since Adkin (1930, *Moths of Eastbourne,* **1**: 28). — M. HADLEY, 7 Beverington Close, Eastbourne, Sussex, BN21 2SB.

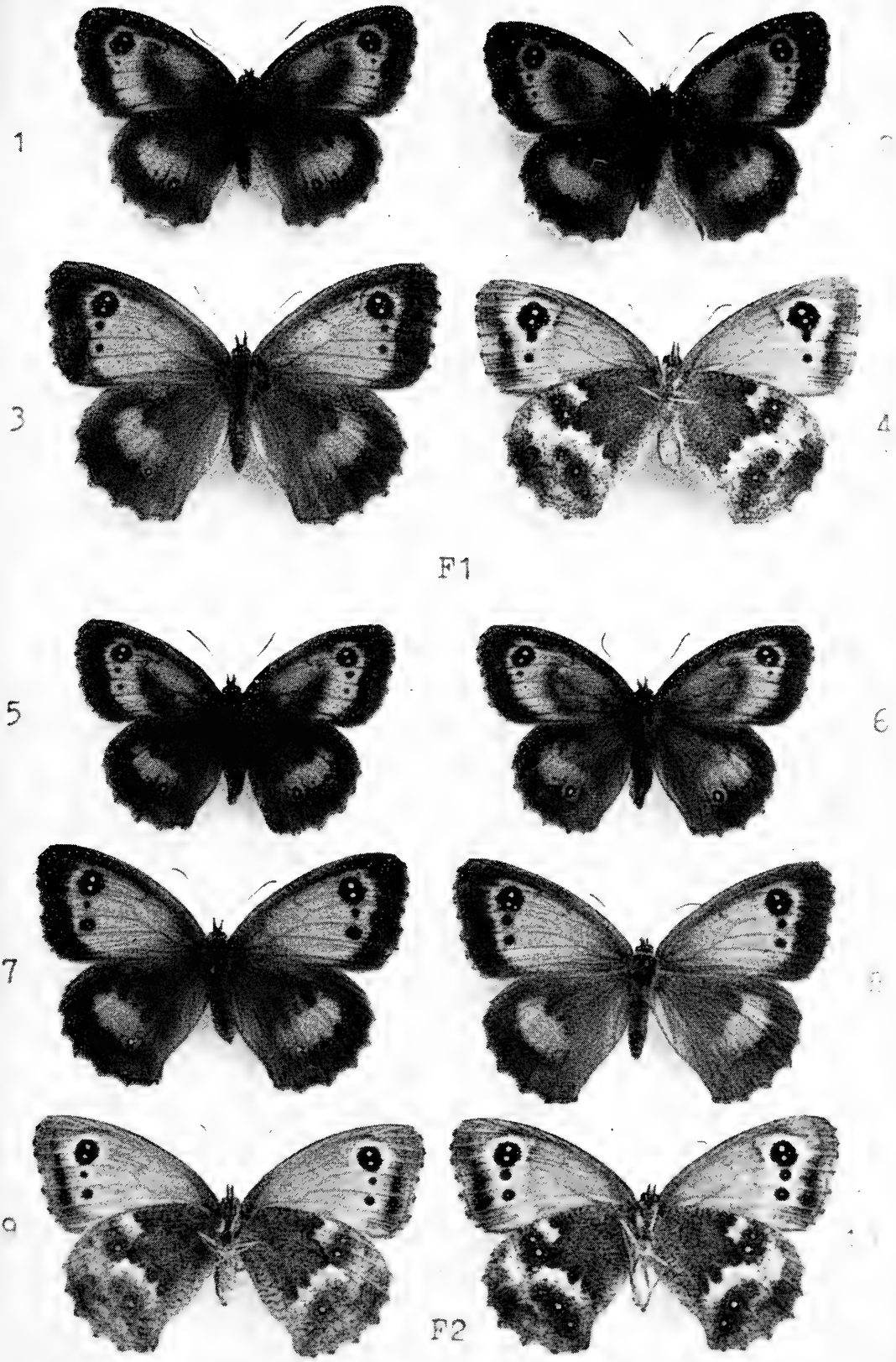

Photo: R. Revels

Pyronia tithonus ab. *excessa* Tutt.

Notes on breeding ab. *excessa* Tutt of the Gatekeeper (*Pyronia tithonus* L.)

By Richard Revels*

The aberration usually known as ab. *excessa* of the Gatekeeper *P. tithonus* Linn., which has extra spots below the apical one on the forewings, and sometimes also on the hindwinds, is not uncommon around the East Midlands area. In some localities about one in every 20 specimens will be of this form. Mostly these extra spots are small and without white pupils and they are usually, but not always, present on both the top and under surfaces of the wings.

Despite this form being fairly common, I do not know of any results having been published of breeding from this type of aberration. So, as I wanted to photograph the life-history of this species, I decided to breed from females of this aberration. In July 1974, I took two females of this form and put them to lay in my breeding cages. The best one died the following day without laying, but the other one lived for about a week and laid just over 50 ova.

Hardly any of the ova were laid on the grass placed in the cage, most were around the top rim of the box or on the netting. They were removed from the box rim by wetting them with a small paint brush and gently easing them off. These ova were then put into small plastic boxes until they began to hatch, whereon they were put on to potted *Poa annua* grass and netted over.

The tub of grass and larvae were kept outdoors in all weather throughout the mild winter of 1974/75. I had to change the grass during October due to a heavy infestation of aphis which killed off the original crop. 42 small larvae were found and transferred to the new crop.

One night after dark during a mild spell in January, a number was seen feeding. In mid-March I found 38 healthy larvae which were from 5-10 mm. long. It seemed that the larger ones had moulted during the winter.

The larvae fed up slowly during the cold wet spring of 1975 and became full grown, and pupated in the latter part of June. The pupae were mostly found attached to the dead and dried grass leaves, low down and well hidden. The butterflies started emerging on 8th July, and continued until the end of the month. In all, 31 hatched, giving an F1 generation of 17 males and 14 females. To my surprise I found abs. hatching among them; in all, I had 16 typical and 15 abs. These abs. ranged from those with just small spots in the males (Figs. 1, 2), to those with larger ones on some of the females (Figs. 3, 4); none of these extra spots had white pupils, and the undersides of several were typical. This F1 sample is about the same as I would find in a day's collecting in the wild.

I decided that for the next generation I would try to get pairings between two of the abs., and also between two typical ones. These pairings were obtained quite easily, and about 100

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ova were laid from the abs. and about 35 from the typical. Most of the ova were again laid around the top rim of the cage and had to be removed as before.

The larvae were this time fed on a small creeping grass which seemed less attractive to aphis than *Poa annua*; the larvae thrived on it, and it over-winters well.

The larvae were seen feeding after dark on several occasions during the milder weather of December and January. On 1st January, I measured a number of larvae, which were from 4-7 mm. long. The larvae were left outdoors throughout the bitterly cold spell which started at the end of January and went on into February. Soon after, it turned milder, the larvae were again seen feeding, so it seems that they do not hibernate properly but just become dormant during cold periods and recommence feeding when the weather is mild enough. This is contrary to what F. W. Frohawk found, for in his book *The Complete Book of British Butterflies* he states that they enter hibernation during October and remain motionless until spring.

The F2 generation started to hatch towards the end of June, and continued well into July. From the pairing between aberrant parents I had hatched six typical males, seven male abs., seven typical females, 21 female abs. From the pairing between typical F1 parents I had hatched two typical males, seven male abs., three typical females, three female abs.

The abs. ranged much the same as in the F1 generation, but several of the females (Figs. 7-10) were rather better, having white pupils in several cases. The males had disappointingly small spots (Figs. 5, 6).

The fact that a number of typical specimens hatched from a pairing between two aberrations, rules out this as a recessive form, for if so it should have given a pure strain of abs. I think it fairly safe to say, therefore, that from my breeding results ab. *excessa* is multi-factorial, and similar to ab. *arete* Müller of the Ringlet (*Aphantopus hyperantus* L.).

MIGRANT LEPIDOPTERA IN HEREFORDSHIRE IN 1976. — A single male *Nycterosea obstipata* F. appeared at light in Ledbury as early as the night of 22nd/23rd May, 1976, in company with three *Plusia gamma* L. No further migrants were noted until a single *Colias croceus* Fourc. was seen near Woolhope on 28th July, and a further specimen was observed near Leominster on 31st August. *Macroglossum stellatarum* L. was noted by several observers during late August in Herefordshire, while I had a single worn *Herse convolvuli* L. at light on 19th/20th August. As far as I know no *Nymphalis antiopa* L. were seen in this county, but I was pleased to see a worn male *Catocala fraxini* L. at light in my garden on the night of 31st August/1st September, and the only example of the exceptional wave of immigrant lepidoptera from the east to appear here. — Dr. M. W. HARPER, Cherry Orchard, Bullen, Ledbury, Herefordshire.

Photo: R. Revels

Aberrations of *Lysandra coridon* (Poda).

Further Notes on Breeding *Lysandra coridon* (Poda) ab. *fowleri* South

By Richard Revels*

As mentioned in my previous article (*Ent Rec.*, **87**: 281-283), I have been attempting to breed from a Chalk Hill Blue female ab. *semi-syngrapha* (Tutt), paired with a male ab. *ultrafowleri* (B. & L.) in the hope that a combination of both aberrations would appear in some of the F2 generation.

In 1974 I obtained the desired pairing and about 70 ova were laid. I like to split up my ova into two or more lots so as to minimise the risk of loosing them all should an earwig, etc., get among them. I put moss between the leaves of the potted *H. comosa*; this moss is often chosen by the females as a site for their ova, so by removing some of the moss after egg laying a number can be gathered up without damaging the growing plant. About half of the ova were taken and placed in a plastic tea-strainer, which was enclosed in a fine nylon net to keep out the predators; these are then placed in an outdoor cage which keeps most of the rain off, so I have to spray them regularly to prevent them drying up. The others were left on the growing plant which was netted over and left outdoors, only being brought indoors if there is a prolonged period of severe frost which could kill the plant.

In the wet cold spring of 1975, I had a rather poor hatch, but nonetheless managed to rear an F1 generation of six males and two females, all of which were typical. The intense heat of the 1975 summer presented problems, for a few hours in the direct sun would have killed off the butterflies before they could have mated and laid. I overcame this problem by placing my breeding cage under a tree in my garden, which just let through dappled sunlight. I also cooled the cage by sprinkling it with water several times a day when the weather was hot. This way I kept them alive for up to two weeks. Pairings were seen and about 200 ova laid. The ova were split up and over-wintered as before.

By the end of May 1976, some of the larvae were full grown and these changed to pupae in early June. I usually lay moss on the ground under the plant which provides an ideal hiding place for the larva during the daytime as well as a good pupation site. A point of interest is that most books state that the pupa just lies on the ground unprotected by any web, but I have found this not to be the case with mine. One pupa on its own will only have a few threads spun over it, but when a number choose the same site, as often happens in captivity, a fairly strong "roof" is formed under the moss or whatever they choose to pupate under.

The F2 hatch lasted from the end of June until early August and consisted of 35 typical males as follows: 14 *ultrafowleri* males (top row), 26 typical females, 12 *fowleri* females (2nd row), 19 *semi-syngrapha* females (3rd row), and six females (which were both ab. *semi-syngrapha* and ab. *fowleri*) (4th row). A very successful brood of 112 insects.

* Top Field Farm, Dunton Lane, Biggleswade, Beds. SG18 8QU.

These results gave me just over 25% of the *fowleri* forms, which is in accordance with this ab. being inherited as a simple recessive. It is interesting to note that in the wild, *fowleri* females are considerably rarer than *fowleri* males, but my breeding results gave me about equal numbers of each sex in this aberration.

Breeding *L. coridon* ab. *ultrafowlerimargino* (B. & L.)

A friend, Mr. David Tyler, who was collecting with me in Dorset during the end of July 1974, captured a rather worn male *L. coridon* ab. *ultrafowleri* (B. & L.). Being in too poor a condition for the cabinet, he kindly gave it me to see if I could pair it with a female from one of various *coridon* stocks. The female I selected was from the F1 generation of a male *inframarginata* I had captured the previous year. The small F1 brood had not shown any tendency towards *marginata* in the males, so having only a limited supply of foodplant, I did not continue to breed it on to an F2 generation. A pairing between the *fowleri* male and the female was seen, and about 80 ova resulted.

A typical F1 generation of about 20 was successfully bred, and pairings obtained. From these I had about 150 ova before releasing the stock on to a local down. I gave Mr. Tyler some of these ova, but when he moved house he was unable to give them sufficient attention, and so failed to breed them. I was more fortunate and succeeded in rearing an F2 generation of 16 males which were typical (with a few top-side ab. *punctata,* but typical undersides). Eleven male *ultrafowleri,* most of which were *ultrafowlerimargino* (B. & L.) (5th row), seven typical females, eight *fowleri* females (6th row) (these are less extreme than those of the other *fowleri* stock mentioned above, in that the squares on the upperside are only smokey-white, and some were only a little better than ab. *punctata,* but were nonetheless true *fowleri* on the underside). This very interesting brood gave me nearly 50% of *fowleri* forms, and a higher rate than I should have expected.

MIGRANT LEPIDOPTERA IN THE MIDLANDS IN 1976. — Following the remarkably large catches in my m.v. garden trap here at Hilton during July, I was pleased to note a female *Hyles gallii* (Rott.) in very fresh condition just before 23.00 hours on 13th August. I have been collecting at Hilton for five years and this is the first time I have encountered this species. A second interesting insect is a specimen of *Agrius convolvuli* (L.) given to me by Mr. Bryan Thomas of Crewe, and which was captured on the morning of 20th September resting on a milk bottle in the doorway of a house in the Wistaston district of Crewe. Unfortunately the wing tips had been damaged by a local journalist who had stapled it to a card and photographed it for the local newspaper. — A. WM. SPEED, The Dumbles, 14 Filed Close, Hilton, Derby.

Butterflies in the Department of Dordogne, France

By H. J. Belsey*

For the lover of butterflies, this area must be one of the finest in Europe. It is ideal butterfly country, with a great deal of natural forest, mostly oak, and a lot of rough, poor quality land, that is suitable for nothing but occasional grazing. Although most land capable of being farmed is worked to a high standard, few chemicals are used, except nitrate on the grass, and, apart from the vines, very little spraying is done. I have never seen sprays used on fruit trees, the host plants of so many caterpillars. Wild flowers grow here in a profusion unknown in Northern Europe (I have listed 23 species of orchid in my neighbourhood), and the summer is hot and sunny, the fine weather normally lasting from March or April late into November.

It is estimated that there are some 350 species of butterfly in Europe, of which only 68 are now considered as British species. Here, mostly within walking distance of my house, I have so far counted 66 species. I am sure that is by no means a complete list. I do not catch butterflies, but watch them on the wing, or settled on flowers. It is more than 50 years since I first learned to identify British butterflies, and I am not as agile as I was then, and my eyesight is far less good. As a child, it was the first sight of an Orange-tip that aroused my interest, and I still get the same pleasure each year when the first specimens of this attractive species appear. This year they were very early, flying before the end of February, and they have been particularly abundant. The flight season lasted more than three months.

I find the blues the hardest to identify when flying, and I feel that I have probably missed some species, for in this respect my list is a poor one. The Chalk Hill Blue, and the Silver Studded Blue, ought certainly to be found here, but so far they have evaded me. On two occasions I have thought that I had seen a Large Blue or its nearly related species, but on both occasions the insect was disturbed before I could get close enough for positive identification. I have yet to see a Bath White, another butterfly that one might expect to be common here, and I have only seen one or two specimens of the Map butterfly (*Araschnia levana* L.), but perhaps we are near the limit of its range.

Apart from stray Vanessids, which may appear on a sunny day in mid-winter, the butterfly season is a long one, from March until late November. The latest butterfly to fly in any numbers is always the Clouded Yellow. In 1975, the last one I saw was on 23rd November, but in other years I have seen single specimens in December. It seems to be able to survive several degrees of frost at night, provided the day is warm and sunny. Strangely, the Vanessid butterflies seem to hiber-

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nate quite early here, and few are seen after the end of October.

This Spring (1976) has been exceptionally warm, with weeks of sunny weather, and during March alone I saw 13 species. These were: Swallow Tail; Orange Tip; Small Tortoiseshell; Brimstone; Peacock; Large Tortoiseshell; Small White; Comma; Wall; Green-veined White; Red Admiral; Small Copper; Wood White.

I often watch the tops of oak trees, sometimes with field glasses, but I have not yet seen a Purple Emperor, although conditions seem right for its presence. Not only have we extensive oak woods, but the two foodplants, sallow and willow, are common. Once or twice I have seen its near relation, the Lesser Purple Emperor (*A. Ilia*). On the first occasion, I was cleaning the paint of a door set upon trestles outside the house, and using sugar soap. The butterfly settled on the door, and started to feed on the foam. Nor did my presence disturb it, and it remained in the area all day, feeding on any splashes that had fallen on the ground.

The Camberwell Beauty is never common, but a few hibernated specimens appear each Spring, and a few more fresh ones each July. Both Swallowtails (*machaon* and *podalirius*) are common, and can often be seen flying together. This year they have been particularly plentiful. *Podalirius* always seems to be the more numerous. It is a fine sight to see three or four *podalirius* on a plant of valerian, with perhaps a couple of *machaon* and several Small Tortoiseshells.

It is well known that the numbers of butterfles fluctuate widely from year to year, although it is difficult to find any satisfactory explanation. Last year (1975) ought to have been a good year, as it was hot and sunny, but on the whole the autumn-flying species were scarce. There were hardly any Small Tortoiseshells, Peacocks or Red Admirals. The Swallowtails disappeared early in the season. This year they are all abundant again. It is common to see a dozen Small Tortoiseshells at once, but the most plentiful butterfly of all must be the Marbled White, which can be seen in hundreds along the roadside verges.

The Black-veined White fluctuates greatly in numbers. It was plentiful here in 1971 and 1972, but I saw none in 1973. It is considered that this butterfly is in danger of extinction in Europe, but conditions here ought to be favourable. There are thousands of more or less abandoned fruit trees, and the hawthorn is fairly common. It is unlikely to be affected here by the poisoning of its foodplants. (Note: since this was written, it has again been plentiful in June 1976. It seems to have a very short flight season, which perhaps provides a clue to the fluctuations.)

Another splendid butterfly of this region is the Dryad (*M. dryas*). For those unfamiliar with it, it can best be described as resembling a very large, bright, and dark-coloured Meadow Brown, with magnificent blue-pupilled eyes on the forewings. The Spanish name is "Blue-eyes", but here it has

no local names like most butterflies. The French seem to have been very unimaginative in finding popular names for common butterflies and wild flowers. It is a slow and heavy flyer, and very easy to observe.

Why do some butterflies go to so much trouble in selecting a leaf when laying eggs? For several days I have watched the female of *podalirius* laying eggs on a peach tree in our garden. She approaches the tree, flutters round it, and then goes away, to return in a few moments. This process is often repeated several times. Then begins a very tentative approach to the leaves, with much hovering and fluttering over various twigs, after which the butterfly usually goes away again. Then it returns once more, and may settle on one or two leaves, but without laying any eggs. Away it goes again, and possibly examines other plants not used as foodplants, such as honeysuckle. Finally, the butterfly makes another return, and after apparently examining many leaves, lays perhaps one egg. The whole process is usually repeated before another egg is laid. I have watched Wood Whites behaving in a very similar manner. On the other hand, Large and Small Whites usually lay eggs rapidly and systematically, moving along a row from plant to plant in the vegetable garden.

It is an established fact that many butterflies are particularly attracted to blue flowers. Frequently, when I have been wearing a blue shirt, Small Tortoiseshells, Peacocks and Red Admirals have alighted on it, and other species have made an investigation. Yesterday a Comma settled on my blue shorts, and was most reluctant to go away. A few days ago I saw a Peacock performing what appeared to be an extraordinary dance with two bright blue demoiselle flies. It was only after careful observation, with the butterfly apparently trying to capture the demoiselles, that I came to the conclusion that it was really trying to alight on them. Had it mistaken them for blue flowers, chicory for example, which is very common here, and waves in the wind in a dancing motion?

Another puzzle is why some butterflies appear to be so aggressive. From my observations, the Small Copper is the most pugnacious, with the Common Blue as runner-up. Often I have followed one of the larger fritillaries for several minutes, until it has finally come to rest on a flower. Just as I have got close enough to attempt to identify the species, it has been chased away by a Small Copper. Common Blues seem to reserve their attacks for various species of Satyridae.

What is the explanation? It can hardly be a matter of mistaken identity, such as one commonly sees when a male Small White pursues a female Orange Tip or Green-veined, or even at times a Marbled White. Another thing that puzzles me is the behaviour of the Large Tortoiseshell. Every day one or more enters the house. I am of course familiar with Vanessid butterflies entering the house to seek hibernation sites in the autumn. But the Large Tortoiseshells are at the very beginning of their flight season (end of June). They seem determined to stay indoors, and after being gently expelled,

come in again as soon as possible. Are they seeking shade? For nearly two weeks the afternoon temperature has been in the 90° F. Why seek shade in the house, when we are surrounded by forest which is much cooler?

Watching butterflies has given me great pleasure. Every year I have found new species, and there are probably more to find. Not only do we enjoy here the wide range of species, but, at least with the commoner kinds, they fly in vast numbers. And, so far as can be seen, nothing threatens them at present.

Here is the list of species. In the case of butterflies not occurring in the British Isles, the English names used are those to be found in *Butterflies of Britain and Europe,* by L. G. Higgins and N. D. Riley.

PAPILIONIDAE: *Papilio machaon* L. (Swallowtail); *Iphiclides podalirius* L. (Scarce Swallowtail).

PIERIDAE: *Pieris brassicae* L. (Large White); *P. rapae* L. (Small White); *P. napi* L. (Green-veined White); *Aporia crataegi* L. (Black-veined White); *Anthocharis cardamines* L. (Orange Tip); *Colias crocea* Fourcroy (Clouded Yellow); *C. hyale* L. (Pale Clouded Yellow); *Gonepteryx rhamni* L. (Brimstone); *G. cleopatra* L. (Cleopatra); *Leptidea sinapis* L. (Wood White).

NYMPHALIDAE: *Apatura ilia* D. & S. (Lesser Purple Emperor); *Limenitis reducta* Stgr. (Southern White Admiral); *L. camilla* L. (White Admiral); *Nymphalis antiopa* L. (Camberwell Beauty); *N. polychloros* L. (Large Tortoiseshell); *Inachis io* L. (Peacock); *Vanessa atalanta* (Red Admiral); *V. cardui* L. (Painted Lady); *Aglais urticae* L. (Small Tortoiseshell); *Polygonia c-album* L. (Comma); *Araschnia levana* L. (Map); *Argynnis paphia* L. (Silverwashed Fritillary); *Mesoacidalia aglaja* L. (Dark Green Fritillary); *Fabriciana adippe* D. & S. (High Brown Fritillary); *Clossiana selene* D. & S. (Small Pearl-bordered Fritillary); *C. euphrosyne* L. (Pearl-bordered Fritillary); *C. dia* L. (Violet Fritillary); *Melitaea cinxia* L. (Glanville Fritillary); *M. didyma* Esp. (Spotted Fritillary); *M. phoebe* D. & S. (Knapweed Fritillary); *Euphydryas aurinia* Rott. (Marsh Fritillary); *Mellicta athalia* Rott. (Heath Fritillary).

SATYRIDAE: *Melanargia galathea* L. (Marbled White); *M. occitanica* Esp. (Western Marbled White); *Hipparchia semele* L. (Grayling); *H. statilinus* Hufn. (Tree Grayling); *Minois dryas* Scop. (Dryad); *Brintesia circe* F. (Great Banded Grayling); *Aphantopus hyperantus* L. (Ringlet); *Maniola jurtina* L. (Meadow Brown); *Pyronia tithonus* L. (Gatekeeper); *Coenonympha pamphilus* L. (Small Heath); *Pararge aegeria* L. (Speckled Wood); *Lasiommata megera* L. (Wall); *L. maera* L. (Large Wall).

LYCAENIDAE: *Thecla betulae* L. (Brown Hairstreak); *Quercusia quercus* L. (Purple Hairstreak); *Nordmannia ilicis* Esp. (Ilex Hairstreak); *Strymonidia pruni* L. (Black Hairstreak); *Callophrys rubi* L. (Green Hairstreak); *Lycaena phlaeas* L. (Smaller Copper); *Everes argiades* Pallas (Short-tailed Blue); *Cupido minimus* Fuessl. (Small Blue); *Celastrina*

argiolus L. (Holly Blue); *Aricia agestis* D. & S. (Brown Argus); *Polyommatus icarus* Rott. (Common Blue).

HESPERIDAE: *Pyrgus malvae* L. (Grizzled Skipper); *P. alveus* Hbn. (Large Grizzled Skipper); *P. serratulae* Rambur (Olive Skipper); *Erynnis tages* L. (Dingy Skipper); *Carterocephalus palaemon* Pallas (Chequered Skipper); *Thymelicus sylvestris* Poda (Small Skipper); *Ochlodes venatus* B. & G. (Large Skipper); *Hesperia comma* L. (Silver-spotted Skipper).

Current Literature

Birdwing Butterflies of the World by **Bernard D'Abrera.** (First published in Australia 1975.) This new edition is published by the Hamlyn Publishing Group Ltd. for Country Life Books. Folio. 260 pp., includes 300 coloured plates and one distribution map. U.K. price £35.

This beautifully produced monograph by the author of the standard works on the Australian Lepidoptera, covers the Troides, Ornithoptera and Trogonoptera. Both surfaces of both sexes of 30 species and 120 sub-species and their variations are illustrated natural size, and described, and many of the early stages are also shown in the superb colour photographs, mainly taken by the author. Great care has been taken to reproduce faithfully the subtle variations of metallic greens and blues found in this group. There are a number of plates showing habitats.

The ruthless exploitation of the group by professional dealers and collectors is discussed and an account given of the attempts to conserve the most threatened species.

The group ranges from N. India, through the islands of the S.W. Pacific to Australia, and, by bringing all this material together, the author makes it possible to follow many of the intricacies of species groups, island species and sub-species. The taxonomy of the group is reviewed. The author's reasons for largely following Zeuner are explained, together with his rejection of the genus *Schoenbergia.* Early stages are described when known, and the specific *Aristolochia* foodplants named. There is a critical appreciation of Mould's paper on the Cape York population (*Aust. Ent. Mag.*, **2** (2) 1974).

The work is well bound and tastefully boxed. Although very much a specialist book, it will also appeal to the bibliophile. — E.H.W.

The World you Never See: Insect Life by **Theodore Rowland-Entwistle.** Hamlyn Group. 128 pp., 278 colour plates. £2.95.

An excellent general account of insects, their variety and ecology, built round the astonishing photographs by the Oxford Scientific Film Group who need no introduction to people who actually watch television. The skill and patience needed to capture some of the shots is beyond praise. Excellent value at all levels. — E.H.W.

The World of a Stream by **Heather Angel, M.Sc.** Faber & Faber. 128 pp. Illustrated with 55 black and white photographs by the author and line drawings by **Christine Darter**. £2.95.

A survey throughout the year of a Hampshire stream and its inhabitants. The author is a well-known nature photographer. While praising the shots, the quality of their reproduction leaves something to be desired. — E.H.W.

Moths of Southern Africa by **E. C. G. Pinhey.** An error and an omission in my review of this book (*Ent. Rec.*, **88**: 263) have been pointed out to me and I hasten to put matters right. (a) the price is £20, not £30, and (b) while the publishers are as stated, the sole agents in the United Kingdom are Messrs. E. W. Classey Ltd., Park Road, Faringdon, Oxon. SN7 7DR. — S.N.A.J.

Notes and Observations

A Record of Oecetis notata (Rambur) (Trichoptera: Leptoceridae) from South-west Wales. — On 27th May, 1976, pupae and final instar larvae of *Oecetis notata* (Rambur) were found abundantly in the River Teifi near Llanybyther, Carmarthenshire (N.G.R. SN(22) 524 454). This very local species has not previously been recorded from South-west Wales, and larvae of *O. notata* are only known elsewhere in Great Britain from the River Wye at Symond's Yat and Ross-on-Wye, where they are also abundant (Dr. I. D. Wallace, *pers. comm.*).

Both larvae and pupae were found at the bases of moss growths on medium and large rocks in moderately flowing water, and it is of interest to note that larvae of another very local leptocerid species, *Triaenodes simulans* Tjeder, have previously been recorded from the same River Teifi locality by Jenkins and Mold (1977, *Entomologist's Gaz.*, **28** (in press)). Final instar larvae of *O. notata* were kindly identified by Dr. I. D. Wallace, and adults were reared from both larval and pupal material. Adult males were identified using Macan (1973, *Scient. Publs. Freshwat. biol. Ass.*, **28**) and the identification of both males and females was confirmed by Mr. P. C. Barnard of the British Museum (Nat. Hist.).

Adult distribution records indicate that *O. notata* is a local species, and, with the exception of the River Wharfe at Tadcaster, Yorkshire (Binnie, 1880, *Entomologist's mon. Mag.*, **17**: 91), records are confined to the south. These include the River Thames and the River Wey in the region of their confluence at Weybridge, (e.g. McLachlan, 1877, *Entomologist's mon. Mag.*, **14**: 18; Kimmins, 1930, *Entomologist*, **63**: 172-174); the River Thames at Goring (Grensted, 1938, *Rep. Ashmol. nat. Hist. Soc.*, 16-18); the River Severn, near Worcester (Fletcher, 1885, *Entomologist's mon. Mag.*, **21**: 267) and the River Wye (Mosely, 1933, *Entomologist*, **66**: 282). *O. notata* adults were also reported from Waterford and Lucan Demesne

in Southern Ireland by King and Halbert (1910, *Proc. R. Irish Acad.*, (B), **28**: 29-112), and adults have recently been recorded from Co. Tipperary (J. P. O'Connor and M. A. Norton, *pers. comm.*). — R. A. Jenkins, Welsh National Water Development Authority, South West Wales River Division, Penyfai House, 19 Penyfai Lane, Llanelli, Dyfed, SA15 4EL.

Migrant Lepidoptera in Hampshire in 1976 and a Note on the Chalk-hill Blue Off the Chalk. — The *Agrius convolvuli* (L.) invasion got here; I had two reports of it, and collected a fine moth from a house near Lymington. I also had two reliable reports of *Macroglossum stellatarum* L., which I have not myself seen for several years, and I was shown a full-fed larva of *Acherontia atropos* (L.) found in a potato field near Sway — I had never seen one before.

Mr. E. C. Collinson of Picket Wood, Hightown, Ringwood, an experienced lepidopterist, told me that he had had *Lysandra coridon* (Poda) on his ground at Hightown in some numbers this year. No chalk within some five miles.— Rear Admiral A. D. Torlesse, C.B., D.S.O., 1 Sway Lodge, Sway, Lymington, Hants., SO4 0EB.

Late Appearance of Pieris rapae L. and Vanessa atalanta L. — Although one had rather got used to the late and continued appearance of fresh butterflies in the early autumn of this remarkable year (1976), I was surprised on 31st October to observe a specimen of *Pieris rapae* (or possibly *P. napi* L.) flying along the hedgerow of a local road across the former saltings here. Whites were plentiful in my garden in early October, but none had been seen for a week or two prior to this. I had no net with me and was unable to identify its sex. Two *Vanessa atalanta* were seen flying at the same time, and another was found dead in the road. — N. A. Watkins, Hazel Mead, Priory Road, Easton-in-Gordano, Nr. Bristol, BS20 0PR, 8.xii.76.

Acleris abietana (Huebner) in Aberdeenshire. — On the 28th September, 1975 a female specimen of *Acleris abietana* (Hübn.) was disturbed from amongst thickly planted trees in a mixed coniferous forest near Aberdeen by P.S. and on 3rd October, 1976 a male was disturbed from a young spruce plantation in North Aberdeenshire by M.R.Y. In both cases, in spite of vigorous searches, no further specimens were found.

Although 1976 has been a good year for migrants, the circumstances seem to suggest that the species breeds in Aberdeenshire and next year we intend to search for the larvae in the hope of confirming this. It seems likely to prove a difficult task and we propose to concentrate on looking for loosely-spun spruce needles in June (as suggested by Mr. E. C. Pelham-Clinton, who also kindly confirmed the identifications) but if any entomologists can recommend a more certain method we would be most grateful. — P. Smith and M. R. Young, Department of Zoology, University of Aberdeen, Aberdeen, AB9 2TN.

MIGRANT LEPIDOPTERA IN LINCOLNSHIRE IN 1976. — At least 28 *Herse convolvuli* L. have been seen or captured this year. The first appeared in my m.v. trap on 28th August. I saw the last here on the 20th September at *Nicotiana* blooms. Four *Hyles gallii* Rott. were taken near Scunthorpe in July.

As elsewhere in the country, *Hemearis stellatarum* L. has been abundant, the first being seen in my garden on 25th June, the last on 23rd September.

On the night of 6th August, a perfect specimen of *Rhyacia simulans* Hufn. appeared in an m.v. trap four miles from my house. This is a new record for the county and well outside its recognised range. I mention it as a possible migrant, for on the following few nights seven *Eurois occulta* L. appeared in the same trap, which also produced on 29th August, and again on 7th September, a specimen of *Catocala fraxini* L. Meanwhile at Gibraltar Point on 30th August, a schoolboy, Martin Townsend, had taken another *C. fraxini.* The same boy took at the same site a specimen of *Ennomos autumnaria* Wernb. I took a second on the same night in Tothill Wood, three miles from here. — R. E. M. PILCHER, M.A., F.R.C.S., The Little Dower House, South Thoresby, Alford, Lincs.

THE CAMBERWELL BEAUTY AND CLIFDEN NONPAREIL IN SOUTH SCOTLAND. — On 18th September, 1976, while having tea with a friend he received a phone call from a lady who had a strange butterfly in her garden. The description given fitted a Camberwell Beauty (*Nymphalis antiopa* L.). The following day my friend and I visited this garden at Newmains, Dryburgh, Berwickshire, and were shown an ash that had had the bark eaten off by a goat, and was oozing sap making a great feast for about 15 or 20 Red Admirals (*Vanessa atalanta* L.). We visited this site off and on for about an hour and eventually the Camberwell Beauty appeared to join the feast. On being disturbed it flitted on to a grassless knoll where it settled long enough for a few film slides to be taken, when it finally moved off. I netted it and now have it in my collection.

I run a light-trap here in my garden, and one can imagine my surprise and delight when I opened the trap on 21st August, 1976 to find a male Clifden Nonpareil (*Catocala fraxini* L.). It had been a mild, damp night and the trap had been working well. — ANDREW BUCKHAM, Forester's Cottage, Wells, Denholm, Roxburghshire.

NYMPHALIS ANTIOPA L. IN NOVEMBER. — A Camberwell Beauty was observed by Mrs. M. Ferguson in her garden at Orpington, Kent, at noon on 10th November, 1976. The morning was dull with some drizzle and she had been cutting back ivy from the garden hedge, when some yards away a Camberwell Beauty was seen almost stationary fluttering near the ivy. She watched it for some five minutes and eventually it rested on some white painted wood until disturbed by a cat. It made off purposefully behind some trees and headed down the nearby railway line in a south-easterly direction. —DAVID C. G. BROWN, 25 Charecote, Nr. Warwick.

TOWNEND GLOVER'S LIBRARY AND MANUSCRIPTS. — In several papers ("Townend Glover, 1813-83, and the first entomological light trap", *The Michigan Entomologist,* **2**, 1969, 55-62, and "The source of Townend Glover's 'American moth trap' ", *The Great Lakes Entomologist,* **7**, 1974, 127-8), I have supplemented the early accounts of the career of Townend Glover, the first official U.S. Government entomologist and a curiously neglected figure. Glover, who was a considerable force in American economic entomology, was author of one of the rarest of entomological publications, *Illustrations of North American Entomology* (Washington, D.C., 1878). Only 12 copies of this large volume of Glover's plates, which identified a vast number of insects of a number of orders, were bound with title-pages and distributed free of charge to various institutions and individuals. Only a small number of the copies remain, although many of the plates survive as part of Glover's earlier surveys of various orders (these were themselves issued in very small editions, and are very rare).

Glover is of interest to British entomologists as he was the inventor of the "American Moth Trap", introduced by Henry G. Knaggs, editor of the *Entomologist's Monthly Magazine.* Despite the fact that the effectiveness of the Glover light trap was discussed warmly in the pages of Edward Newman's periodical *The Entomologist,* the device appears to have been the first portable illuminated trap for the capture of entomological specimens for study, and as explained in the papers cited above, improvements upon Glover's design have been used to the present time. Mr. J. M. Chalmers-Hunt, editor of *The Entomologist's Record,* is the only known owner of an original "American Moth Trap".

Aside from this portentious invention, Glover's long service in combating pest species, his many Governmental entomological reports, his publications for farmers, and his extensive attempts to depict a great number of insects on plates (he portrayed more species than any American illustrator before or long after his time), all combine to make him one of the more significant figures in nineteenth-century American entomology. Had his curious, eccentric personality and the funds at his disposal not prevented his books from being printed in larger quantities, Glover would have been the American Stephens or Curtis.

Glover's extensive entomological library, which is known to have included books ranging in time from Dru Drury's *Illustrations of Natural History* (London, 1770-82) to the works of his contemporaries, was widely dispersed at his death. Books containing his characteristic ink stamps and bookplates are in the Michigan State University Library and my own collection, and undoubtedly a canvass of libraries would reveal a number of other volumes. But, of more importance, the major body of Glover's manuscripts has recently been organised and opend to scholars by the Archives, The Smithsonian Institution, Washington, D.C. Unfortunately, Glover's correspondence has been scattered, but the very rich collection at

the Smithsonian includes 11 manuscript boxes of his notes on various insects and related arthropods, a number of his plates, and relevant printed materials.

The notes are in various stages of completion, and are labelled as "rough notes" and "prepared notes". Glover's habit was to paste strips of paper containing manuscript descriptions of insects and other notes on the pages of unrelated printed volumes, and he usually arranged these according to order. There are also notebooks containing copious notes in his unusual and very miniscule hand. Drawings of insects are present in the notebooks and without, and there are many trial and final states of his illustrations, some of them coloured, as part of the production materials for his publications. Unfortunately, a number of Glover's manuscripts and drawings mentioned in the biographical sketch by his assistant, Charles R. Dodge, *The life and entomological work of the late Townend Glover* (Washington, D.C., 1888), were not added to the collection, which appears to have been conveyed to the Smithsonian by Glover during his lifetime. There is a miscellany of printed materials, including some rare pamphlets which illustrate the vicissitudes of Glover's tenure as U.S. Entomologist.

Although Glover's papers provide much additional insight into his work with insects and further demonstrate the very wide range of his entomological knowledge, while giving us additional clues as to how his publications and illustrations were prepared, they furnish little new biographical information. Valuable as the Smithsonian collection might be, the scholar who attempts the first full-length study of Glover and his work will have to go further afield. — Dr. RONALD S. WILKINSON, The Library of Congress, Washington, D.C. 20540.

AGRIUS CONVOLVULI (L.) AND ENARGIA PALEACEA (ESPER) IN BRECONSHIRE IN 1976. — On emptying the Robinson trap here on the morning of 26th August, I found a very worn specimen of *A. convolvuli*; and on the morning of 27th August here, also in the trap, a good specimen of *E. paleacea*. This appears to be the first record of *paleacea* for Breconshire. — N. PARKER, Pont a Dulas, near Builth Wells.

TRIPHAENA PRONUBA L. OBSERVED DAYTIME FEEDING IN S. DEVON IN 1976. — For three days, at the peak of the 90°F. heatwave at the end of June, up to a dozen Large Yellow Underwings (*T. pronuba*) were feeding in full sunlight from 9 a.m. onwards on valerian flowers, something I have never before observed. — H. L. O'HEFFERNAN, 3 Coombe Meadows, Chillington, Kingsbridge, S. Devon.

AGRIUS CONVOLVULI (L.) IN YORKSHIRE IN 1976. — On 18th September I was presented with a slightly battered female *A. convolvuli* by a neighbour (Mrs. J. Powell) who had found it resting on the back of a deckchair on the sea front at Scarborough on 16th September. — J. BRIGGS, Frimley House, Deepdale Close, Slackhead, Beetham, nr. Milnthorpe, Cumbria.

EXCHANGES AND WANTS

I would be grateful if anyone would send me their observations, past and future, on: (a) Migrant Insect Species; (b) Scarcer Resident Butterfly Species, in Ireland. — *Dr. J. P. Hills,* 61 Knocknashee, Goatstown, Dublin 14, Ireland.

SOCIETAS EUROPEA LEPIDOPTEROLOGICA. The inaugural meeting of this new society took place in Bonn last September, when Dr. R. de Jong was elected president. Committees have been set up on: (1) Systematics and Taxonomy; (2) Current Literature; (3) Environmental Protection and Research. The society wishes to increase its membership rapidly this year to ensure its publication plans. — Applications for membership to: *Dr. P. Sigbert Wagener,* Hemdener, Weg 19, 429 Bocholt, Bundesrepublik Deutschland. Annual Subscription D.M. 20. Entrance fee D.M. 5.

Wanted. — I would greatly appreciate records of *British Phyllonorycter* (*Lithocolletis*) species, both common and rare, for inclusion in the proposed "British Moths and Butterflies" in order that the distribution maps may be as complete as possible. — *Dr. Ian Watkinson,* 166 Sterling Road, Sittingbourne, Kent.

For Sale. — Separates of Col. Emmet's "Notes on some of the British Nepticulidae", 35p, postage 9p, and "Notes on some of the British Nepticulidae II", 45p, postage 9d. Both items 75p, postage 11p. These papers are unbound with a paper cover for each. — Apply to: *P. J. Sokoloff,* 4 Steep Close, Glentrammon Road, Green Street Green, Orpington, Kent BR6 6DS.

THE ENTOMOLOGIST'S RECORD
AND JOURNAL OF VARIATION

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

TO OUR CONTRIBUTORS

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CONTENTS

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THE ENTOMOLOGIST'S RECORD

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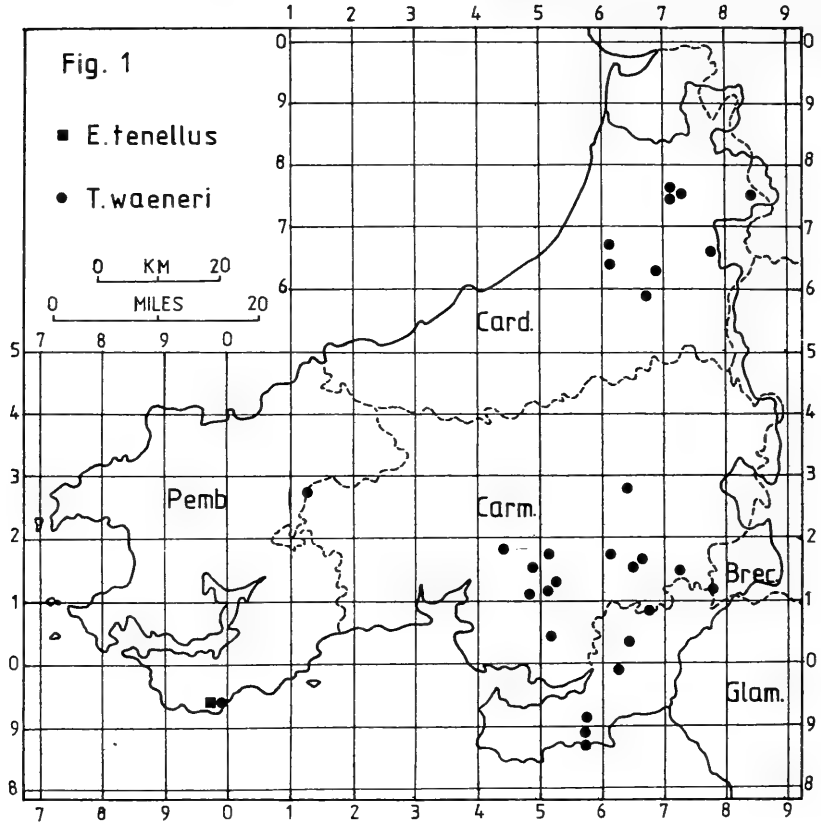
Fig. 1
E. tenellus
T. waeneri
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0 MILES 20
Card.
Pemb
Carm.
Brec.
Glam.

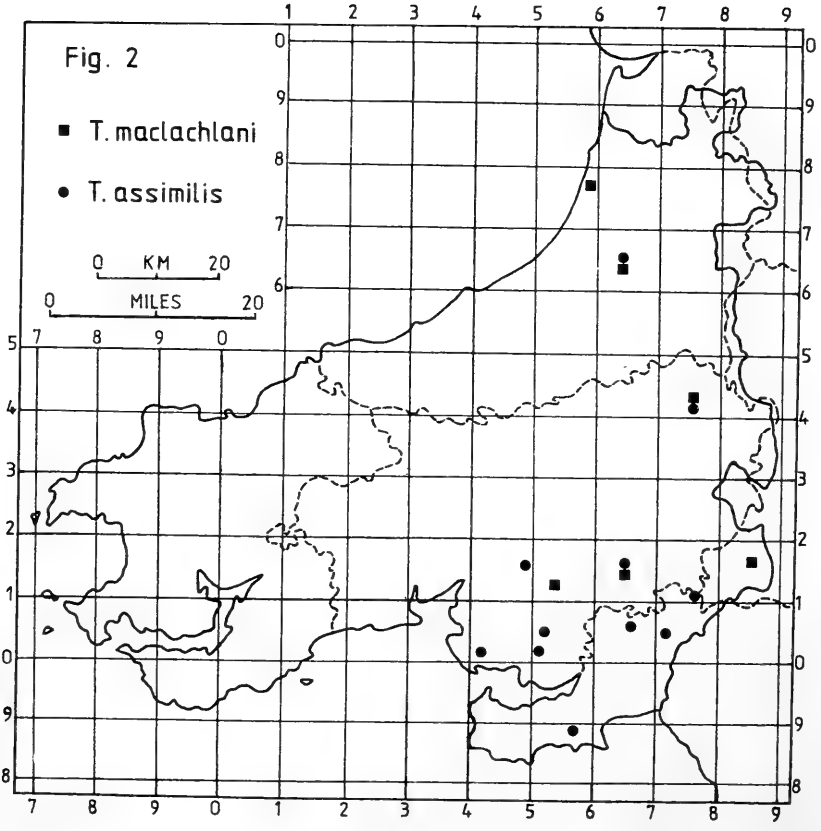
Fig. 2
T. maclachlani
T. assimilis
0 KM 20
0 MILES 20

Notes on the Distribution of Psychomyiid Larvae (Trichoptera) in South-west Wales

By R. A. Jenkins*

Introduction

The following records are based largely on collections made during a biological assessment survey of rivers and streams in south-west Wales from 1973-76. The survey area comprises the old counties of Cardiganshire, Pembrokeshire and Carmarthenshire (i.e. the new county of Dyfed). Small areas of Breconshire and Radnorshire (both now Powys) and Glamorgan are also included in the region covered by the south west Wales River Division.

Although these records reflect the predominantly lotic nature of the localities surveyed, both lakes, ponds and the so-called "hygropetric" habitats (Edington and Alderson, 1973) were also examined wherever possible. Thirteen British species are listed by Kimmins (1966), of which the following have been recorded in South-west Wales: 1. *Ecnomus tenellus* (Rambur). 2. *Tinodes waeneri* (Linnaeus). 3. *Tinodes maclachlani* Kimmins. 4. *Tinodes assimilis* McLachlan. 5. *Tinodes unicolor* (Pictet). 6. *Tinodes rostocki* McLachlan. 7. *Tinodes dives* (Pictet). 8. *Lype phaeopa* (Stephens). 9. *Lype reducta* (Hagen). 10. *Psychomyia pusilla* (Fabricius).

The remaining species include *Metalype fragilis* (Pictet) which appears to have a restricted distribution, and *Tinodes pallidulus* McLachlan, which no longer occurs at its two original localities (Edington and Alderson, 1973). *Tinodes maculicornis* (Pictet) has recently been reported from Ireland (Dr. J. M. Edington, *pers. comm.*).

Larvae of eight species have been described from a number of Welsh counties by Edington and Alderson (1973), and Jones (1969) recorded *T. assimilis* from Caernarvonshire. *T. waeneri* larvae have been reported from the River Cynon, Glamorgan (Learner *et al.*, 1971 and also from Lake Bala, Merionethshire (Dunn, 1961).

Ten species of larvae were recorded during the survey, and the identification of *E. tenellus, T. waeneri, L. phaeopa, L. reducta* and *P. pusilla* was confimed by rearing adults in the laboratory. Adults of *T. dives, T. assimilis* and *T. maclachlani* were also taken in the field. Species were taken at 91 localities, including 14 at which two species were found, and three at which three species were recorded. Larvae and adults were identified using the keys of Edington and Alderson (1973) and Macan (1973) respectively.

Results

Ecnomus tenellus

Larvae of *E. tenellus* were taken at one locality, an alkaline lake at Bosherston in South Pembrokeshire (Fig. 1). This species is regarded as being local in Great Britain (Hickin,

* Welsh National Water Development Authority, South West Wales River Division, Penyfai House, 19 Penyfai Lane, Furnace, Llanelli, Dyfed.

1967), and the larvae are only known elsewhere from the River Thames (Edington and Alderson, 1973).

E. tenellus larvae were found to be common at Bosherston, and were taken from a variety of habitats. They were most abundant on *Chara* beds, were taken in association with sponge, and also from galleries on stones. The occurrence of this species at Bosherston Lakes is the first British record of larvae from a lentic habitat.

Tinodes waeneri

The distribution of this species agrees with the typical habitats described by Edington and Alderson (1973). Larvae of *T. waeneri* were found on the stony shores of lakes, in large streams and in small rivers. *T. waeneri* appears to be restricted to the upper reaches of small rivers in south-west Wales; it was rarely encountered in the lower reaches and was not recorded from small streams.

Larvae were found to be very abundant in small acid lakes in North Cardiganshire, and were particularly numerous at Llyn Eiddwen and Llyn Fanod, near Blaenpennal. At four localities, larvae had constructed galleries on submerged wood and at one further site larvae were also found on a submerged metal pipe. Both *Lype* species construct galleries on submerged branches in lakes and streams (Edington and Alderson, 1973), but the occurrence of *T. waeneri* from similar habitats is unusual.

T. waeneri was recorded from 23 lotic sites in Glamorgan, Carmarthenshire, Breconshire and Cardiganshire, and also from eight lakes in Carmarthenshire, Pembrokeshire and Cardiganshire (Fig. 1). Adults were taken at three localities from which larvae had previously been collected.

Tinodes maclachlani and *Tinodes assimilis*

Larvae of *T. maclachlani* have been recorded from six localities in Carmarthenshire, Breconshire and Cardiganshire (Fig. 2), *T. assimilis* larvae from 11 sites in Carmarthenshire, Glamorgan and Cardiganshire (Fig. 2).

Both species were found typically in "hygropetric" localities, and *T. assimilis* also occurred on near-horizontal bedrock in the River Aeron, Cardiganshire. Larvae of both species were also recorded from small springs.

Tinodes unicolor

Edington and Alderson (1973) recorded that the streams in which they found *T. unicolor* all had a calcium content in excess of 60 mg./l. In the present survey *T. unicolor* was recorded from only one site in Carmarthenshire (Fig. 3), a small calcareous stream with a total hardness as Ca CO_3 of 48 mg./l.

Few water courses in south-west Wales are predominantly calcareous, and it is therefore possible that *T. unicolor* may have a restricted distribution in the area.

Tinodes rostocki and *Tinodes dives*

Larvae of *T. rostocki* were recorded from four localities during the survey, one in Breconshire and three in Carmarthenshire (Fig. 3). At one site, near Glynhir, Carmarthenshire,

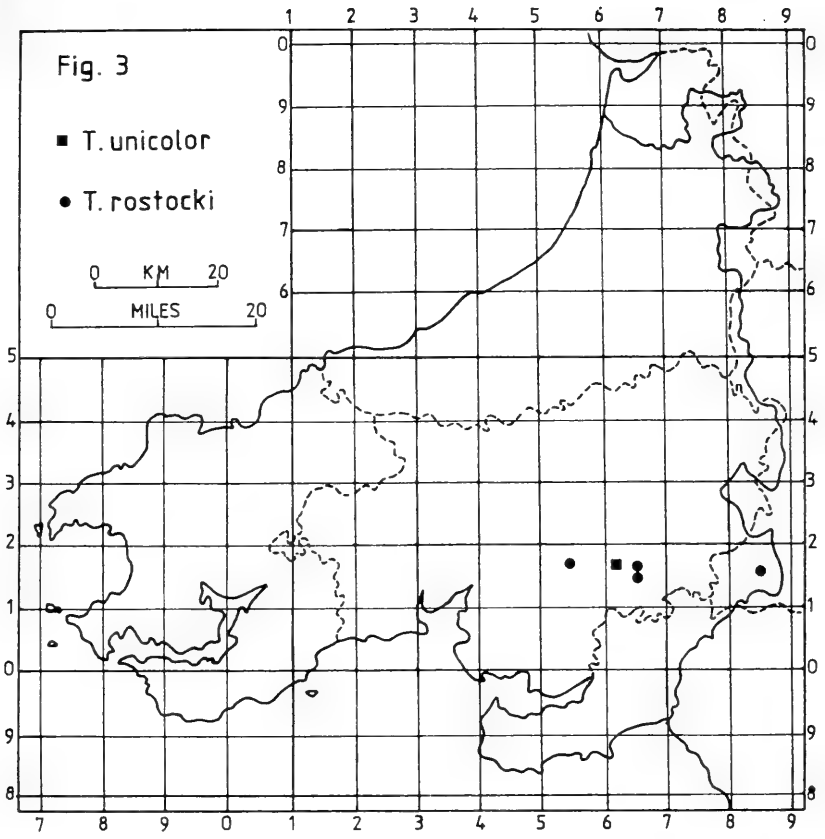
Fig. 3
T. unicolor
T. rostocki
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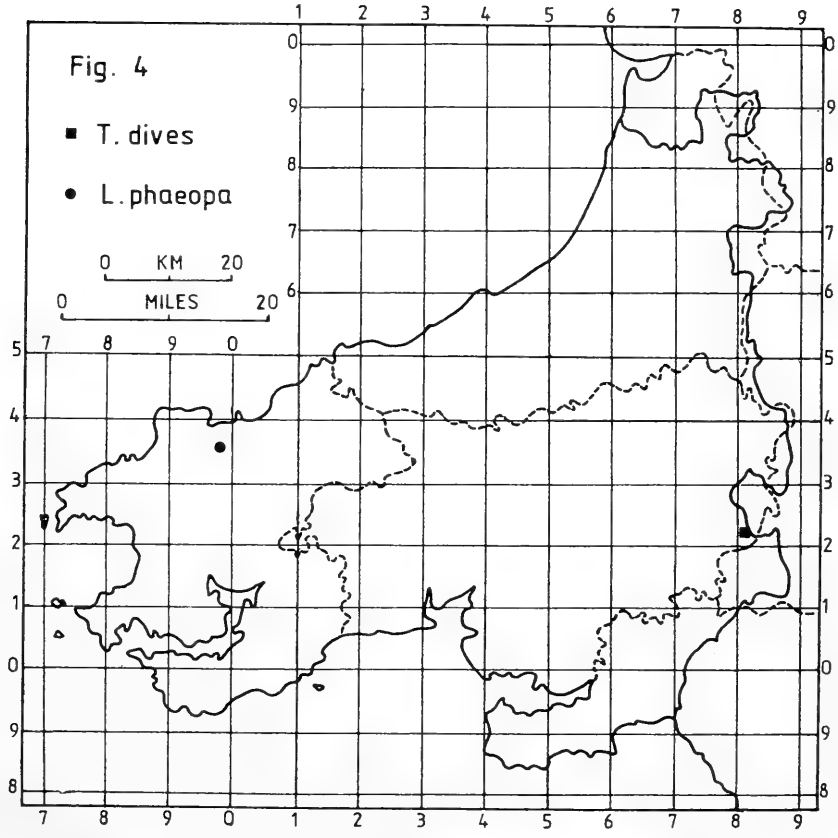
Fig. 4
T. dives
L. phaeopa
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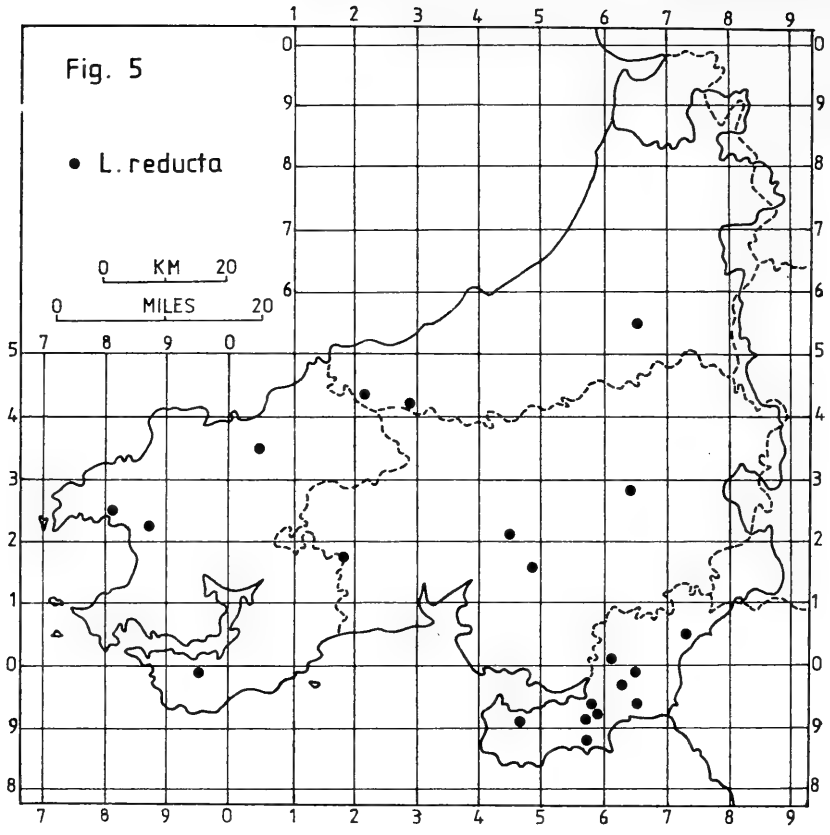
Fig. 5
• L. reducta
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0 MILES 20

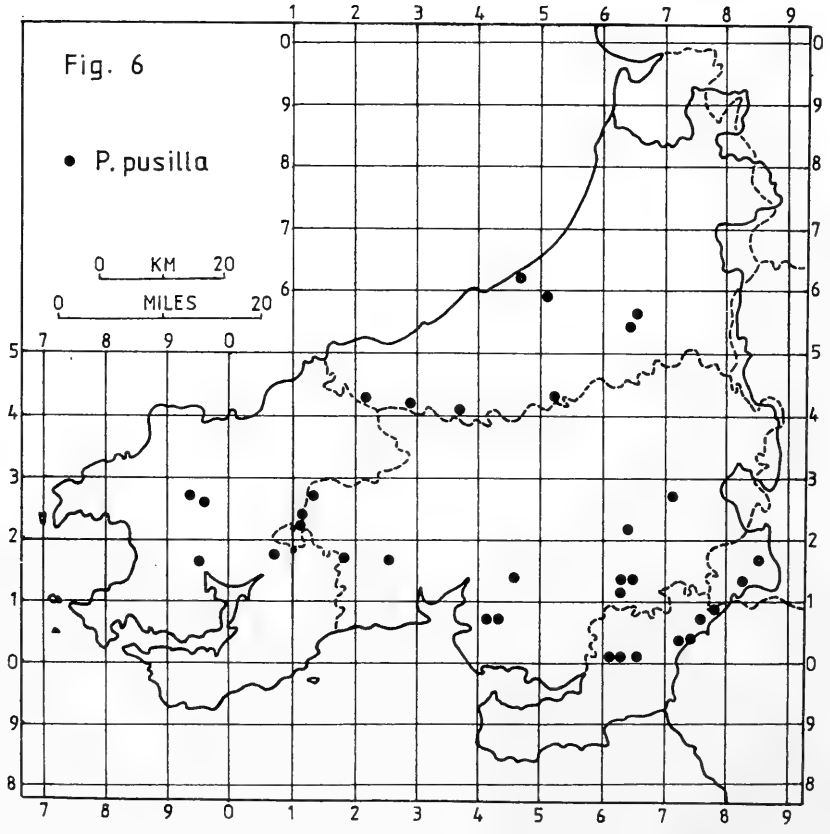
Fig. 6
• P. pusilla
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T. rostocki was found together with larvae of *T. maclachlani* and *T. assimilis*. Larvae of *T. rostocki* were taken only from small streams in wooded valleys, a type of habitat rarely encountered during the survey.

Similarly, *T. dives* larvae were only recorded at one site in the headwaters of the River Sawdde, Carmarthenshire (Fig. 4). The lack of records for this species is possibly due to the very infrequent sampling of moorland watercourses. The typical larval habitats for both *T. rostocki* and *T. dives* agree closely with those described by Edington and Alderson (1973).

Lype phaeopa and *Lype reducta*

Larvae of *L. phaeopa* were found at only one locality in Pembrokeshire (Fig. 4), although adults were recorded from three sites in Glamorgan, two in Carmarthenshire and one in Pembrokeshire.

The present study corroborates the view of Edington and Alderson (1973) that *L. reducta* is a common species in South Wales. This view conflicts with that of Hickin (1967) who regarded *L. reducta* as a rare species in Britain. *L. reducta* larvae have been found at 21 localities in Glamorgan, Pembrokeshire, Cardiganshire and Carmarthenshire (Fig. 5).

Edington and Alderson (1973) reported that the typical habitats for *L. reducta* larvae were streams, lakes and ponds. In the present survey, larvae were also found at three sites on the River Teifi, Cardiganshire, and one on the River Towy, Carmarthenshire. It therefore appears that the habitat range of *L. reducta* extends to the larger rivers.

Larvae of *L. reducta* were particularly common on the Gower Peninsula and at other localities in West Glamorgan (Fig. 5).

Psychomyia pusilla

This species was widely distributed throughout south-west Wales. *P. pusilla* larvae were recorded from 34 localities in Pembrokeshire, Cardiganshire, Glamorgan, Carmarthenshire and Breconshire (Fig. 6). The range of habitat was found to be large streams and rivers and *P. pusilla* was rarely taken from small streams.

Larvae were abundant at many sites on both the River Teifi and River Tawe and were found in most major rivers in the area. Although occurring predominantly on stones, larvae were also found on submerged wood at one River Teifi locality.

Discussion

The occurrence of *E. tenellus* in Pembrokeshire is of interest, as the only other British record for larvae is from an unspecified locality on the River Thames (Dr. J. M. Edington, *pers. comm.*). Lakes, reservoirs and slow running rivers are regarded by Lepneva (1970) as the typical habitat, and there are no previous British records of *E. tenellus* larvae from permanent lentic waters.

The records for *T. waeneri* and *P. pusilla* show that these were the species most commonly encountered in south-west Wales. Tributaries were rarely sampled during the survey, and

it is possible that the distribution of *T. rostocki* and *T. dives* might be extended if tributary systems were to be sampled on an extensive scale.

Psychomyiid larvae are small in comparison with many other Trichoptera larvae, although with some experience, galleries of most species can be located. Larvae of both *Lype* species are rather more difficult to locate, since the galleries often contain wood fragments, and are consequently not as obvious in the field as those of *P. pusilla* and the *Tinodes* genus.

The habitats described by Edington and Alderson (1973) have proved to be extremely consistent with those observed for species recorded in the present survey. It was also noted that larval galleries of *T. waeneri* and *P. pusilla* were usually located on stones at the margins of rivers and streams; both species were rarely encountered in mid-stream habitats.

Larvae of *T. maclachlani* and *T. assimilis* were occasionally found on vertical rock faces at stream margins, and galleries were often above water level. Hickin (1967) has described similar conditions for *T. unicolor* and *T. pallidulus.*

Summary

1. Ten Psychomyiid species have been recorded from 91 localities in south-west Wales. The three remaining British species (Kimmins, 1966) have not been found to date in this region.
2. The record of *E. tenellus* larvae is only the second for Great Britain, and is the first from a still water habitat.
3. The most abundant species were *T. waeneri* and *P. pusilla,* although this may be a consequence of the type of survey undertaken. *T. waeneri* and *P. pusilla* larvae have been found on submerged wood, and the habitat range of *L. reducta* apparently extends to large rivers.
4. In support of the conclusions of Edington and Alderson (1973) regarding the distribution of *L. reducta,* this species was found to be common in south-west Wales.

Acknowledgements

I wish to thank Dr. J. M. Edington for confirming my identification of larval species, and also Mr. P. C. Barnard of the British Museum (Natural History) for kindly confirming the identification of adults.

I also thank Dr. R. P. Bray and Miss Jennifer Rees for placing their psychomyiid records at my disposal. Finally, my grateful thanks are due to Dr. J. M. Edington and to Dr. R. P. Bray for their critical reading of the manuscript.

Facilities for this work were provided by the Welsh National Water Development Authority (South West Wales River Division).

Distribution Maps

The squares printed on the accompanying distribution maps are the 10 km. squares of the National Grid. A symbol on the map indicates

that the species has been recorded from the 1 km. square in which it lies. The species are arranged according to the check-list of Kimmins (1966). The boundary of the South West Wales River Division and, within it, the county boundaries prior to reorganisation, are also shown. Abbreviations for county names are as as follows: Brec. — Breconshire. Carm. — Carmarthenshire. Card. — Cardiganshire. Pemb. — Pembrokeshire. Glam. — West Glamorgan.

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Large Group of the Old Lady (Mormo maura L.) in Essex. — At the height of the 1976 summer drought Mr. Peter Winter, a committee member and one of the field recorders of Colchester and District Natural History Society and Field Club, investigated a small, low brick tunnel spanning Birch Brook, a stream on the south-east boundary of Colchester, Essex. On 8th August, when the mid-day temperature in North Essex was well into the 80's Fahrenheit, Mr. Winter squeezed into the tunnel to see if there were any insects or mammals resting out of the sunshine and intense heat. He noticed what at first looked like a dark patch of fungus or damp staining on the tunnel roof. Closer examination showed that the dark patch was in fact about 30 Old Lady moths (*Mormo maura* L.) at rest in a cool, damp and dark position. The moths were thickly huddled together and only a few moved their wings when Mr. Winter examined them and took a number of flash-light coloured photographs. This habit of the Old Lady of selecting cool, dark places for resting is well documented in the literature and there are many records of small groups of the moths being found under bridges, water mill tunnels and other spots above or near streams or mill pools. In August 1970 I disturbed a number of *Mormo maura* and about a dozen *Cotacala nupta* L. (Red Underwing) from the mouth of a cave at Digne, Alpes de Haute Provence, France. They were evidently seeking the cool depths of the damp cave to rest and shelter from the fierce heat. The mid-day temperature was close on 100°F. — J. Firmin, 1 Scott Drive, Levden, Colchester, Essex.

The Overwintering of the Larva of *Apatura iris* L.

By H. G. Short*

The purpose of the present note is to suggest that the larva of *A. iris* may sometimes leave the tree in the autumn and overwinter amongst the litter on the ground near the base of the tree. In view of the low population density of the species in England, confirmation of such a point by observation in the wild is extremely difficult and the suggestion arises as a result of experience with large numbers of the larvae in captivity over a period of 30 years.

Before such behaviour is dismissed as impossible, consideration should be given to the fact that it is the normal mode in the case of a large Japanese species, *Sasakia charonda* Hew. The latter is somewhat Apatura-like, both in the larval and imaginal stages, and the larvae are found in the winter amongst the dead leaves around the tree by Japanese collectors.

My *iris* larvae have been kept on *Salix caprea* bushes, 2-3 metres in height and in 8 or 10 in. flower pots, each pot standing in a plastic bowl and with its base surrounded by water to keep undesirable predators off the tree. The behaviour of the *iris* larvae appears to be the same whether the trees stand outdoors in a wire cage or in an unheated greenhouse.

The colour assumed by the *iris* larva in preparation for the winter usually falls into one of two groups, one dark grey in colour and the other a yellowish olive-green. Larvae of the latter colour usually overwinter against a bud on a twig and on leaving the leaf do not as a rule wander far before finding a suitable resting position. They grey larvae on the other hand often proceed down the tree right to ground level and then work their way upwards, exploring every irregularity in the bark until they find a position to their liking, usually at a fork between twigs or on the main trunk. Not only do these larvae reach ground level but it is not at all uncommon for them to leave the tree and wander about on the soil. Every year one or more larvae does this. Such excursions are often not more than one or two inches in length and the larva then returns to the trunk and ascends the tree to a normal position. Occasionally they reach the rim of the pot and I have had several instances of the larva overwintering successfully on a silk pad spun on the rim. In the spring it will change colour at the same time as the larvae on the tree, and on awakening will find its way back to the tree with no apparent difficulty. This, incidentally, disproves the assertion which has been made that the awakening of the larva in the spring is brought about by the "rising of the sap in the tree", as also does the fact that the larvae can be successfully overwintered on unrooted sallow cuttings, provided that they are not kept too dry.

In the interest of hygiene the earth around the sallow bushes in the pots is kept unnaturally clear of leaves, etc., and it is an interesting point whether a larva which wandered

* "Ridgecombe", Hindhead, Surrey, GU26 6BA.

from the base of the tree would return before winter if a suitable resting place were available on the ground.

There is one other point in support of the hypothesis that the larva may winter on the ground. The leaf on which the larva has been in the habit of sitting is always spun to the twig with silk, and departure from the leaf in the autumn is always delayed until the last possible moment, quite often until the leaf has fallen away naturally from the stem and is only retained in position by the silk. In some cases the larva delays even longer and the leaf falls to the ground with the larva still in position at its tip. When this happens the larva does not appear to be at all concerned, and continues to sit in its usual position. I have never left such leaves lying around after they were discovered, for fear of the larva wandering away and being lost, but nor have I ever found such a fallen leaf from which the larva had wandered away. When the leaf is reattached to the tree by its stalk with a small piece of cotton, the behaviour of the larva depends upon the manner of attachment. If this is firm, so that the leaf cannot fall, the larva may stay in position right through the winter. If it is tied loosely, as if it were dangling by its silk attachment, the larva will leave the leaf for a normal overwintering position—usually within half an hour of being reattached.

I should be most interested to hear from any other entomologist who has found *iris* larvae in the wild during the winter at or near ground level—say within one foot.

LOZOPERA BEATRICELLA WALS. NEW TO THE LONDON AREA. — On two occasions during the past season, 30.vi and 19.viii.76, I took single specimens of this very local Cochylid moth at the lighted window of my study here. I have never met with the foodplant (spotted hemlock, *Conium maculatum*) anywhere in the district, but only further east in the Thames marshes; however, it presumably does grow not far from here, for besides the above species another hemlock feeder, *Agonopterix* (*Depressaria* s.l.) *alstroemeriana* Clk., has twice come to the study light. *L. beatricella* is known from South Essex but the only Kent records appear to be for the eastern division: Folkestone Warren (Purdey) some time before 1914, and on the cliffs near Kingsgate, between Cliftonville and Broadstairs (H. C. Huggins), 1930 or 31. Mr. Huggins, to whom I am indebted for these records and other information, bred the species there from Alexanders (*Smyrnium olusatrum*)—a previously unrecorded foodplant—and published his find (reference not to hand). He knows of no others for the county. Even if mine is not actually the first capture in W. Kent, it is fairly surely the first in the London suburbs. — A. A. ALLEN, 49 Montcalm Road, Charlton, London, SE7 8QG. [The late Mr. Stan Wakely found many stems of *C. maculatum* on Dartford Marshes in 1965 which were tenanted by *Lozopera beatricella*. — Editor.]

Stigmella carpinella (Heinemann, 1862) (Lep.: Nepticulidae): A Species New to Britain

By A. M. EMMET*

In a recent paper (Emmet, 1976), I recounted how certain specimens in the W. H. B. Fletcher collection at Cambridge University led to a new species, *Stigmella auritella* (Skala), being added to the British list. My present task is to relate the discovery of another species, also new to Britain, emanating from the same source.

Fletcher reared a large number of Nepticulidae from mines on hornbeam (*Carpinus betulus*) taken in Ashdown Forest, Sussex. These, as one would expect, included *Stigmella floslactella* (Haworth) and *S. microtheriella* (Stainton); but he separated from them a third group which he labelled "? *carpinella* Heinemann". The series looked rather a "mixed bag", but as in some instances, at any rate, Fletcher's determinations seemed likely to prove correct, a male was dissected and the slide, together with the specimen, was sent to Dr. J. Klimesch in Austria for his opinion. Through some unfortunate accident, the aedeagus became detached and lost in the mounting of the genitalia and consequently Dr. Klimesch could say no more than that the specimen might be *S. carpinella.* So at my request the Department of Zoology sent Dr. Klimesch a second consignment of undissected specimens. Again there was trouble: this time the package suffered damage in the post. However, Dr. Klimesch found a loose abdomen and after dissecting it and drawing the genitalia gave his opinion that the moth was not *S. carpinella,* but might be a hitherto unnamed species which the late Danish authority, A. G. Carolsfeld-Krausé, suspected to occur on hornbeam. Dr. Klimesch sent me figures of the genitalia of the Cambridge specimen and also of *S. carpinella* drawn from an Austrian example. I have already referred to these events (Heath *et al.*, 1976: 232).

Since it seemed that a gremlin was interfering with my efforts to get the Fletcher specimens positively identified and I felt too embarrassed to worry either the Department of Zoology or Dr. Klimesch any further, I deemed it best to start afresh with my own material. Non-entomological commitments prevented me from collecting first-generation mines in hornbeam in 1975, but in the late summer and autumn I was less involved. On the 12th September, when at Ham Street, East Kent with E. C. Pelham-Clinton and D. W. H. ffennell, I found two tenanted mines and the others one each. Later, on 10th October, I took upwards of a score of tenanted mines at Lullingstone, West Kent. In the spring of 1976 my Ham Street mines produced one *S. floslactella* and one ♀ of the new species and Pelham-Clinton reared a ♂ of the latter. The Lullingstone material resulted in ten adults, five of each species, both sexes being represented. On 11th May, 1976, I took a further example of the new moth resting on a hornbeam trunk in Abbots Wood, East Sussex.

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Dr. J. D. Bradley kindly dissected the genitalia of one of my male specimens from Lullingstone and found they corresponded with Dr. Klimesch's figure of *S. carpinella*. This establishes *S. carpinella* as a resident British species, but leaves the problem unsolved of the genitalia dissected by Dr. Klimesch. I have looked again at Fletcher's series, and most at any rate, appear to me to be conspecific with my bred specimens, but the possibility remains that another, apparently unnamed, species is mixed with them. If collectors who are interested in the Nepticulidae turn their attention to mines on hornbeam, this species, if it exists, should come to light.

On the present rather meagre evidence, it seems that *S. carpinella* and *S. floslactella* occur in about equal numbers on hornbeam, though the latter, of course, feeds far more commonly on hazel. *S. microtheriella,* which is equally partial to the two foodplants, easily outnumbers the other two put together. At present, *S. carpinella* is recorded only from Kent and Sussex (vice-counties 14, 15 and 16), but may well also occur in adjacent counties where hornbeam is established.

At the time of my collection, I noticed no difference between the larvae and mines of what I was later to learn to be two distinct species. Below I give the marks of distinction as stated by Hering (1957). Judging from the mixed series of mines in my herbarium, I am doubtful whether Hering's characters are sufficiently constant and positive for identification purposes.

The main credit for adding this species to the British list goes to Fletcher. It is a pity that his diffidence dissuaded him from publicly announcing a new British species which he had determined correctly, but it must be remembered that at the end of the last century the amateur had few facilities to help him solve his problems. When Stainton was alive, questions could be referred to him, but after his death there was a hiatus until the British Museum (Natural History) acquired its important reference collections, and its well informed and helpful team of specialists.

S. carpinella belongs to the *floslactella* group and should be placed immediately after that species. It may be fitted into the "Key to species (imagines) of the Nepticulidae" (Heath *et al.,* 1976: 179 col. 1) as follows: —

After 1.16 add,

35(a) Fascia golden yellow, sharply defined.....*S. carpinella*
Fascia otherwise.....35(b)

in 1.17 add (b) after 35.

S. carpinella is the second species new to Britain to be announced after study of the somewhat neglected collections housed at the University of Cambridge; a third will follow in due course. It may well be that specialists in the other families of microlepidoptera will find a visit to the insect room of the Department of Zoology equally rewarding.

My thanks are due to Dr. J. Smart and Dr. W. A. Foster for giving me access to the collections at Cambridge, to Dr. J. Klimesch for advice and the relevant figures of genitalia, and to Dr. J. D. Bradley for the dissection of specimens.

Description

Stigmella carpinella (Heinmann, 1862)

Imago. Wingspan 5-6mm. Head and collar yellow, antennae in male long, reaching beyond fascia, in female shorter; eyecaps yellowish white. Forewing dark fuscous brown; a sharply defined direct or slightly outwardly oblique golden yellow fascia beyond middle; apical area with faint violet reflections; cilia, beyond a line of dark-tipped scales, whitish grey, darker on tornus. Hindwing and cilia pale grey. Can be distinguished from *S. floslactella* by the longer antennae in the male and the uniform dark fuscous brown coloration of the basal half of the forewing.

Ovum. Laid on the underside of a hornbeam (*Carpinus betulus*).

Larva. Similar to that of *S. floslactella.*

Mine. An irregular gallery, distinctly widening at its end; frass deposited in thick heaps (Hering, 1957).

Cocoon. Similar to that of *S. floslactella,* but more yellow.

Life history. Bivoltine. The adults fly in May and August and the larvae feed from June to July and again from September to October.

Distribution. Local in Kent and Sussex, but possibly occurring wherever hornbeam is well established in south-east England. Abroad it is found in central and northern Europe.

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HETEROGRAPHIS OBLITELLA Z. PLENTIFUL IN S.E. LONDON, 1976 — In response to Dr. Watkinson's appeal for further records of this Phycitid (*antea*: 334), I can report that it was remarkably common here at Charlton during the year just passed. For the immediate environs of London, my own captures at Blackheath, 2½ miles to the south-west, are the only ones I am aware of; the first alone was published (1960, *Ent. Rec.,* **72**: 135), but a few more singletons appeared at intervals in the next decade. That being so, the relatively high numbers—say about a dozen on a good night—that came to light between late June and late August last were a surprise indeed. Though most of them appeared at m.v.l., a few were attracted to the ordinary house lights; but it was never found at rest in the daytime. From the insect's known habits I would guess that it was breeding on some rough ground in the vicinity of the Thames less than a mile away. Unfortunately, I can say nothing of its incidence here during the previous two years since moving from Blackheath, as the lamp was not then in use. — A. A. ALLEN, 49 Montcalm Road, Charlton, London, SE7 8QG.

A Plea for Auctorum

By Charles F. Cowan*

ELIZABETH D. G. BRITT. OMN. REGINA. Absolutely. But I have seen it jocundly remarked that BRITT. is a misspelling because (although spelling in bygone days was pretty cavalier) Britons never really had two T's. Not so, for the universal convention in international Latin was to double the final letter of an abbreviation of a plural. And it is of all the British everywhere that she is Queen; BRITANNIORUM OMNIUM, not just of little Britain.

Similarly, when an author revises earlier work of his own, any errors he made will be corrected with, for brevity, the author citation *auctoris,* abbreviated *auct.* This is short for "of this author" and means "sorry, my mistake". If he is correcting a common general usage he will use the plural *auctorum,* abbreviated *auctt.,* meaning "of authors" (i.e. a widespread error).

These conventions, perfectly clear and very convenient, have been internationally understood for centuries. We ought not to confuse the literature by changing them. If we do not like the conventions we should not use them. The recent trend to ignoring this one, for no stated reason, is much to be deprecated.

A minor difficulty arises when joint authors refer back to their earlier work. Should they use the normal *auct.,* which is theoretically inaccurate, or *auctt.,* which misleads? Surely the former is to be preferred, with a prefatory note in explanation; leaving *auctt.* to serve its normal purpose.

The commonest example of the double-lettered plural is, probably, pp. (=*paginae,* Latin for) pages, closely followed by sq[q] (=[*et*] *sequen*[*te*]*s*), for the [several] following page[s]. A description entirely on page 57, say, will be cited as p. 57. If it spills over to the next page it will be pp. 57 sq., as opposed to pp. 57-58 where it occupies most of the following page, and pp. 57, 58 suggesting casual mentions separately on these two pages. Then pp. 57 sqq. signifies a number of pages starting at 57. Incidentally, the abbreviation for plates (an English word) is pls. It is wrong to treat it as Latin and write "pll." since in Latin it would be *tabulae* (*tabb.*)

Surprisingly, the *Concise Oxford Dictionary* (edn. 4, 1956 reprint) lists in Appendix 1 (p. 1526) the abbreviation for pages as "p.p.". This is quite wrong, and the same work lists pp. correctly in its prefatory table of "Abbreviations used" (p. xvi).

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Melanic Notodonta anceps Esp. (Great Prominent) in the New Forest. — While I was collecting near Brockenhurst on 8th May, 1976, about 80 specimens of this species came to four m.v. lights, one of which was a melanic form. Weather conditions were good with high cloud and very little wind and altogether 69 species of macrolepidoptera came to the lamps. — A. F. J. Gardner, Willows End, Charlecote, near Warwick.

A New Subspecies of *Pseudochazara graeca* (Staudinger) 1870 (Lep.: Satyridae) from Greece

By J. BROWN, F.R.E.S.*

Pseudochazara graeca (Staudinger) has recently been separated from the Asiatic species *Pseudochazara mamurra* (Herrich-Schaeffer) and has been placed as a species in its own right (Brown, 1976). The distribution of *P. graeca* seems to be entirely restricted to Greece, it being recorded from Mt. Taygetos, Mt. Chelmos, Mt. Parnassos, Mt. Tymphristos and Mt. Peristeri (Brown, *loc. cit.*), Mt. Menalon (Willemse, 1975), Mt. Iti (Lempke, 1974) and Ioannina (Koutsaftikis, 1974). The specimens from Mt. Taygetos up to as far north as Mt. Tymphristos are known to correspond to the description of *P.g. graeca* (Staudinger, 1870). However, examples of this same species occur in the Pindos mountains and correspond to an as yet undescribed subspecies.

Pseudochazara graeca **coutsisi** ssp. nov.

Male: Upperside ground colour very dark brown, the pale buff postdiscal markings obscured by extensive fuscous suffusion. Underside ground colour yellow-buff; hindwing heavily irrorated with dark grey, the distal border of discal area darkened to form a prominent character in most specimens. Forewing length 20.5-26 mm. Otherwise similar to *P.g. graeca.*

Female: Similar to male but larger, forewing length 26-27 mm. Upperside pale postdiscal markings less obscured by fuscous suffusion.

Material examined:

Holotype ♂ (forewing length 24 mm.). Smolikas Massif, N. Greece, 1,600 m., 27.vii.1976. J. Brown leg. et coll.

Allotype ♀ (forewing length 27 mm.). Katara Pass, Pindos Mts., 1,600 m., 17.viii.1976. J. G. Coutsis leg. In coll. Higgins.

Paratypes. Two ♂ ♂, data as for holotype but 25.vii.1975 and 17.vii.1976, in coll. Brown. Seven ♂ ♂, three ♀ ♀, data as for allotype but 1,450-1,600 m. and 25.vii.1970-27.viii.1976, J. G. Coutsis leg. et coll. Five ♂ ♂, data as for allotype, J. G. Coutsis leg. In coll. Higgins.

This subspecies is named with pleasure after Mr. J. G. Coutsis who was the first to capture this remarkable insect.

P.g. coutsisi flies over rough clearings in coniferous forests at altitudes of 1,400 m. to 1,650 m. This is rather different from the habitat of *P.g. graeca,* which favours open scree slopes.

P. graeca coutsisi can be distinguished from *P. graeca graeca* by the former's often smaller size, more darkly suffused upperside and, on the hindwing, the heavily marked underside. The underside of *P.g. graeca* is less distinctly irrorated and appears less grey and more ashen and pale. However, no significant difference could be discerned between the male genitalia of these two subspecies of *P. graeca.* Similarly, *P.g. coutsisi* can be clearly distinguished from *P. mamurra,* which

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species it resembles superficially, by its male genitalia, which show a broad distal third of the valve and a pointed vaivular tip, there being no trace of the more tapered valve which is typical of *P. mamurra. P.g. coutsisi* also shows some resemblance to the taxon *obscura* Staudinger, which flies in the Taurus Mountains, in that both have a very darkened and similar upperside. However, the male genitalia and androconia of specimens of *obscura* make it certain that this taxon is more closely allied to *P. mamurra* than to *P. graeca.* For example, the androconia of *obscura,* like those of *mamurra,* but unlike those of *graeca,* are of subgroup 2b (Brown, 1976). Moreover, *obscura* can be clearly distinguished from *coutsisi* by its rather deeply scalloped hindwings and by its silvery-grey hindwing underside. It is hoped to consider the relationships of the different forms of *Pseudochazara* from S.E. Europe and Asia Minor in a later work.

Thus, there would seem to be at least two different subspecies of *P. graeca,* which still seems to be restricted in its distribution to Greece. In the Pindos range of N. Greece there occurs the darker and the smaller *P.g. coutsisi,* while *P.g. graeca* seems to occupy most of the highest mountains of central Greece and the Peloponnesos. It remains unclear as to where the boundary between these two subspecies exists and its nature is entirely unknown.

Acknowledgements

I am greatly indebted to Mr. John Coutsis and Dr. Lionel Higgins for their ready help in the preparation of this note.

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A Second Brood of Inachis io (L.)? — On several occasions here during mid-October 1976, I saw large numbers of *Vanessa atalanta* L. and a dozen or so *I. io* (L.) feeding on ivy flowers. I had never before seen *atalanta* in such numbers, and some were still flying about on sunny days in the second week of November. The October *io* were mainly in fresh condition and I think may have been second brood specimens, as the summer brood disappeared from my garden buddleia during late August and there were hardly any in September. With plenty of ivy in bloom for nourishment this autumn, one hopes that these October *io* butterflies may hibernate successfully. — Richard Revels, Top Field Farm, Dunton Lane, Biggleswade, Beds., SG18 8QU.

Lepidoptera from South Ronaldsay, Orkney

By K. P. BLAND*

The lepidopterous fauna of the Orkney Islands is still incompletely known and although recent work by several collectors (see Lorimer, 1975) has improved the situation considerably, much of this work has been concentrated on the Mainland, Burray and, of course, Hoy. While on holiday in South Ronaldsay between 21st July and 2nd August, 1976, I took the opportunity to run a mains m.v. lamp and to do a small amount of day-time collecting. Although the siting of the light-trap (in agricultural land at 260 ft. on Vensilly Hill) was far from ideal and the weather was rather windy and showery, the following species were recorded.

GLYPHIPTERIGIDAE: *Anthophila fabriciana* (Linn.), flying around *Urtica dioica* (B, H); *Glyphipterix simpliciella* (Steph.), larvae in seeds of *Dactylus* (F, H).

YPONOMEUTIDAE: *Rhigognostis annulatella* (Curt.), common on shore at dusk (B, E).

EPERMENIIDAE: *Phaulernis fulviguttella* (Zell.), flying in sunshine (C); *Epermenia chaerophyllella* (Goeze), bred from larvae on leaves of *Heracleum sphondylium* (H).

ELACHISTIDAE: *Elachista pulchella* (Haw.), one to light-trap (A).

OECOPHORIDAE: *Endrosis sarcitrella* (Linn.), in buildings (A); *Hofmannophila pseudospretella* (Sta.), in buildings (A); *Agonopterix ciliella* (Sta.), bred from larvae in rolled leaves of *Angelica sylvestris* (C); *Agonopterix heracliana* (Linn.), bred from larva in folded leaf of *Heracleum sphondylium* (H); *Agonopterix nervosa* (Haw.), bred from larva on *Ulex europaeus,* from near Quoyhorsetter.

TORTRICIDAE: *Archips rosana* (Linn.), bred from pupa in folded leaf of *Lonicera* (H); *Cnephasia interjectana* (Haw.), disturbed from low herbage (A); *Eana osseana* (Scop.), flying in sunshine (E); *Croesia bergmanniana* (Linn.), beaten from *Rosa* sp. (H); *Acleris aspersana* (Hübn.), bred from larva in folded leaf of *Potentilla palustris* (A); *Olethreutes lacunana* (D. & S.), disturbed from low herbage (A, C); *Lobesia littoralis* (H. & W.), common flying around *Armenia maritima* at dusk (B, E); *Dichrorampha montanana* (Dup.), disturbed from low herbage (A).

PYRALIDAE: *Agriphila straminella* (D. & S.), to light-trap and by day (A, B, C, D, E, F, G, H); *A. tristella* (D. & S.), to light-trap (A); *Udea elutalis* (D. & S.), abundant flying by day (A, B, C, D, E, F, G, H).

PTEROPHORIDAE: *Platyptilia gonodactyla* (D. & S.), bred from pupa on *Tussilago farfara* (B); *P. isodactylus* (Zell.), bred from pupa in stem of *Senecio jacobaea* (G); *Stenoptilia bipunctidactyla* (Scop.), to light-trap and by day (A, B).

PIERIDAE: *Pieris napi* (Linn.) (E).

LYCAENIDAE: *Polyommatus icarus* (Rott.) (A, B, C, E, F).

NYMPHALIDAE: *Aglais urticae* (Linn.) (D.).

SATYRIDAE: *Maniola jurtina* (Linn.) (A, C, E, F, H).

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GEOMETRIDAE: *Xanthorhoe munitata* (Hübn.), to light-trap and by day (A, E, F); *Scotopteryx chenopodiata* (Linn.), at rest in grass (A); *Camptogramma bilineata* (Linn.), common (B, C, E, G); *Entephria caesiata* (D. & S.), to light-trap and by day (A, B); *Cosmorhoe ocellata* (Linn.), one at rest in grass (A); *Chloroclysta citrata* (Linn.), disturbed from low herbage (C); *Cidaria fulvata* (Fors.), beaten from *Rosa* sp. (E, H); *Perizoma didymata* (Linn.), to light-trap and by day (A, B, C, D, E, F, G, H); *Eupithecia pulchellata* (Steph.), larvae in flowers and seed-capsules of *Digitalis purpurea* (E); *Aplocera plagiata* (Linn.), one at rest on dead heather (E).

NOCTUIDAE: **Rhyacia simulans* (Hufn.), one in building (A); *Noctua pronuba* (Linn.), to light-trap (A); *Lycophotia porphyrea* (D. & S.), to light-trap (A); *Diarsia mendica orkneyensis* (B.-S.), to light-trap and at dusk (A, B); *Xestia c-nigrum* (Linn.), to light-trap (A); **X. sexstrigata* (Haw.), to light-trap (A); *X. xanthographa* (D. & S.), to light-trap (A); *Hadena bicruris* (Hufn.), larvae in seed-capsules of *Silene dioica* (B, C, E); *Cerapteryx graminis* (Linn.), to light-trap and at dusk (A, B); *Mythimna impura scotica* (Cock.), to light-trap and at dusk (A, B, E); *Apamea monoglypha* (Hufn.), to light-trap (A); **A. remissa* (Hübn.), to light-trap (A); **Oligia fasciuncula* (Haw), to light-trap and by day (A, B); *Mesapamea secalis* (Linn.), to light-trap and at dusk (A, B); *Photedes minima* (Haw.), to light-trap (A); *Autographa pulchrina* (Haw.), to light-trap (A.).

Additional species from other parts:

NEPTICULIDAE: †*Stigmella hybnerella* (Hübn.), mines in *Crataegus* sp. at Binscarth and near Fea, Mainland.

GRACILLARIIDAE: †*Caloptilia elongella* (Linn.), bred from larvae in rolled leaves of *Alnus* sp. from Binscarth, Mainland; *C. syringella* (Fab.), larval blotches in leaves of *Ligustrum* sp. in Kirkwall, and in *Fraxinus excelsior* at Binscarth, Mainland; *Phyllonorycter maestingella* (Mull.), bred from blotch-mines in *Fagus sylvatica* from Binscarth, Mainland.

NYMPHALIDAE: *Argynnis aglaja* (Linn.), several at Bu' Sands, Burray.

SATURNIIDAE: *Saturnia pavonia* (Linn.), larvae on *Filipendula ulmaria* in Greeny Marsh, Mainland.

GEOMETRIDAE: †*Epirrhoe tristata* (Linn.), one atBu' Sands, Burray.

Explanatory Notes

*=Genitalia checked. †=Previously unrecorded in Orkney. Localities: A — Vensilly Hill, B — Newark Bay, C — Wind Wick, D — Bur Wick, E — Sand Wick, F — Oyce of Herston, G — Dam of Hoxa, H — St. Margaret's Hope. Plant names are from Keble Martin (1969).

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A Remarkable Aberration of *Gonepteryx cleopatra* L. (Lep.: Pieridae) from Malta

By T. G. HOWARTH*

ab. *vallettai* **ab. nov.**

♂ Upperside. Forewing of normal shape and lemon yellow ground colour but lacks completely the usual deep orange discal marking which is replaced by a much paler almost creamy yellow. This extends further distad towards the margin than usual. The normal lemon yellow ground colour extends basad along the costa, the veins and interneural folds and the normally obscured sexual brand which runs as a line from the hind margin to beyond vein 4 is also a lemon yellow and is thus clearly visible against the whitish yellow of the disc. Hindwing normal in shape but lacks the characteristic orange discoidal spot which is replaced by whitish scales. Underside of both fore- and hindwings normal in coloration and markings.

The holotype was bred from ova laid by a captured female of normal coloration and was the only aberrant specimen to emerge amongst the seven reared.

Holotype ♂. Malta, Buskett. Bred ex ova laid by female taken 10.vi.52 (coll. A. Valletta).

Paratype ♂. Malta, Buskett. Captured 13.vi.71. Paul Sammut (coll. P. Sammut).

The fact that two specimens of this aberration have occurred within the same neighbourhood is significant and would indicate that it is genetical in origin.

I have pleasure in naming this very distinct insect after Mr. A. P. Valletta, the doyen of Maltese entomologists.

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EUPHYDRYAS AURINIA ROTT. (MARSH FRITILLARY) REDISCOVERED IN WORCESTERSHIRE. — After 23 years without any known confirmed sightings of this butterfly in Worcestershire, I am pleased to report the existence of a colony in 1976. The species used to be fairly well distributed in the county, but thorough search during the last 10 years of 16 old haunts, and other likely looking places, have all proved negative.

The clue which led to its discovery in 1976 came in mid-August, when Miss J. Lewis and the Worcs. Nature Conservation Trust phoned to tell me about a chance conversation in which a lady had mentioned this butterfly amongst others seen during the summer. The account and location seemed plausible, so on 21st August my wife and I made a two-hour search for larvae and succeeded in finding five nests.

As far as I can ascertain, this is the only current site for *aurinea* in the old counties of Worcestershire, Warwickshire, Staffordshire, Shropshire and Herefordshire, and so I have decided not to disclose the location. However, it would be of interest if anyone else can claim knowledge of any site for *aurinia* in these five counties. I know, incidentally, that there are still a few sites for it in Gloucestershire. — J. E. GREEN, 25 Knoll Lane, Malvern, Worcs., WR14 3JU.

Lepidoptera in the South of Ireland

By the Rev. David Agassiz*

During the latter half of August 1976 I spent a holiday with my family at Roche's Point, by the lighthouse at the entrance to Cork Harbour. My only previous visit there had been in 1955 from which I remembered the place swarming with Clouded Yellows in that very hot summer. Happily 1976 preserved my memories with splendid weather, even if the Clouded Yellows were fewer in number.

Very little work seems to have been done in this area, especially on the microlepidoptera, although according to Beirne there are a few records listed by Kane from Roche's Point in 1884 and 1901. I have not searched the literature nor collections for records of microlepidoptera since the publication of Beirne's list; therefore I use the term "new" to denote "not included by Beirne", though it does not necessary follow that there is no previous record. On this basis most of my captures constitute new vice-county records for East Cork (v.c. H.5) and four species are new to Ireland. All records are from Roche's Point unless stated otherwise.

New to Ireland are: *Ptocheuusa paupella* (Zell.), one at Youghal, 20.viii.1976; *Agriphila latistria* (Haw.), one; *Ostrina nubilalis* (Hübn.), a few; and *Heterographis oblitella* (Zell.), fairly common—up to nine per night in an actinic trap.

New records for East Cork are: *Psychoides filicivora* (Meyr.), larvae common from which adults emerged continuously from September to Christmas; *Monopis rusticella* (Hübn.); *Tinea pellionella* (L.); *Caloptilia stigmatella* (Fabr.), bred from *Populus alba; Aspilapteryx tringipenella* (Zell.); *Calybites phasianipennella* (Hübn.); *Elachista atricomella* (Stt.); *Endrosis sacitrella* (L.); *Depressaria pastinacella* (Dup.); *D. badiella* (Hübn.); *Aponopterix heracliana* (L.); *A. subpropinquella* (Stt.); *A. arenella* (D. & S.); *A. liturella* (D. & S.); *A. rotundella* (Doug.); *Teleiopsis diffinis* (Haw.); *Caryocolum fraternella* (Doug.); *Eucosma hohenwartiana* (D. & S.); *Epiblema uddmanniana* (L.); *Ancylis badiana* (D. & S.); *Lobesia littoralis* (H. & W.); *Olethreutes lacunana* (D. & S.); *Pandemis heparana* (D. & S.); *Cnephasia interjectana* (Haw.); *Acleris latifasciana* (Haw.); *A. rhombana* (D. & S.); *A. aspersana* (Hübn.); *A. hastiana* (L.), many bred from Whitegate; *Agapeta zoegana* (L.); *Aethes francillana* (Fabr.); *Chrysoteuchia culmella* (L.); *Agriphila tristella* (D. & S.); *Eudonia angustea* Curtis); *E. mercurella* (L.); *Cataclysta lemnata* (L.), from Youghal; *Evergestis forficalis* (L.); *Pyrausta cespitalis* (D. & S.); *Eurrhypara hortulata* (L.); *Udea elutalis* (D. & S.); *U. prunalis* (D. & S.); *U. ferrugalis* (Hübn.); *Mecyna asinalis* (Hübn.), confirmed as a resident Irish species, also recorded from mid-Cork (v.c. H.4) at about the same time by Dr. A. A. Myers; *Nomophila noctuella* (D. & S.); *Aphomia sociella* (L.); *Pyla fusca* (Haw.); *Homoeosoma carlinella* (Hein.); and *Emmelina monodactyla* (L.).

* St. James' Vicarage, 144 Hertford Road, Enfield.

Among the macrolepidoptera, one specimen of *Hoplodrina ambigua* (D. & S.) was taken at Youghal, Co. Cork, on 20th August; this species is not included in Baynes' list of Irish Macrolepidoptera. Other more noteworthy species were: *Mythimna straminea* (Treits.) and *Celaena leucostigma* (Hübn.) from Youghal; and from Roche's Point: *Orgyia antiqua* (L.), larva; *Euxoa oblisca* (D. & S.); *Hadena luteago barrettii* (Doubl.), larvae; *Cryphia muralis* (Forster)—presumably referable to ssp. *westroppi* Cock. & Bull., through the two specimens taken closely resemble some of mine from Cornwall; *Celaena haworthii* (Curtis); *Eupithecia tripunctaria* (H.-S.); and *Epirrita filigrammaria* (H.-S.).

The only significant migrants were one *Agrius convolvuli* (L.) on 24th August, and one *Orthonama obstipata* (Fabr.) on 28th August. *Udea ferrugalis* (Hübn.) was very common throughout our stay.

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Baynes, E. S. A., 1964. *A Revised Catalogue of Irish Macrolepidoptera.*
Baynes, E. S. A., 1970. *A Revised Catalogue of Irish Macrolepidoptera, Supplement.*
Beirne, B. P., 1941. A List of the Microlepidoptera of Ireland. *Proceedings of the Royal Irish Academy,* **XLVII**, pp. 53-147.

HELIOTHIS ARMIGERA HBN. (SCARCE BORDERED STRAW). — I took a female of this moth in my m.v. trap here on the 17th October. I kept here alive for over a week, during which time she laid 13 eggs, but unfortunately only one reached the adult state — the moth emerged on the 26th December. — A. F. J. GARDNER, Willows End, Charlecote, near Warwick.

BREEDING A SECOND BROOD OF LYSANDRA CORIDON (PODA.). — I have been breeding *L. coridon* for eight years, and on several occasions when I left some ova on the foodplant, saw signs of feeding during early autumn and upon inspection found small larvae. These larvae are usually discovered in September, and until this year (1976), by keeping them on the potted foodplant and putting them in a greenhouse, I have had no success at rearing them.

In the exceptional summer of 1976, I decided I would make a particular point of trying to obtain a second brood. In mid-July, therefore, I put about 30 newly-laid ova from one of my stocks on to potted *H. comosa* and placed the lot in a greenhouse. I examined these towards the end of August and found six half-grown larvae but that not all the ova had hatched. I continued to keep the larvae in the greenhouse, and they became full-grown in late September. Two of the larvae died when full-grown and became black and squashy; the other four changed to pupae, one of which was deformed and died, but the remaining three produced two butterflies during the last week of October and one in early November. These were a typical male, a typical but crippled female and a very nice female ab. *fowleri* South. — RICHARD REVELS, Top Field Farm, Dunton Lane, Biggleswade, Beds., SG18 8QU.

Hampshire Jottings, 1976

By Dr. Richard Dickson*

Prospectus: A selection of lepidoptera notes from Hampshire and the Isle of Wight, including *Eriocrania chrysolepidella* (Zeller) and *Pammene trauniana* (D. & S.) new to Hampshire, and a second British record of *Cydia pactolana* (Zeller).

Eriocrania chrysolepidella (Zeller). Dr. John Langmaid and I visited the complex of woods between Titchfield and Wickham, sometimes called Botley Wood, on 28th March. We found Eriocraniids in plenty flying amongst and beaten from mixed understory containing Hazel. On examination, these were found to be largely of the *E. haworthi* Bradley group, and dissection showed them to be mostly *E. chrysolepidella* (Zeller). I sent some to Mr. John Heath who believed them to be *chrysolepidella* but suggested we look for larvae. In the event, Messrs. Langmaid and Denzil ffennell had visited the wood and found more moths amongst coppiced hazel, and later, mines on hazel although these were already vacated. I have found in my collection a female taken by David Appleton at the first site on 20.iv.74. Mr. ffennell has found mines in North Hampshire (V.C. 12), and Dr. Langmaid noted moths commonly in Queen Elizabeth Forest, near Petersfield. Botley Wood now has every species of British Eriocranoidea!

Adela croesella (Scopoli) turned up again at Botley Wood, sparingly on umbel blossoms late in June. This is the only longhorn moth I know that does this.

Cossus cossus (L.). At Butlock Heath, near Netley, on 19th April, David Appleton found a crab-apple afflicted by the Goat Moth—the workings being smelt before seen.

Coleophora vibicella (Hübner) has had an excellent season at Botley Wood, with far more cases seen than last year. This can partly be attributed to a more complete knowledge of its range, and partly from the forester's kind co-operation in timing the cutting of the rides. A note for 8th May reads: "One (plant) of no great size and 70+ cases and an adjacent plant was similarly affected." Mr. ffennell reports a high incidence of parasitisation.

Caloptilia leucapennella (Stephens). One beaten from oak on the disused railway line between Yarmouth and Freshwater on 18th September.

Conopia myopaeformis (Borkhausen). Botley Wood, one on a hogweed flower on 29th June. The Red-belted Clearwing seems to be rather scarce in Hampshire: the last one that I know of was found by Dr. Langmaid inside his car in Southsea in 1970.

Zelleria hepariella (Stainton). Three or more of this local moth were flying around a single bush oak at Noar Hill reserve on 26th July. None were found amongst the foodplant or elsewhere nearby, despite a search. Both moths kept were males: Mr. ffennell believes that only the females hibernate.

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Platyedra subcinerea (Haworth). Hayling Island, 1 ♀ at rest on a fence east of Sinah on 26th May.

Neosphaloptera nubilana (Hübner). Botley Wood, 1 ♂ by day on 23rd June (genitalia examined).

Eriopsela quadrana (Hübner). At Botley Wood, this species was found on 2nd May (2) and 9th May (1). One was found at rest: the other two were put up from low herbage when they flew close to the ground and were difficult to follow. Later, the tented-up leaves of golden rod were not uncommon, but only one larva, undoubtedly parasitised, remained. Dr. John Bradley kindly confirmed the identification of these, the only recent Hampshire records.

Pammene trauniana (D. & S.). Botley Wood, one swept from field maple on 27th May. The wood contains a fair quantity of maple, although most of it is is very large bushes or small trees. Confirmed by Dr. Bradley.

Pammene obscurana (Stephens). Botley Wood, 1 ♀ flying around birch in afternoon sun, 3.vi.76 (D. W. H. ffennell).

Pammene inquilana (Fletcher). In brief afternoon sunshine at Harewood Forest on 27th March, 3 ♂ ♂ were caught flying amongst birchy understory. In flight they behaved much like *Epinotia immundana* F.v.R. A female was netted at Tadley Common on 10th April.

Cydia aurana (F.). This pretty tortricid has been particularly common on hogweed blossom this year. Maximum count: 45 at Botley Wood on 25th June.

Cydia pactolana (Zeller). Botley Wood, 1 ♂ by day on 1st June. Caught by David Appleton, and determined by Dr. Bradley, it is now in the B.M.N.H. The previous British and Hampshire specimen was at Alice Holt, a fresh male at m.v. light on 12.vi.65 by E. A. Sadler (*Ent. Rec.*, **78**: 134).

Olethreutes shulziana (F.). When we put up 2 ♂ ♂, 1 ♀ from low herbage at Shortheath Common on 31st July, I associated them with the cranberry that forms the predominant vegetation at that point. However, there is plenty of the foodplant. All were in mint condition despite the late date. Determined by Mr. J. M. Chalmers-Hunt.

Mecyna asinalis (Hübner). Nearly all the madder around Ventnor and Freshwater showed evidence of past larvae in last August and onwards. The lower cuticle and parenchyma are eaten, sometimes forming an almost snail-track window, but in many places whole whorls of leaves are rendered translucent. Copious frass is produced and some becomes caught in the plentiful silk. By this late date only a few small larvae could be found, occupying silken tunnels in spun leaves. I hold little hope of rearing moths, but in early October a couple of larvae I had taken over a month earlier had reached a very fair size. Collected wet and placed straight into water, the madder is still fine five weeks later, although showing characteristic rose colour at the edges.

Alispa angustella (Hübner). Affected spindle berries were common, with larvae still present, on 30th August at Crab Wood, near Winchester, and 11th September at Harewood

Forest, and are reported from Abbotstone Down still later by Mr. ffennell. Even these latest larvae have produced some moths, the balance overwintering. The berry eventually turns yellow and looks dead, but by this time the larva has left.

Heterographis oblitella (Zeller). I first saw this moth in my parents' garden, near Fareham, on 6-7.ix.75, just four days after Mr. Peter Rogers took one at m.v. at Browndown. This year it is reported fairly common in South Hampshire, and Mr. ffennell has had plenty at Martyr Worthy, near Winchester. Wild Grounds, near Rowner, 2 at m.v. light 30th July; Browndown, 3 ♂ ♂ at m.v. 6th August; and Titchfield Haven, 2 at m.v. 1st-2nd September.

Thymelicus lineola (Ochsenheimer). We found a single Essex Skipper among more than 25 Small Skippers (*T. sylvestris* (Haworth)) at Martin Down on 28th July. Its distribution in Hampshire is certainly discontinuous: we have screened several hundred Small Skippers this year!

Quercusia quercus (L.). The Purple Hairstreak had one of its population explosions: nine ova were found after a desultory search at Harewood Forest on 27th March, and in early July the butterflies were flying in scores, with tangled masses dog-fighting over the oaks in several woods.

Strymonidia w-album (Knoch). We had a single White-letter Hairstreak on wood sage flowers at Luccombe Down on the edge of the shrubby area, Isle of Wight, on 17th July. It does not seem to have been seen on the island for several years. It had a good season on mainland Hampshire.

Apatura iris (L.). Mr. S. W. Rickards, the F.C. forester who lives on the edge of West Walk, has again had the honour of several visits from His Highness the Purple Emperor, where he has granted audiences to several local naturalists. He seems inclined to settle on windows, and two were seen together on the surround to a swimming pool. The species was already well out by 7th July. We had to be content with a single flight record at Botley Wood on 30th June, by David Appleton.

Hipparchia semele (L.). We have not seen the Grayling on the Hampshire chalk for several years, but this season it turned up at Noar Hill, Burghclere Lime Works, Luccombe Down and Botley Wood. At Luccombe Down it had probably wandered away from the colony amongst the heather on the leached chalk which crowns this down. At Browndown it was much more in evidence, feeding in profusion on purple loosestrife flowers in the marsh than it was on its native heath. A single female on buddleia on 1st August in my parents' garden, near Fareham, gave me something of a surprise. I cannot see that it could have bred in the area.

Catarhoe rubidata (D. & S.). Titchfield Haven, one at m.v. light 22nd-23rd June. Mr. ffennell tells me that at Martyr Worthy he has had it for the last four years, after a long absence. The Ruddy Carpet had decreased from being common to scarcity in Hampshire by the time I had started entomology. Let us hope it will revert to being common by the time I finish!

Agrius convolvuli (L.). My only Convolvulus Hawk of the year was at Titchfield Haven reserve, 1 ♂ at m.v. light 19th-20th September, although other Hampshire workers recorded more. I wonder if the relative paucity of migrants along this coast may be attributed to a "sheltering" effect of the Isle of Wight?

Acherontia atropos (L.). A Death's-head Hawk reached me from Bridgemary where it was found on a lawn on 2nd-3rd October.

Heliothis viriplaca (Hufnagel). We took a pair of Marbled Clovers feeding on chalk flowers in hot sunshine. 1 ♀, Martin Down, 28th July; and 1 ♂, Leckford Estate, 30th July.

I extend my thanks to the gentleman whose help is mentioned in the text, and especially to David Appleton on whose field-work a large part of these notes is based.

THE QUEEN OF SPAIN FRITILLARY (ARGYNNIS LATHONIA L.) AT BOURNEMOUTH. — I spotted this fritillary flying in from the sea and up the beach on 15th August, 1976 at 1.30 p.m. It flew in about three yards from Bournemouth pier and parallel with it. It was approximately 6-7 ft. up and dropped much lower and slowed down so that I just caught sight of the silvery blobs. Alas, I was without a net, and followed it two yards but lost sight of it as it went up to the promenade. From its flight direction I should think it came in from the south over the sea and via the Isle of Wight or Purbeck Island. The wind was easterly, surface sea breeze S.S.E. and temperature about 70°F. I have seen the species on the continent and have a short series from Austria. — A. H. DOBSON, 1 Halden Close, Great Woodley, Romsey, Hants.

THE HUMMING BIRD HAWKMOTH IN FEBRUARY 1977. — A Humming Bird Hawkmoth (*Macroglossum stellatarum* L.) was reported to me as having been closely observed hovering and feeding at blue hyacinths on 11th February, at Falmouth. The hyacinths were in a window-box. Presumably the moth had been hibernating, but it would be interesting to know if others may have been seen at such an unusual date. — Dr. F. H. N. SMITH, Turnstones, Perrancoombe, Perranporth, Cornwall.

ONCOCERA OBDUCTELLA (ZELLER) IN KENT. — This pretty Pyralid appears to be almost entirely restricted to the North Downs, where its larval foodplant marjoram (*Origanium vulgare*) grows, and even in known localities is not common. Until last year, my only two specimens came from a chalk pit near Burham, but during 1976 I recorded two further specimens from garden m.v. traps. The first record was from Aylesford (2½ miles S.W. of the Downs) on 16th July, the second from Newington, near Sittingbourne (5 miles N.E. of the Downs) on 23rd July. The very warm weather prevailing at the time may have been responsible for a dispersal flight of this normally local and rare insect. — P. J. JEWESS, 378 London Road, Aylesford, Kent.

1976 in North West Surrey

By P. J. Baker*

After several years of dwindling numbers of both species and specimens, 1976 was one of the best years on record for lepidoptera in my garden, and in this note I give details of some of the more interesting macrolepidoptera observed.

The number of specimens noted at light was above average throughout the year, and all records were beaten during the hot spell which ran from about mid-June and included the first ten days or so of July. Over this period the temperature at 2300 hours was regularly in the upper 70's and on one night reach 80°F. In a normal year here, about 500 specimens can be expected in the light trap after a good night at the end of June, but in 1976 on most occasions during this period the numbers were up by a factor of ten. On one occasion the head count (which took nearly two hours!) was 4,680, and sample counts for other dates indicated totals of between 4,500 and 6,000. On four nights the trap was left switched off, literally to clear the air! Not surprisingly, seven new species of larger moths were added to the garden list, two being new to me and two of which (marked with an †) were new to the North West Surrey Lists (Bretherton, 1957 and 1965).

The season first showed signs of promise on the 5th May, when *Hadena perlexa* (D. & S.) was recorded, an apparently very uncommon insect in the district with only one being noted every two or three years. On the 6th June, the first of several *Elaphria venustula* (Hbn.) was seen, a species that has been distinctly scarce for the past four years. On the 27th June, the first of the new records appeared in the shape of a very tattered female *Apoda avellana* (Haw.), no great surprise as it is quite a common insect in the Windsor Forest complex some two miles away as the crow flies. On that night there also appeared the first *Earis clorana* (L.) in several years.

A small, curiously marked Geometer, seen flying insanely round the front porch lamp on the 29th June, gave me but a tantalisingly brief glimpse of itself before it took off into the night. I then spent much spare time during the next two days looking into every nook and cranny until, at last, it was found at rest in the greenhouse, the first *Idaea vulpinaria atrosignaria* Lempke† to be recorded for the area. After this, the first garden record of *Drepana cultraria* (F.) in the trap next morning was something of an anticlimax.

A specimen of *Anarta myrtilli* (L.) occurred in the trap on the 3rd July, a diurnal insect that is quite often taken at light, though seldom away from heathland which is its preferred habitat. That night also produced another wanderer, this time from the chalk, an *Apamea sublustris* (Esp.). The 4th gave the first of four *Cucullia absinthii* (L.), which moth first appeared in the garden in 1975, having perhaps recolonised the area owing to the abundance of its foodplant on the nearby M25 motorway workings. On the 7th, *Hyles gallii* (Rott.) turned

* Mount Vale, The Drive, Virginia Water, Surrey.

up along with three *Eremobia ochroleuca* (D. & S.), which latter species was first noted in 1974 and has since become quite frequent.

The next notable date was the 10th August, when a fast flying moth netted in the garden constituted the first positive record for *Lasiocampa quercus quercus* (L.). The species was seen flying in the garden on several subsequent occasions, and was also noted as having had a good year nearby on Chobham Common. The next morning produced the second new species for the area, *Eupithecia inturbata* (Hbn.)†, and it will be interesting to see if this local "pug" is established on the small amount of maple that grows in the district. On the 4th, *Cyclophora porata* (L.) occurred, a moth that used to be fairly frequent but had not been seen since 1974. A *Celaena leucostigma* (Hbn.) appeared in the trap on the 15th, the first of this marsh-frequenting species to occur here since 1970, thus indicating that it may still survive in the neighbourhood despite the destruction of its most likely local habitat by the construction of the M3 motorway. This same habitat destruction, however, seems to have caused the local extinction of *Xanthorhoe birivata* (Bork.), which used to have a strong colony near Trumps Mill House.

Xanthia ocellaris (Bork.) appeared on the 22nd September after a gap of three years. This "sallow" seems to undergo wide variations in abundance in this district. Some years it is possible to obtain 50 larvae from a fairly small bag of fallen black poplar catkins, whereas in other years the most intensive collecting of the catkins from the same trees will produce nothing but a few *Ipimorpha subtusa* (D. & S.). On the 27th September, I recorded the first specimen of *Agrius convolvuli* (L.) for the garden trap; and, finally, on the 9th October, the first of several *Dichonia aprilina* (L.), also a new record for the garden.

Current Literature

Evolution of gall forming insects — gall midges by **B. M. Mamaev.** Translated by A. Crozy. 322 pp., 79 figs., stiff wrappers. The British Library, Lending Division, Boston Spa, Whetherby, W. Yorks. 1975. £8.50.

This is a translation of the Russian book *Evolyutsiya galloobrazuyushchikh nasekomykh-gallits,* Leningrad, 1968, which traces the emergence and development of the capacity to cause galls in the most characteristic groups of insects. The main trends in the morpho-physiological evolution of the intestinal tract of gall producers are elucidated. The book is in two parts each consisting of four chapters. Part I treats of the morphological aspects of the evolution of gall midges; and Part II the ecological aspects of the evolution of gall midges. A bibliography of 453 references followed by an index of Latin names completes the work.

A Practical Handbook of British Beetles by **Norman H. Joy,** reprinted by E. W. Classey (1976). 2 vols., 622 pp., map and 169 plates. £30.

It is more than 40 years since this important book was first published. Favourably reviewed at the time in this and in other journals (cf. *Ent. Rec.,* **44**: 51; *Ent. mon. Mag.,* **68**: 43; *Entomologist,* **65**: 71), the *Handbook* has long formed an essential part of the equipment of the working coleopterist. Indeed, the original work (published at £3) has lately become so scarce on the market, that in a recent bookseller's catalogue it was priced at £60.

The reprint is by photo-lithography and a replica of the original, with volume 1 containing the text and volume 2 the illustrations and map, thus enabling one to consult the text and plates side by side. The original was rather large and cumbersome and quite unsuitable for carrying into the field. The reprint on the other hand, having been issued in a reduced format with each volume measuring only 22.5 cms. x 14.2 cms., is relatively light, convenient to handle and transport.

Clearly printed on good paper and fairly strongly bound, this reprint should prove a blessing to those coleopterists who until now could either not afford or obtain a copy of the original work. — J.M.C.-H.

Notes and Observations

THE FLAME BROCADE (TRIGONOPHORA FLAMMEA ESP.) IN BRITAIN. — I see from the editor's notes appended to the report of a capture of this species in Sussex that there are only four other records this century. To add to these I wish to report that I was present at St. Briavels, Glos., on 19th September, 1964, when two specimens were attracted to a tungsten filament light trap operated by a school friend, Mr. I. C. N. Brown. He reported these captures in *Bull. amat. Ent. Soc.,* **25** (270): 36 (where the locality is erroneously stated as being Worcestershire), and in response to this was visited by various entomologists, one of whom swopped one of the specimens for a selection of butterflies, including some swallowtails. Since I am no longer in touch with Mr. Brown I do not know the whereabouts of either specimen but there is no doubt that they were correctly identified. — Dr. M. R. YOUNG, Department of Zoology, University of Aberdeen.

THE LOCATION OF FRANCIS HEMMING'S ENTOMOLOGICAL DIARIES. — Few serious students of the Lepidoptera are unaware of the work of the late Francis Hemming (1893-1964), whose aim during his lengthy efforts toward a correct and lasting zoological nomenclature was characterised by the motto *stabilitas nominum securitas scientiae.* But, all are not aware that during his study of the butterflies he assembled an extraordinarly fine historical library of entomoligcal books and kept diaries of his field work. Captain Hemming's library was sold over a considerable span of time after his death, and some

of us who knew or corresponded with him felt ourselves fortunate to add his volumes, which are often carefully annotated and which bear his attractive bookplate, to our own collections.

However, a number of the most valuable books were sold to institutional libraries, and Michigan State University (East Lansing), which has in its Library an extensive collection of historic entomological literature, was one of the more extensive purchasers. Many scholars will be interested to know that 20 volumes (1921-1958) of Captain Hemming's diaries were acquired by Michigan State. These are excellent research sources, coming from the hand of a literate and observant naturalist. They record his collecting trips in Europe and the Near East, and contain accounts of entomological and other observations, lists of species seen and collected in various localities, as well as drawings and other data. — Dr. R. S. WILKINSON, Library of Congress, Washington, D.C. 20540; American Museum of Natural History, New York City, New York 10024.

SOME UNUSUAL MOTHS IN SUFFOLK IN 1976. — In a year remarkable for the immigration of many moths and butterflies from the Continent, the following species seen on the Suffolk coast may be of interest. On 6th July I found a specimen of the Pygmy Footman (*Eilema pygmaeola* Doubl.) in my moth trap in the garden. Another was reported by Mr. Jeremy Sorensen, the warden of the R.S.P.B. Reserve at Minsmere. The nearest known colony of this species is on the Norfolk coast, north of Great Yarmouth. Also in July two examples of the White-bordered Crest (*Dichomeris marginellus* Fabr.) were attracted to my m.v. light. Another was found in Ipswich by Mr. Arthur Watchman. As far I am aware these are the first Suffolk records of this tineid moth which is associated with juniper.

Between 26th August and 10th October, 15 specimens of the Convolvulus Hawkmoth (*Agrius convolvuli* L.) were attracted to my moth trap, and as I was away for 10 days during this period the number in the district may have been much larger. On 7th October, a Scarce Bordered Straw (*Helicoverpa armigera* Hübn.) came to my m.v. light. Several Humming-bird Hawkmoths (*Macroglossum stellatarum* L.) were also seen in local gardens during the same period. — H. E. CHIPPERFIELD, Walberswick, Suffolk.

A RARE VARIETY OF THE ALDER KITTEN MOTH (HARPYIA BICUSPIS BORKHAUSEN). — On the 24th July, 1976, a very odd "kitten" turned up in the m.v. trap here. The black median bar was reduced to a semi-circle on the inner margin. I took the specimen to the Brit. Mus. (N.H.) where Mr. D. J. Carter and his colleagues kindly identified it as *H. bicuspis* ab. *reducta* Lempke. As far as is known, this is the first time this variety has been found in Britain. — H. C. J. GODFREY, Pinehurst West, Swiffe Lane, Broadoak, Heathfield, Sussex.

PHTHORIMAEA OPERCULELLA (ZELL.) IN KENT.—On the 27th June, 1975 I took a specimen of *Phthorimaea operculella* (Zell.) in my light trap in Sidcup. The species is seldom seen in the wild in Britain but is a serious pest of the potato in warmer climates. Dr. Bradley kindly identified the specimen. — J. ROCHE, 16 Frimley Court, Sidcup Hill, Sidcup, Kent.

THE DINGY SHEARS (ENARGIA YPSILLON D. & S.) IN IRELAND. — I netted a specimen of this moth using an m.v. bulb in the "Murragh Marshes", Newcastle, Co. Wicklow (Irish Grid Ref. 03103) on the 20th July, 1976. Identification was confirmed by Dr. J. P. O'Connor of the Natural History Museum, Dublin. Baynes states in his catalogue of Irish Macrolepidoptera that it was first recorded by Birchall from Co. Wicklow (no date given). Kane dropped the record because it was "probably" recorded on "insufficient authority". Elsewhere in Ireland three specimens have been recorded: one from Co. Antrim and two from Co. Dublin (caught by Baynes in 1960 and 1963). Thus it now appears that Birchall's record was probably true. — DAVID N. DOWLING, 111 Capaghamore Estate, Clondalkin, Co. Dublin.

THE HUMMING-BIRD HAWK IN EASTBOURNE. — I recorded the capture of this immigrant at buddleia here in 1976 on the following dates: 23rd August at 1.40 p.m.; 24th August at 1.20 p.m.; 25th August at 1.30 p.m.; 26th August at 12.20 p.m.; 6th September at 2.05 p.m.; 8th September at 4.25 p.m.; 14th September at 6.45 p.m.; 19th September at 12.30 p.m. — M. PARSONS, 43 King's Avenue, Eastbourne, Sussex.

CYCLOPHORA PUPPILLARIA HBN. AND LITHOPHANE LEAUTIERI BOISD. IN NORTH-WEST SURREY. — The night of 8th October, 1976 proved to be a "Blair's night" at my m.v. light trap here for it brought a ♂ *C. pupillaria* (Blair's Mocha) and the first record of this species here. As a bonus, the trap also revealed a fair specimen of *L. leautieri* (Blair's Shoulder-knot) and likewise a first record for here. This last species seems to be increasing its range rapidly. — K. G. W. EVANS, 31 Havelock Road, Croydon, Surrey, CRO 6QQ.

A NOTE ON SOME BUTTERFLIES SEEN IN NORTHAMPTONSHIRE IN 1976. — In one of the best and most exciting seasons I have enjoyed, people with no knowledge or interest in insects were soon noticing and talking about the numbers of butterflies in their gardens, especially on buddleia bushes. Though one of the most prolific of seasons, it was disappointing to see neither *Colias croceus* Fourc. nor *C. hyale* L., and upon recently raising this point with Mr. Peter Cribb, he told me that large areas on the Continent that were formerly acres of lucerne are now mostly given up to cereals.

On 26th May, Mr. Alan Sharman and I found on some of the most sick-looking elm trees a few larvae of *Thecla w-album* Knoch, after searching locally and finding none until we reached the county boundaries. There must be some question now as to the well-being of this species in Northampton-

shire (though most unexpectedly I was to find the imago in plenty in the county on 12th July).

On the 4th June, I was collecting with A.S. in local woodland and had picked some sprays of Garlic Mustard (*Alliaria petiolata*) with ova of *Anthocharis cardamines* L. on them, when I noticed a white butterfly was showing interest in the flowers; so, standing still and holding the spray at arm's length, I had the pleasure of watching a female *cardamines* deposit on and in the flower buds. About the same time, *Pararge megera* L. was in good numbers and I took a fine male aberration, very suffused with the forewing black border entering the ocellus.

About the second week in July, I saw the Humming-bird Hawkmoth (*Macroglossum stellatarum* L.) in the town centre, flying as only it does, and the first sighting of this moth for many seasons. This species was again seen feeding from dahlias in the garden on the 22nd and 24th October, no doubt those of a second brood. *Vanessa atalanta* L. and *Cynthia cardui* L. were both numerous after the first sightings in early June, the former in all stages on nettle beds, but we seemed to lose *C. cardui* during the second week of August. The last *V. atalanta* emerged on the 2nd November from larvae collected in late September when they were abundant on young nettles growing on our local river banks. — J. H. PAYNE, 10 Ranelagh Road, Wellingborough, Northants.

ACHERONTIA ATROPOS L. AND OTHER IMMIGRANTS IN WARWICKSHIRE IN 1976. — On the 12th August, Mr. R. Allen found a fully grown *atropos* larva in a potato field at Princethorpe, and on the 18th he found a pupa. Unfortunately two other larvae had been discarded earlier by the potato diggers. The two pupae were kept alive in an airing cupboard from which the perfect insects hatched on the 11th and 12th of September.

Mr. M. Arnold took an *Agrius convolvuli* L. at Armington on the 23rd September; and another was taken by Mr. G. Robson on the 29th at an m.v. trap at Marton, near Rugby. On the 28th August, I took a very worn *Eurois occulta* L. of the grey form in my m.v. trap at Charlecote. *Macroglossum stellatarum* L. has occurred in numbers at Charlecote (two first noted on 12th June), Lillington, Leamington Spa, Rugby and Bilton. — A. F. J. GARDNER, Willows End, Charlecote, near Warwick.

PHYCITINAE (LEP.: PYRALIDAE) IN ESSEX. — An early specimen of *Ancylosis* (*Cabotia*) *oblitella* (Zeller) in an m.v. trap at this address was recorded in *Entomologist's Rec. J. Var.*, **88**: 180; further discussion of the status of this species in Britain has been published (*ibidem* **88**: 318, 333). Following the first specimen on 15th May, 1976, *oblitella* became common at m.v. light and by the latter half of June 1976 up to 40 specimens were appearing in the trap each night. Specimens exhibited considerable variation in colour: some were very dark grey, others sand-coloured (comparable with pl. 23, figs. 190-4 and 190-1 of *Microlepidoptera Palaearctica,* **4**). By mid-September

numbers had tailed off but specimens differed in colour from those of early summer, the pattern more variegated with a rusty medial fascia and brown basal fascia (comparable with pl. 23, fig. 190-2 of *Microlepidoptera Palaearctica,* **4**). The last, worn specimens of more than 800 *oblitella,* were seen at the end of September. My light trap is situated at the edge of fields with a great deal of *Chenopodium* (fat hen) and it is possible that this is the local foodplant of *oblitella*; although a search of the *Chenopodium* for larvae was unsuccessful, signs of old, possibly Phycitine, larval damage were found. Adult *oblitella* were quite common in the *Chenopodium* in late summer. There now seems to be little doubt that this is a locally abundant resident species in West Essex along Thamesside; its distribution extends some way inland from the marshes and appears to be widening.

More than a dozen specimens of *Euzophera cinerosella* (Zeller) came to light in Rainham in 1976, most in mid-June but one on 30th August. The larva, recorded from *Artemisia,* has not been found. — Dr. GADEN S. ROBINSON, 21 Lakeside, Rainham, Essex.

OBSERVATIONS IN 1976. — 1976 proved as noteworthy in Buckinghamshire as elsewhere, the effect of the fine weather on lepidoptera being to produce migrants, extra broods and unusual appearances throughout. The first indication of things to come was the profusion of *Cupido minimus* Fuessly at West Wycombe on 21st May; unlike Wild (*Ent. Rec.,* **88**: 260) I have always noted a second brood, at least partial, in this county and in Kent, and undoubtedly there was one on this occasion, though I was not in the area to observe it.

On 23rd May, *Vanessa atalanta* L. was seen for the first time, at Shillinglee, Sussex, while of the other migrants, all subsequently common, *Vanessa cardui* L. appeared in Hughenden Valley on 4th July, followed by *Macroglossum stellatarum* L. five days later. The two former species were both seen on arrival in the Isle of Eigg, Inverness-shire on 21st July.

On 28th June I arrived home pleased to have found a female *Lophopteryx cucullina* D. & S. in High Wycombe to be greeted by a triumphant "I've found a Hairstreak!" from my 11-year-old son. It proved to be *Strymonidia w-album* Knoch, found dying on the pavement; there are elms in the area, but the insect has not been previously recorded. Perhaps it had wandered some distance, for the hot weather was by now having its effect, and it was noticeable that *Maniola jurtina* L. was more common in the garden and visiting flowers more often than normal, while *Aglais urticae* L. had taken to flying in the cool of the evening. *Celastrina argiolus* L., not seen for several years, put in a welcome appearance at Habledon Lock on 18th July. After this I left for Scotland, where the weather was much less settled, but was able to observe *Erebia aethiops* Esp. in several 10 km. squares in the region around Loch Morar, from which it was previously unrecorded, along with other common species.

Back home again, a second brood female *L. cucullina* was taken at m.v. light (together with about 100 *Leucania pallens* L.) on 23rd August. It laid eggs which had hatched by 28th August and the larvae fed up rapidly on maple and sycamore so that all but three had pupated by 29th September. More unusually, on 27th August a fully-fed Nymphalid larva was found; it appeared to be *N. io* L. but the time of year seemed all wrong. Nevertheless, it pupated the next day and a Peacock indeed it proved to be when it emerged on 10th September—a very unusual second brood. — A. J. SHOWLER, 12 Wedgwood Drive, Hughenden Valley, High Wycombe, Bucks.

THE LIME HAWK (MIMAS TILIAE L.): DELAYED EMERGENCE. — I found a female Lime Hawk in a shop doorway in Colchester High Street in the early summer of 1974. On spec. I kept her overnight and from eggs laid, reared (on elm) 33 larvae which successfully went down. Six larvae I gave away when they were in their second instar, and these were reared and produced moths the following spring. From my batch only one emerged — a female — that year (1975). Unfortunately, all but nine were eaten during the year when a wood-mouse dug up the pupae, but these nine were salvaged and laid on soil in a small box and brought into a cool part of the house for safety. Nothing hatched in 1976. Despite having damped them down periodically, I finally decided that they were not going to hatch and more or less forgot about them except for a very occasional damping. The last time this was done was yesterday when I discovered that four were still alive and actively moving (10th January, 1977). I have had Privet Hawks (*Sphinx ligustri* L.) remaining two winters in the pupal stage, but I cannot help wondering whether anyone else has had the three years' time lag from ova that I have experienced so far with this batch of Lime Hawks. — K. R. CRAWSHAW, Willow Farm, Turkey Cock Lane, Daisy Green, Loxden Heath, Colchester, Essex.

EVERGESTIS EXTIMALIS SCOP. IN S.E. LONDON. — Though my friend Mr. Chalmers-Hunt tells me this formerly uncommon Pyralid has become much less so of late, a record for the metropolitan area (of which I have seen none hitherto) may, possibly, be worth committing to print. A whitish moth caught fluttering at my study window here on the night of 5th August, 1976, proved unexpectedly to be a worn example of *E. extimalis* —the species never before having come my way. Its cruciferous foodplants are doubtless fairly general, but rather seldom seen in these parts; and since Beirne (1952, *Brit. Pyr. & Plume Moths*: 134) tends to associate it with chalk downs and cornfields, I think the Charlton moth had probably flown some distance. — A. A. ALLEN, 49 Montcalm Road, Charlton, London, SE7 8QG.

M.V. RECORDS FOR 1976. — Reading the interesting article by Mr. E. H. Wild in the October *Record* prompts me to relate my own experiences in 1976 in the garden m.v. trap which has been worked regularly since 1966 when I ceased to collect

further afield. The following are species which showed the greatest increases:

	1976 Totals		*12-year Average 1964-1975*
Laothoe populi (L.)	117	continuous	69
Chaonia ruficornis (Hufn.)	29		6
Euxoa nigricans (L.)	471		82
Agrotis puta (Hbn.)	1,668	1st Gen. 327 2nd Gen. 1,341	122
A. exlamationis (L.)	19,304	1st Gen. 18,242 2nd Gen. 1,062	2,608
Axylea putris (L.)	645		252
Noctua pronuba (L.)	9,413	(15,134 in 1973)	6,385
Polia nitens (Haw.)	173		37
Leucania pallens (L.)	11,508	1st Gen. 5,120 2nd Gen. 6,388	2,342
L. lithargyria (Esp.)	426		260
Aporophyla nigra (Haw.)	356	(412 in 1973)	185
Xylocampa areola (Esp.)	36		12
Omphaloscelis lunosa (Haw.)	165		24
Tiliacea aurago (D. & S.)	424		107
Apatele alni (L.)	17	(21 in 1964)	5
A. psi (L.)	208		55
Amphipyra pyramidea (L.) *A. berbera* (Rungs)	136		24
Apamea sordens (Hufn.)	401		145
A. monoglypha (Hufn.)	3,035		1,440
Luperina testacea (D. & S.)	1,206		263
Eremobia ochroleuca (D. & S.)	150		23
Thalpophila matura (Hufn.)	40		5
Caradrina morpheus (Hufn.)	164	1st Gen. 119 2nd Gen. 45	37
C. alsines (Brahm)	1,080		488
Oria musculosa (Hbn.)	59		13
Pseudoips prasinana (L.)	7		0.33
Lithosia lurideola (Zinck.)	864		107
L. complana (L.)	322		19
Cycnia mendica (Clerck)	91		34

The number of macros in the trap, which excludes the numerous dead and dying in a deep mass of scales on the floor of the trap, from 21st June-4th July, was 23,843, an average of 1,703 per night, with a maximum of 2,882+ and a minimum of 1,121. These 1,000+ nights are of little use from a collecting point of view as almost all the insects get damaged.

Curiously enough, a few species had a bad year. *Apamea secalis* (L.) (1976 total, 1,915; 12-yr. average, 2,350). *Amathes c-nigrum* (L.) 1976 total, 1,464; 12-yr. average, 5,481). *Ochropleura plecta* (L.) (1976 total, 289; 12-yr. average, 855). *Diarsia rubi* (View.) (1976 total, 735 (1st gen., 437; 2nd gen., 298); 12-yr. average, 1,950). — C. H. Dixon, Northbrook Farm, Micheldever Station, Hampshire.

A Small Tortoiseshell in the Tyrol in December. – I was surprised to see a Small Tortoiseshell (*Aglais urticae* L.) active at about 12.20 p.m. on the 23rd December, 1976 in the village of Obergurgl (1,930 m., 6,330 ft.) in the Oetztal of the Austrian Tyrol. It was basking in bright sunshine in a warm corner formed by a house and shed, but made one flight of a few yards while I was watching. At this time there was about a foot of snow in the village, which is a popular ski resort. I have no record of the shade temperature but it must have been close to freezing. — A. J. M. Heselden, 81 Hoxeth Hill, Harrow-on-theHill, Middlesex.

Ancylosis oblitella Z. in Gloucestershire. — On 21st September, 1976, I had a fresh specimen in my home actinic light trap. Dr. J. D. Bradley kindly determined the specimen for me. I understand the species has been unusually common in its Essex haunts this year, but it has not been recorded before from Gloucestershire. — J. Newton, 11 Oxleaze Close, Tetbury, Glos.

Macroglossum stellatarum L. and Agrius convolvuli L. in S. Devon in 1976. — One *M. stellatarum* in m.v. trap on 17.vii and the following daylight sightings: 3.vii, 11.viii, 4.ix, 19.ix, 20.ix, all feeding on valerian at the north end of Slapton Sands. Captures of *A. convolvuli* in the m.v. trap were: 24.viii (2), 25.viii (1, a recapture from previous night), 26.viii (1), 30.viii (1), 31.viii (1), 2.ix (1). Total, six different moths, all males. — H. L. O'Heffernan, 3 Coombe Meadows, Chillington, Kingsbridge, S. Devon.

Purple Emperors and other Butterlies on Bookham Common, Surrey in 1976. — Dr. Geoffrey Beven of Esher has sent me a most illuminating list of butterflies observed on Bookham Common during the fabulous summer of 1976. Most notable among these was *Apatura iris* L., the Purple Emperor, seen on 30th June by the keeper, Mr. Nigel Davies, and a female the following day also round his cottage. On 2nd July another male was seen on a dry road by Mr. Tim Knight. Mr. Davies saw a further male on 25th July and Miss E. M. Hillman another specimen on 7th August. The White Admiral was quite abundant, the first being observed on 23rd June; Mr. Davies counted at least 30 on 24th July along a woodland ride, while Mr. Hugh Baillie found a fresh specimen on 5th September, evidently a second emergence which is very rare in this species. Mr. Alan Wheeler reported an example of ab. *valezina* or *Argynnis paphia* L., which species was also very plentiful. This form of the female has seldom been seen in Surrey. Other butterflies of interest on the Common were a *Strymonidia w-album* Knoch on 2nd July, many Ringlets throughout July and an abundance of *Maniola tithonus* L. in early August. Six Commas were observed feeding on blackberries on 12th September. — C. G. M. de Worms, Three Oaks, Woking.

LEPIDOPTERISTS IN KENT

A meeting will be held at the Maidstone Museum on Saturday, 23rd April, 1977, at 6.30 p.m., for all those interested in the Butterflies and Moths of Kent. All readers of *The Entomologist's Record* will be welcome. There will be no charge. Small exhibits will be appreciated.

Eric Phips, Natural History Department,

Maidstone Museum and Art Gallery, St. Faiths Street, Maidstone, Kent

AN ECOLOGICAL STUDY OF THE WOOD WHITE

The Wood White butterfly, *Leptidea sinapis* (L.), is usually, though not always, associated with woodland and occurs in parts of southern and western Britain. Although the distribution is patchy, the species is often abundant locally, making it especially suitable for a population study for which I have recently been awarded a grant from the Natural Environment Research Council. The basis of the project will be a detailed investigation of the factors determining its abundance, with particular emphasis on the potential for habitat management to help to ensure its survival in an area.

The value of this project will be greatly enhanced by the knowledge of local entomologists, and it would be greatly appreciated if those who are familiar with the butterfly, either in Great Britain or abroad, would contact me. In particular, I would be interested in details of extinctions, introductions or natural colonisations as well as site details such as habit-type, larval foodplant species, and the timing and length of each brood. Details of localities will, of course, be treated in strict confidence should that be requested.

Martin Warren, Monk's Wood Experimental Station,

Abbots Ripton, Huntingdon PE17 2LS

THE PROFESSOR HERING MEMORIAL RESEARCH FUND

The British Entomological and Natural History Society announces that awards may be made from this Fund for the promotion of entomological research with particular emphasis on: —

(a) Leaf miners,
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in the above order of preference, having regard to the suitability of candidates and of the plan of work proposed.

Awards may be made to assist travelling and other expenses necessary to field work, for the study of collections, for the attendance at conferences, or exceptionally, for the costs of publication of finished work. In total they are not likely to exceed £200 in 1977/78.

Applicants should send a statement, if possible in sextuplicate, of their qualifications, of their plan of work, and of the precise objects and amount for which an award is sought, to A. M. Emmet, M.B.E., T.D., M.A., F.L.S., F.R.E.S., Hon. Secretary, Labrey Cottage, Victoria Gardens, Saffron Walden, Essex, CB11 3AF, as soon as possible, and in any case not later than 30th September, 1977.

EXCHANGES AND WANTS

Wanted. — The following volumes on Lepidoptera would be greatly appreciated:

1. Bryan. P. Beirne. *The British Pyralid and Plume Moths.*
2. L. T. Ford. *A Guide to the Smaller British Lepidoptera.*

Please write, stating condition and price to: *D. C. Paddock,* 1/5 West Holme, Garrison Lane, Small Heath, Birmingham, B9 4NJ.

For Sale. — Separates of Col. Emmet's "Notes on the British Nepticulidae". Unbound, with printed paper cover. Price 90p, including postage. — Apply to *P. A. Sokoloff,* 4 Steep Close, Orpington, Kent, BR6 6DS.

For Sale. — We hold a few copies of a large number of separates of papers that have appeared in the *Record.* These are available at reasonable prices. — Please advise your requirements to: *P. A. Sokoloff,* 4 Steep Close, Orpington, Kent, BR6 6DS.

THE ENTOMOLOGIST'S RECORD
AND JOURNAL OF VARIATION

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

TO OUR CONTRIBUTORS

All material for the TEXT of the magazine as well as books for review must be sent to the EDITOR at St. Teresa, 1 Hardcourts Close, West Wickham, Kent.

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CONTENTS

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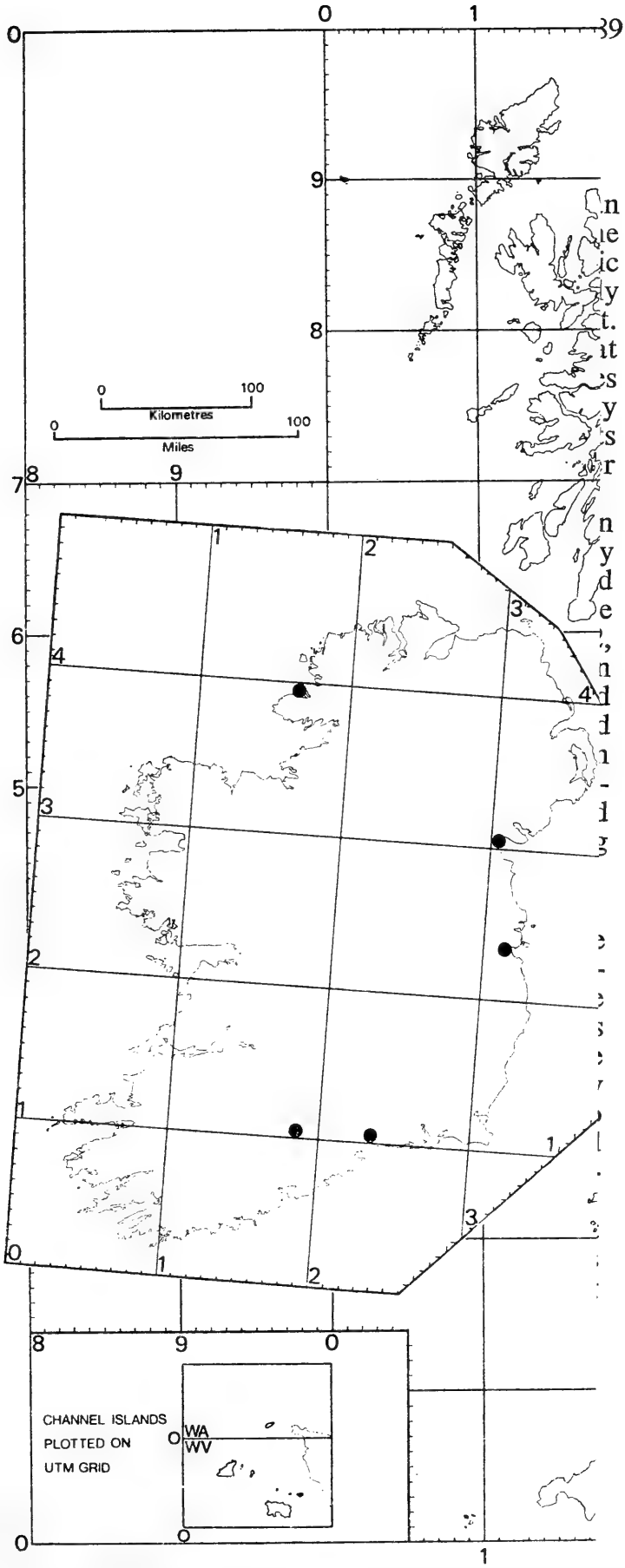

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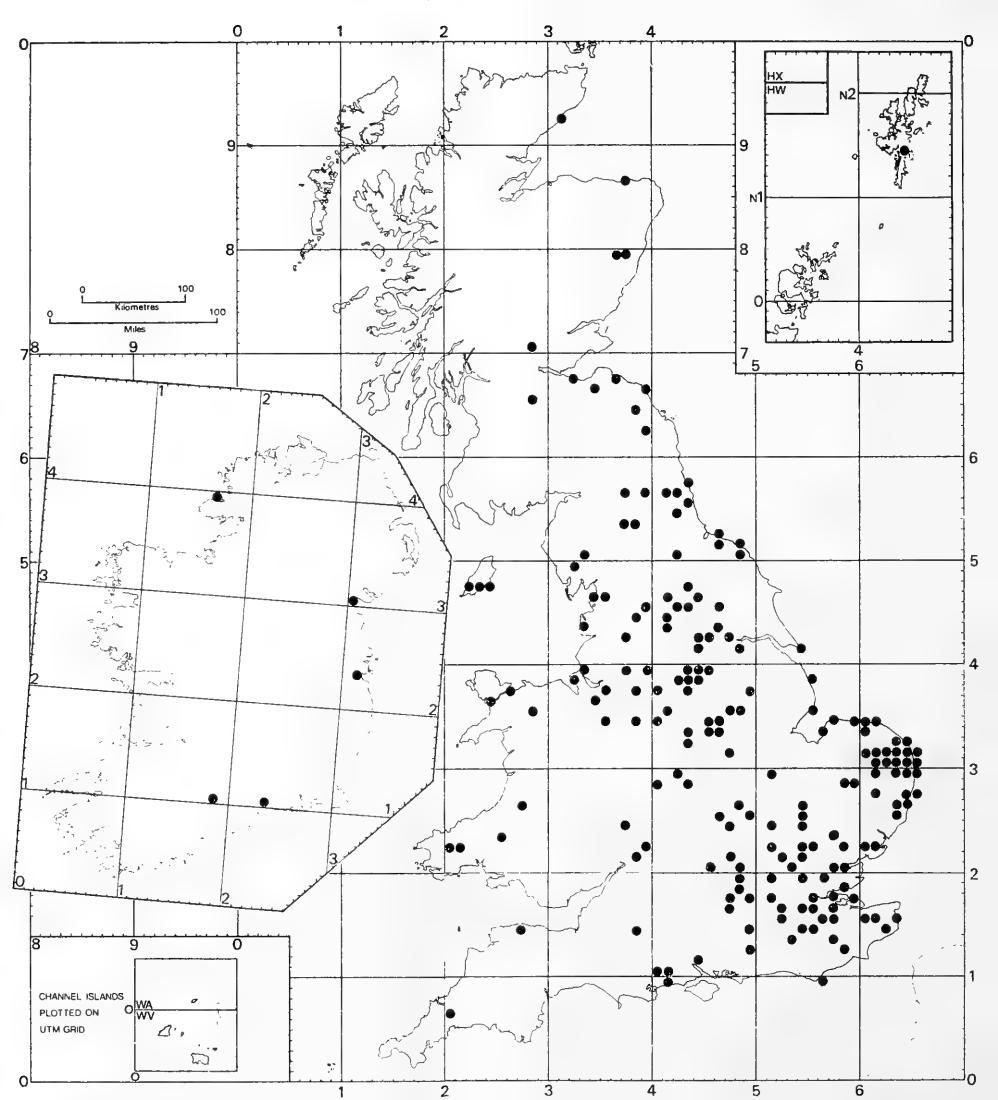

The recorded distribution of the Camberwell Beauty in 1976.

The 1976 Invasion of the Camberwell Beauty (*Nymphalis antiopa* L.)

By J. M. Chalmers-Hunt[1]

Status and brief history

The status in Britain of this superb butterfly is that of an immigrant from Scandinavia which occasionally passes the winter here hibernating as an imago. Though always of erratic appearance, it is seen somewhere nearly every year, usually singly and more often along the east than the south coast. There is no evidence whatsoever that any stage except that of the imago has ever occurred in Britain, and as the species does not pair until spring, it is believed the butterfly only migrates here in summer or autumn and that the few adults that survive the comparative warmth and damp of our winter are so widely scattered that they fail to find a mate.

First noticed in this country in 1748, when two were taken in Cool Arbour Lane, near Camberwell, it was subsequently noted as relatively common in 1789, 1793, 1846, 1872 and 1880, while about 1820 large numbers were found on the sands of the Durham coast washed up by the tide. In 1872, the *annus mirabilis,* 436 were recorded of which more than 150 were captured, and in the following spring a few appeared in January, March and April that had doubtless hibernated here. Between 1880 and 1975, the highest number noted in any one year was 52 in 1947, an exceptional year for immigrants, but as many imported *antiopa* were deliberately released in Britain during the 1930s and 1940s much of the recording of this species at that time was rendered worthless.

Review of its occurrence in 1976

The glorious summer of 1976 was exceptionally favourable for many kinds of lepidoptera,[2] but the most remarkable feature of the season was by far the largest invasion of the Camberwell Beauty in living memory, and in point of numbers only second to that of 1872. However, whereas in 1872 the butterfly seems to have been restricted to Scotland and mainly the eastern half of England, its range in 1976 extended to Wales, Scotland, the Isle of Man and Ireland, and in England it was reported from every county except Somerset and Hereford.

The butterfly was first seen in 1976 on February 26th at the R.S.P.B. reserve at Snettisham, Norfolk, where one was noticed flying near a hide and later settled in an adjoining meadow. Mr. L. T. Hall and his son Adrian approached it closely and observed that though it could fly well, it "was slightly tattered and had possibly been attacked by a bird". The early date indicates that this specimen had successfully hibernated in this country, having arrived here sometime in 1975.

[1] 1 Hardcourts Close, West Wickham, Kent, BR4 9LG.

[2] Including the Clifden Nonpareil (*Catocala fraxini* L.), Great Brocade (*Eurois occulta* L.) and Golden-rod Brindle (*Lithomoia solidaginis* Hbn.); three north European migrant moths whose appearance here in 1976 may be correlated with that of the Camberwell Beauty.

The first of the 1976 immigrants was seen by Mr. Peter Marsh at Great Yarmouth at about 1 p.m. on June 27th. Mr. Marsh tells me that he was walking northwards along the tide-line when to his astonishment the butterfly passed within a few feet of him flying in the same direction. There are four reports for July, of which the first is of one seen on the 3rd near Petworth, Sussex, by Mr. G. J. Mapplebeck; followed by a worn specimen on the 9th, sighted by Mr. P. J. Edwards at 1.45 p.m. on a buddleia just north of High Street, Brentford, Middlesex. On the 18th, Mrs. T. G. Scott noted one in the Shetlands at Gardie on the Isle of Bressay, and a fourth example at Godalming, Surrey, was reported in *The Times* of 4.ix.76, but the date and circumstances of this sighting were not stated.

There are about fifteen reports of the butterfly for the period August 1st to the 19th (including four on the 15th), leading up to the main influx which occurred between August 20th and the 25th, when altogether more than 100 sightings were recorded. Thereafter the insect was noted on most days until the end of September, with several being seen in October. Finally, on November 13th, one was captured in a house at Booterstown, Dublin, and another seen on the same date at Orpington, Kent, fluttering near some ivy that had been cut back; in both these cases the butterflies had probably been disturbed during hibernation.

Many of those noticed were feeding on fallen fruit or at the blossoms of various plants, especially buddleia; but at Poulner, Hants., a farmyard manure heap proved to be an attraction, and at Newmains, Berwickshire, one was watched imbibing sap oozing from an ash that had had the bark eaten off by a goat. The only instance to my knowledge of one seen at night is of a specimen taken at Reydon, Suffolk, at 11 p.m. while at rest on a flagstone beneath a lighted window. Whether this individual had been attracted to the light, however, is questionable since unlike the Red Admiral (*Vanessa atalanta* L.) and certain other Nymphalidae, the Camberwell Beauty is not known to be nocturnal.

A comparison of the numbers taken 1872 with those of 1976 reflects the current conservation trend. Although at least 150 specimens were captured in 1872 and more than one-third of the total number recorded that year, in 1976 only about 35 were taken of the some 270 seen. This limitation on collecting has probably resulted in occasionally the same specimen being reported more than once, but on the other hand may have increased the likelihood of the insect appearing in the spring of 1977.[3] Thus, I would be most interested to hear of any being seen this year after hibernation, and particularly of any captures that are being kept alive. Should the opportunity arise, I think the chance should not be missed of arranging pairings between British caught specimens, and I would be glad to act as a "marriage bureau" in this respect.

[3] Though one wonders if any will survive the past winter, said to be one of the wettest on record.

The colour of the border in 1976 specimens

In freshly emerged *antiopa* the borders of the wings vary from yellow (fading to whitish in hibernated specimens) to white. In the latter, the scales at the edges of the wings are curled and devoid of pigment, a condition that Cockayne (1921) found to be present in most of the examples taken in this country. Cockayne suspected this scale defect to be particularly common in Scandinavia,[4] which would account for its frequency here and the ancient but erroneous belief that a white, instead of a yellow, border characterised a genuine British Camberwell Beauty.

Only a few observers specified the colour of the borders of the 1976 immigrants, so that it is not possible to give an assessment of the relative number of the different forms. However, both white and yellow bordered varieties were present among those recorded.

In the Guildford and Shropshire specimens the borders were pale cream, and Mr. Firmin describes the border of the Wix, Essex example as being of a "clear yellow". The Spurn Head, Yorks. *antiopa* of September 26th had the border "golden yellow", and in that of the Southampton one it was of an "ochre shade".

Mr. Stockley states that the two Wiltshire examples had white borders, adding significantly that one was "very perfect". Both the Durham City and Dorset butterflies had distinctly white borders; and Sir Geoffrey Eley wrote that in the Great Yeldham, Essex *antiopa,* the border was "white with no trace of yellow".

Meteorological analysis and selected backtrack trajectories

I submitted the 1976 records to Mr. Peter Davey, on the basis of which he produced the accompanying diagrams (figs. 1, 2 and 3) and made the following investigation to see if there was any relationship between the arrival of *antiopa* and the weather conditions at the time, particularly in regard to surface wind speed and direction.

The weather was basically anticyclonic over the ten-week period of analysis (27th June to 31st August). A centre of high pressure to the north-west of Britain for the first two weeks gave N.E. turning to E. to S.E. winds and the first three *antiopa* were seen at this time. By mid-July the high to the east had declined, allowing a temporary disturbance to run east across Britain and in turn to be followed by a building ridge of high pressure to the west. This sequence of events veered the wind all the time through S.W. to W., and finally N.W. in the fourth week of July. One *antiopa* was seen during this period, and this in Shetland, the most northern of all the sightings, and the first of only six records north of 55 N. There were two further records in the first week of August as the high to the west continued to intensify and move north-east, veering the wind from N.W. to N. By the second week

[4] Williams (1958: 18) states that "specimens from Scandinavia have a paler border than those from southern Europe".

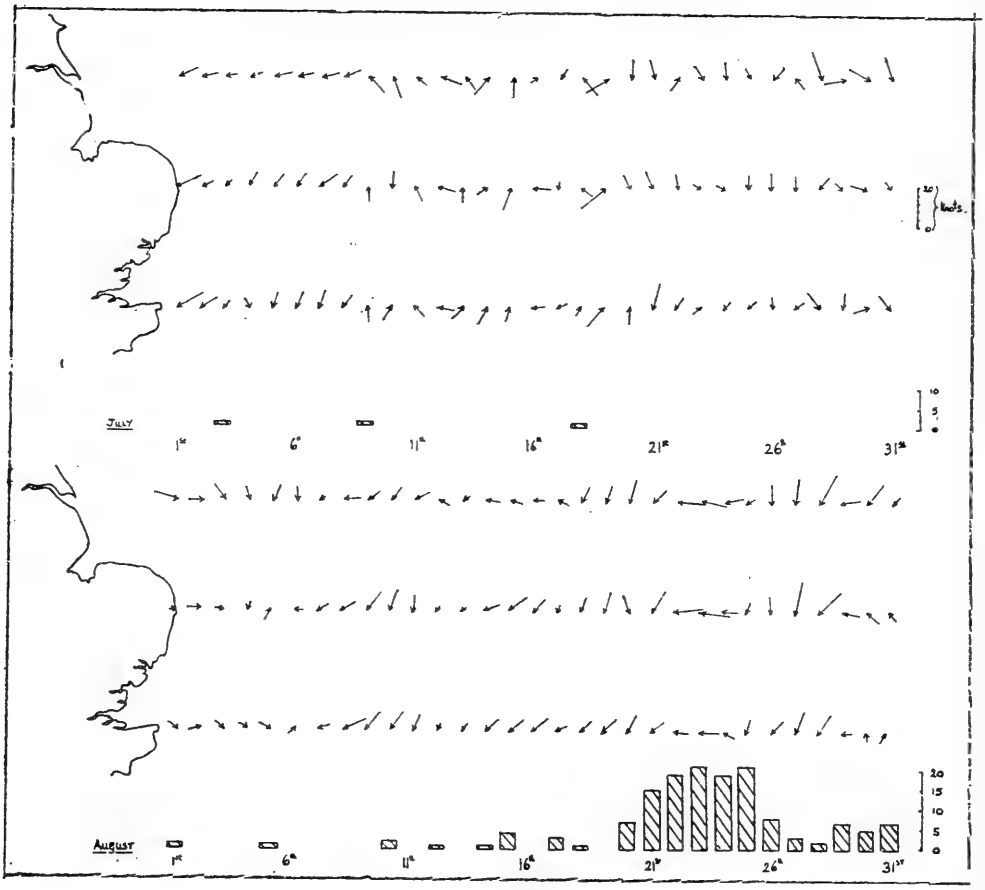

Fig. 1. Mean wind components for Kilnsea, Yorkshire; Gorleston, Norfolk; Manston, Kent respectively, for period 1st July-31st August against histogram of *N. antiopa* totals.

the high had become firmly established to the north of Britain, causing the surface winds to blow continually from between north and east for the remaining three weeks of August, and during this time some 156 *antiopa* were reported.

Fig. 1 depicts meaned wind components for three east coast meteorological stations for every day of the analysis period. On the same time scale, beneath the winds, is a histogram of daily totals of *antiopa.* (The mean comprises four observations, taken at 00, 06, 12 and 18.00 hours G.M.T.)

Fig. 2 shows a meaned surface pressure field that covers the period 20th to 26th August, a week in which just under half of all sightings were made. The weather pattern during this week changed little, with continuous flow of air from Scandinavia over all parts of England and Wales. (The map was formed by taking 24 actual surface pressure readings at midnight and midday on each of the seven days from a five degree interval grid with limits 60 N-45 N and 5 W-20 E.)

To obtain some idea from where the butterflies came, Mr. Davey used a method of backtracking certain individuals

having regard to surface wind speed and direction. This method involved computing the wind component at the capture point, multiplying the resultant vector by six hours, and the new point at the end of the vector would be the theoretical position of the insect six hours earlier. This process he repeated until a complete trajectory was formed.

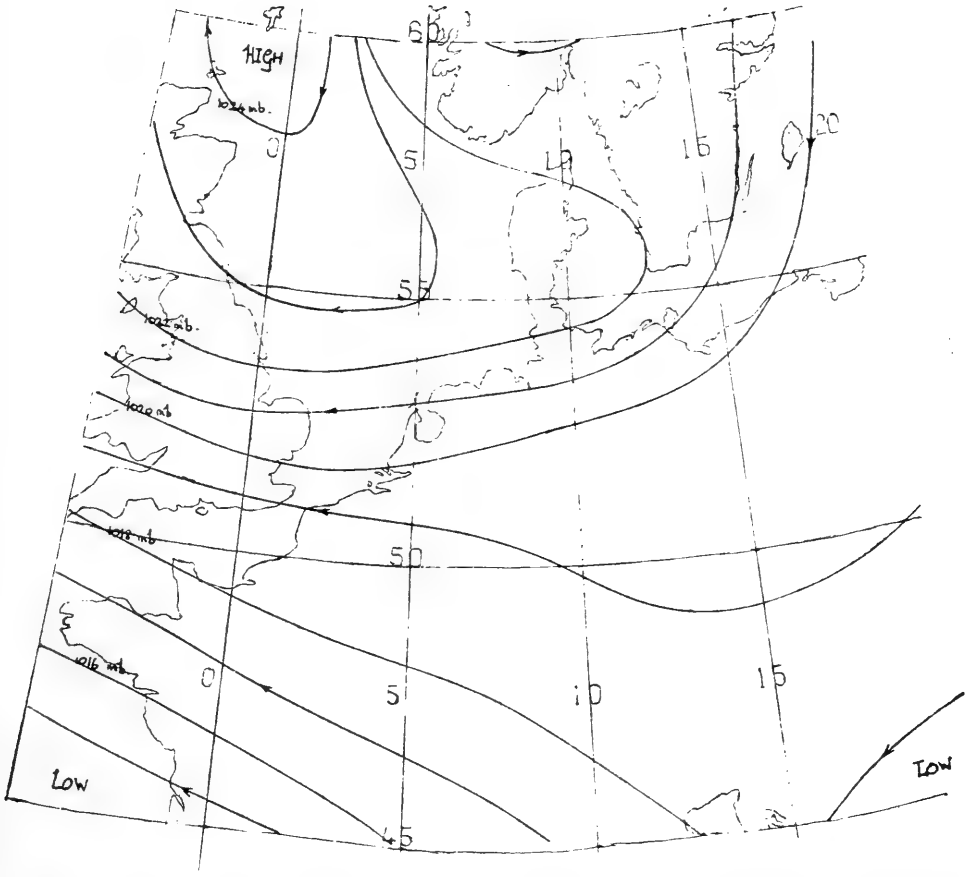

Fig. 2. Mean surface pressure for the period 20th-26th August, indicating north-easterly flow over much of England.

Mr. Davey chose the first, second and third *antiopa* (i.e. those seen on June 27th, July 3rd and 9th) as individuals most likely to have flown non-stop from a place of origin, because theoretically the later the record the more difficult it would be to backtrack solely with respect to wind. A fourth *antiopa* seen on August 22nd he backtracked as an example of the main influx, and this may be compared with fig. 2. These four trajectories are superimposed in fig. 3, where the insect in each case is assumed to have random orientation and speed, and this may be equated with a zero flight component with respect to the wind.

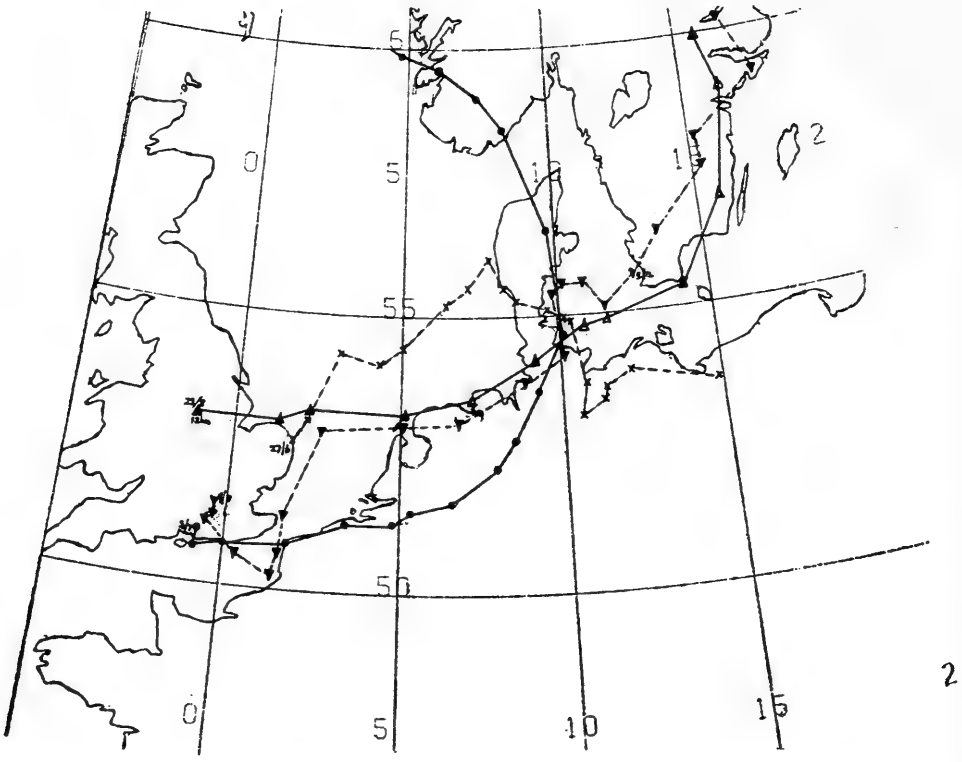

Fig. 3. Four backtracked trajectories; interval of time between points six hours. (a) Great Yarmouth, 27/6/76, @ 12.00. (b) Petworth, 3/7/76, @ 12.00. (c) Brentford, 9/7/76, @ 12.00. (d) Newark, 22/8/76, @ 12.00.

A note on the occurrence of the Camberwell Beauty in 1976, in Holland, Denmark and Norway

The Camberwell Beauty is not as common in these countries as might be supposed. It is very much scarcer in Holland than formerly, but as in the great *antiopa* year of 1872,[5] it made a notable appearance there last year, and Mr. B. J. Lempke kindly wrote me that in 1976 "a very small part of your migration was also observed here". He particularly cites one on August 23rd at Nunspeet in Gelderland, which was the first *antiopa* the observer had seen in fifteen years, and another that was taken on August 24th near Amsterdam where it is not known to be resident.

I received a most informative letter from Mr. Ebbe Schmidt Nielsen in which he says that *antiopa* appeared to be unusually common in Denmark in 1976 in the area where it is resident. He says the species is only resident in E. Denmark, but that during August and September many specimens occurred in W. Jutland where it has only been seen a few times in the past ten years. He went on to say that on August 22nd, he himself saw four specimens at

[5] Snellen (1873) recorded that though usually extremely scarce in Holland, in 1872 it occurred there in extraordinary numbers.

Skallingen, west of Esbjerg, and this he would accept as constituting a migration as no further examples were seen there during August. He also said that the insect was observed at Mors in north-west Denmark.

Mr. M. Opheim tells me that in 1976 the butterfly was more numerous in Norway than usual, at least in the Oslo district of Telemark. And Mr. Henry Lee writes that in 25 years collecting butterflies in Norway, the most he had seen till last year was about 30 specimens, but that in 1976 he saw 250 there! These included three in the garden of the Royal Palace, Oslo; but at Tyri Fjord, about 50 miles to the north-west, it was relatively abundant and on one occasion he counted six at the same time feeding on apple cores lying on the ground.

The 1976 records arranged alphabetically under counties and chronologically within them

BEDFORDSHIRE. Holme Mills, Broom, August 21st, "at about 2 p.m. lying on the roadside, it seemed moribund so it was killed and set" (Dr. Nancy Dawson). Harrold, August 23rd, one "spent the whole day in my garden, most of the time on the flowers of a buddleia bush . . . the insect alighted on my hand". "A friend in the village also had a Camberwell Beauty in August" (J. R. Waller).

BERKSHIRE. Maidenhead, August 18th-21st, on rotting apples (Elizabeth Sheffield *per* D. J. Carter). Reading, August 22nd, "flying around a bush of lavender about 2 p.m." (Mrs. O. Stemp *per* B. R. Baker). Windsor, October 12th, ♀ caught in a bag by a lady who saw it on the fence at the end of her garden and then gave it to a collector, Brian Rich (Dr. P. Willcox *per* Baron C. G. M. de Worms).

BUCKINGHAMSHIRE. Bourne End, August 17th, feeding on buddleia (Prof. J. D. Gillett). Stony Stratford, August 29th, two seen in a garden feeding on valerian (G. E. Higgs). High Wycombe, no date, seen in a car park by Victor Bryant (*Bucks Free Press,* 22.x.76 *per* J. D. Pearse) (possibly that recorded in *The Times,* 4.ix.76). Near Amersham Hill, High Wycombe, September (*Bucks Free Press,* 1.x.76 *per* J. D. Pearse). Loudwater, near High Wycombe, September (*Bucks Free Press,* 1.x.76 *per* J. D. Pearse). High Wycombe, October 10th, captured in the municipal offices (W. J. Beer). Quainton, November 6th, taken by Mrs. Barker from a pile of wood collected for the village bonfire and determined by V. Scott (Miss J. Royston). Near Wendover, lower slopes of Coombe Hill, no date (Chesham and district N.H. Soc. *per* Miss J. Royston).

CAMBRIDGESHIRE. Cambridge, August 1st (Dr. S. M. Pumphrey). Trumpington, August 5th, seen by M. Boddy (Dr. E. A. Ellis *per* R. A. French). Cambridge, August 22nd (Patricia R. Stubley *per* J. Heath). Cherry Hinton, August 28th (Mrs. G. Crook *per* D. J. Carter). Girton,

September 6th, seen by Mr. Boot (Dr. E. A. Ellis *per* R. A. French). Pampisford, September 7th, feeding on buddleia, seen by Mrs. Simpson (B. O. C. Gardiner). Cambridge, September 8th, seen by R. Parker-Rhodes (Dr. E. A. Ellis *per* R. A. French).

CHESHIRE. Heswall, Wirral, Merseyside, August 21st (Groves, *Ent Rec.*, **88**: 266). Prestbury, August 22nd, on buddleia, seen by Mrs. Ross (I. Rutherford). Upton-by-Chester, August 24th-26th, seen by R. Willis (T. Hose). Kingsley, near Frodsham, August 25th, on rotting pear, taken by T. R. Lemon (I. Wallace).

CORNWALL, Lanhydrock Park, near Bodmin, August 27th, seen at 9 a.m. (M. Davey).

CUMBERLAND. Moorhouse Farm N.N.R., near Garrigill, August 27th (J. Parkin *per* T. C. Dunn).

DERBYSHIRE. Chesterfield, August 15th (Miss Robinson *per* F. Harrison). Derby, August 22nd (Dr. R. H. Lavelle *per* J. Heath). Hackenthorpe, August 22nd (C. Plunket *per* D. Whiteley). Dronfield Woodhouse, Sheffield, August 25th (Mrs. Edees, in Harrison, *Jnl. Derbyshire ent. Soc.*, Sept. 1976). Buxton, in Memorial Garden, August 26th (V. Pearson *per* F. Harrison).

DEVON. Lynmouth, August 22nd, "flying along the almost dried up watercourse of the River Lyn, and settled on a willow growing actually in the river" (L. R. Denman).

DORSET. Ferndown, Wimborne, August 21st-22nd, "borders white not yellow" (R. Roberts).

DURHAM. Sunderland, August 25th, one injured found in Fawcett Street by F. Smith, specimen in Sunderland Museum (P. Davis). Near Grass Hill, Harwood-in-Teesdale, September 5th (S. Hodgson *per* T. C. Dunn). Durham, September 7th, borders "white and not ochreous" (Mrs. R. Sinclair).

ESSEX. Chappel, near Colchester, August 17th (Firmin, *Ent. Rec.*, **88**: 303). Maldon, about August 20th, one photographed by Mr. and Mrs. P. J. Hawkins (G. A. Pyman). Broxted, August 20th (J. J. Burton, *The Field*, 2.ix.76, p. 476). Colchester, August 21st-22nd (Firmin, *loc. cit.*). Alresford, near Colchester, August 22nd (Firmin, *loc. cit.*). Southend, August 23rd (Pyman, *Ent. Rec.*, **88**: 304). Ingrave, near Brentwood, August 23rd (Pyman, *loc. cit.*). Galley Wood, Chelmsford, August 24th, one seen by Richard Daniel in his garden (Baron C. G. M. de Worms). Wix, near Harwich, August 24th, borders "clear yellow" (Firmin, *loc. cit.*). Great Yeldham, near Halstead, September 3rd, "border 'white' with no trace of yellow" (Eley, *Ent. Rec.*, **88**: 336). Harlow, September 5th, one photographed by G. Harvey (V. Veal and G. A. Pyman *per* J. Firmin). Loughton, September 7th (D. J. Carter). Danbury, late summer, one "sunning itself on a tyre in a garden" (Mrs. G. Howes *per* G. A. Pyman).

GLOUCESTERSHIRE. Gloucester, about August 24th, taken

in a garden in the city by William Proctor; it was so fresh it was thought to have been an escape and so was released (*Gloucester Citizen,* 25.viii.76). Golden Valley, September 28th, one seen flying from a patch of ivy by Dr. A. Chapel (Austin Richardson).

HAMPSHIRE. Maybush, Southampton, August 22nd, one "in pristine condition . . . the wings bordered with an ochre shade . . . absorbing juice from an over-ripe pear", seen by Mrs. M. F. Athersuch in her garden (Dr. C. J. Luckens). Ringwood, August 25th, seen by Miss E. Prett (W. E. Collinson). Eversley Cross, August 25th, seen by A. G. Leuchars (B. Goater *per* R. A. French). Hinton St. Michael, Christchurch, September 3rd (Miss P. Jenkins *per* D. J. Carter). Poulner, near Ringwood, September 16th, seen by John Broughton flying round a farmyard manure heap (W. E. Collinson).

HERTFORDSHIRE. Bishops Stortford, August 20th (R. W. Stroud *per* J. Heath). Little Hadham, September 1st (*The Times,* 4.ix.76). Hitchin, September 3rd, seen by Mr. Seabrook (R. A. French). Wormley, September 3rd-4th, one on fallen apples seen by Lady Rawlings (Beazley, *The Field, per* Miss H. Milligan). Tewin, September 12th, fairly worn specimen seen by Mr. Davey in a greenhouse (T. W. Gladwin). Digswell, September 26th, one disturbed from a wood pile in a shed, possibly the same as one seen flying about the garden 2-3 days earlier (F. J. Martin Dent). Digswell, September 26th, one settled on a picture in Mr. Davies' house and seen by T.W.G. (T. W. Gladwin). Digswell, October 17th, feeding on wild thyme in T.W.G.'s garden (T. W. Gladwin).

HUNTINGDONSHIRE. Alwalton, near Peterborough, September 3rd (Guthrie, *Ent. Rec.,* **88**: 336).

KENT. Maidstone, August 8th, seen by J. Snellgrove (Philp, *Ent. Rec.,* **88**: 304). Middle Wood, Shoreham, August 23rd (Aston, *Ent. Rec.,* **88**: 255). Cranbrook, August 23rd (Mrs. J. Oldaker *per* Philp, *Ent. Rec.,* **88**: 304). Wickham Pit, Strood, August 23rd, seen by R. H. Appleton (R. Foord). Canterbury, August 24th, seen on buddleia by A.E.H. (Mrs. A. E. Harvey). Four Elms, Edenbridge, August 25th, Polard's Farm where the farmer saw one (Ray Clarke *per* K. G. W. Evans). Walmer, August 30th, settled on a hydrangea then seen to feed on a rotten plum (D. C. Wynn). Castle Hill, Tonbridge, August 30th (D. G. Everett, *The Field,* **249**: 757 *per* Miss H. Milligan). Cliffe Marshes, September 1st, feeding at *Aster tripolium* (Philp, *loc. cit.*). Temple Ewell, September 2nd, one feasting on rotting blackberries at 4 p.m., seen by J. Chambers (R. Chambers). Mereworth, September 7th, ♀ flying in a pear orchard at 2 p.m. and caught by I. Edwards (P. E. Smart). Orpington, September 7th, seen by S. Boucher (Sokoloff, *Ent. Rec.,* **88**: 293). Dartford, September (first week), one seen twice (Mrs. Valerie L. Pike *per* D. J. Carter). Cran-

brook, September 8th, seen on a rotten apple by T. Seward (Philp, *loc. cit.*). Minster, Sheppey, September 20th, seen 1 mile from the sea (G. N. Burton *per* J. Heath). Orpington, November 10th (Mrs. M. Ferguson *per* Brown, *Ent. Rec.,* **89**: 54). Sandwich, date and observer's name not stated (*The Times,* 4.ix.76).

LANCASHIRE. Foulridge, near Colne, August 12th, in a garden (J. Thompson *per* A. Brindle). Poulton, near Kirkham, Blackpool, August 15th (A. Priddy *per* J. Heath). Broughton Mills district, Duddon Valley, August 18th (J. Voicey *per* J. Briggs). Hest Bank, Morecambe, August 20th-22nd, on buddleia in her garden (Mrs. N. Nicholson *per* J. Briggs). Patricroft, Eccles, August 21st, photographed by C. R. Whitfield (E. Hardy, *Liverpool Daily Post,* 3.viii. 76; I. Rutherford). Over Kellett, near Carnforth, August 25th, on buddleia (Mrs. E. Watterson *per* J. Briggs). Ashton-under-Lyne, August 26th, one seen by Mrs. Arda in a garden between Bardsley and Waterloo (L. N. Kidd *per* A. Brindle). Millwood, Rishton, August 30th, one seen by D. Jackson (A. Creaser). Mossley Hill station platform, Liverpool, August (fourth week), seen at flowers (E. Hardy).

LEICESTERSHIRE. Melton Mowbray, September 7th, seen by J. Beaver (R. A. French).

LINCOLNSHIRE. Sandilands, Sutton-on-Sea, August 22nd, one captured on the sea-wall by Mrs. P. Fletcher and given to S.L.S. (Dr. S. L. Sutton). Gibraltar Point, near Skegness, August 23rd, one in the Heligoland bird trap, taken and released by the warden,, B. Wilkinson (Dr. R. E. M. Pilcher). Sutton-on-Sea, August 24th, at 10.15 a.m., one sunning itself on a gravel path, rather small with pale borders and perhaps worn, seen by Canon Houlden in his garden (Dr. R. E. M. Pilcher). Sutton-on-Sea, August 24th, a second "much larger and brighter" specimen settling on herbaceous border flowers seen by Canon Houlden (Dr. R. E. M. Pilcher). Lincoln, September 10th, one captured in the city (J. E. Duddington *per* Dr. R. E. M. Pilcher). West of Scunthorpe, September 30th, one captured flying over marshy ground amongst sallow and willows (J. E. Duddington *per* Dr. R. E. M. Pilcher). West of Scunthorpe, October 6th, one watched for a considerable time by Mr. Woodland as it flew round his garden (Dr. R. E. M. Pilcher). West of Scunthorpe, October 12th, one captured by Mrs. Rees (Dr. R. E. M. Pilcher).

LONDON. Regents Park, autumn, one seen by a lady naturalist (Guy Taplin *per* J. P. Widgery).

ISLE OF MAN. Ballasalla, August 20th, on buddleia (Garrad, *Ent. Rec.,* **88**: 265). Onchan, August 21st, on buddleia (Garrad, *loc. cit.*). Langness, August 22nd (Garrad, *Ent. Rec.,* **88**: 266). Blue Point, August 22nd (Garrad, *loc. cit.*). Douglas Head, August 24th, one found drowned in a

water tank (Garrad, *Ent. Rec.*, **88**: 265). The Garey, August 24th (Garrad, *Ent. Rec.*, **88**: 266).

MIDDLESEX. Brentford, July 9th, seen by P. J. Edwards (Baron C. G. M. de Worms). Northwood, August 21st, one "flew from a very large willow and settled on dahlia buds" (Mrs. Jean Rabjohn). Ealing, September 10th, seen by Mrs. C. Lee on buddleia at mid-day (H. Lee).

NORFOLK. Snettisham, February 26th, seen by Adrian and L. T. Hall (Dr. E. A. Ellis). Great Yarmouth, June 27th, flying along tide-line (P. Marsh). Larling, August 10th, Mrs. E. M. Greenacre (Ellis, *Ent. Rec.*, **88**: 269). Holme, August 20th, one in the Heligoland bird trap taken and released by the warden, P. R. Clarke, Norfolk Ornithologists' Association (P. R. Clarke, *North Norfolk News*, 3.ix.76). Wells, August 21st (John Goldsmith *per* Ellis *loc. cit.*). Mattishall, August 21st (Dr. E. A. Ellis *per* R. A. French). Weybourne, August 21st (Ellis, *loc. cit.*). Sea Palling, August 22nd (John Garrett, M.P. *per* Ellis *loc. cit.*). Winterton, August 23rd (Ellis, *loc. cit.*). East Runton, August 23rd (Mrs. Betty White *per* Ellis, *loc. cit.*). Horning, August 23rd, on fallen apples (H. J. Woode *per* Ellis, *loc. cit.*). Wiveton, August 23rd, on buddleia (Mrs. Parry *per* Ellis, *loc. cit.*). Thetford, August 23rd (Ellis, *loc. cit.*). Holme, August 24th, one seen by P. R. Clarke (R. A. French). Burgh Castle, August 25th (Mr. Summerson *per* Ellis, *loc. cit.*). Stiffkey Meals, August 25th, one "flew in from the sea" (H. J. Dickinson, *The Times*, 1.ix.76). Great Yarmouth, about August 26th, three separate specimens caught by boys (Percy Trett *per* Ellis, *loc. cit.*). Caister, August 26th (P. Trett, *per* Ellis, *loc. cit.*). Blakeney, August 27th, one in a house (Mrs. Coxeter *per* Ellis, *loc. cit.*). High Kelling, August 29th, on ripe blackberries (Anthony Twist *per* Ellis, *loc. cit.*). Wells, before and on August 29th (P. Banham *per* R. A. French). Tacolneston, August 29th, R. N. Mawdesley upon the back of whose neck one settled while he was making gooseberry wine; Dr. Ellis photographed the specimen (Ellis, *loc. cit.*). Holkham Gap, August 29th (R. N. Hobbs). Honing, August 31st, on ripe blackberries (Martin Harvey *per* Ellis, *loc. cit.*). Holt, September 1st, one seen on rotten apples (Lady W. Harrod *per* Dr. E. A. Ellis). Ludham, September 1st-7th (Dr. E. A. Ellis *per* R. A. French). Surlingham, September 4th, on rotten apples (Mrs. Minns *per* Ellis, *loc. cit.*). Edgefield, September 5th (Dr. E. A. Ellis, *per* R. A. French). Holme, September 5th, one seen by P. R. Clarke (R. A. French). Sheringham, September 5th, one came into the house of Mr. Sadler; one seen by Dr. Taylor (Ellis, *loc. cit.*). Horstead, September 5th-7th, on rotten plums (Protheroe *per* Ellis, *loc. cit.*). Salthouse, September 9th (Dr. E. A. Ellis *per* R. A. French). Brumstead, September 12th (Dr. E. A. Ellis *per* R. A. French). Hellesdon, September 18th

(Dr. E. A. Ellis *per* R. A. French). Wymondham, September 18th (Dr. E. A. Ellis *per* R. A. French). Walsey Hills, Salthouse, September 18th (Mrs. Phelps *per* P. R. Clarke, Norfolk Ornithologists' Association). Loddon, September 20th (Dr. E. A. Ellis *per* R. A. French). Kirby Bedon, September 20th, one seen by J. Wright (R. A. French). Aldeby, September 21st, one seen by Mrs. Holmes (Dr. E. A. Ellis *per* R. A. French). Honingham, September 28th, one seen by R. Evans (Dr. Ellis *per* R. A. French). Wells, October 9th (Mrs. Phelps *per* P. R. Clarke, Norfolk Ornithologists' Association).

NORTHAMPTONSHIRE. Westwood, Peterborough, August 22nd, ♀ seen in a garden at close quarters by G.E.H. (G. E. Higgs). Earls Barton, on or about September 5th (P. J. Gent). Floore, September 25th (P. J. Gent).

NORTHUMBERLAND. Haltwhistle, August 29th, on buddleia (D. Bell *per* A. G. Long). Quayside, Newcastle-upon-Tyne, August 30th, photographed by Mrs. L. Buckler (Colin Simms). Brownslaw, near Wooler, August 31st, on buddleia (Mrs. A. Holmes *per* A. G. Long). Stagshaw House, Corbridge, September 5th, caught on the lawn (Mrs. J. J. Straker and Mrs. J. Chowdry *per* A. G. Long). Whitley Bay, September 29th, one seen by J. McConway (A. G. Long). Newcastle-upon-Tyne, October 4th, one caught inside a house (Miss A. N. Coates *per* A. G. Long).

NOTTINGHAMSHIRE. Nottingham, August 15th (*The Times,* editor of readers' letters *in litt.*). Balderton, Newark, August 22nd, two specimens (Miss E. Whistler *per* G. Walley). Farndon, Newark, August 23rd, on decaying apple (R. C. L. Howitt *per* G. Walley). Old Basford, near Nottingham, August 25th (R. Redmile *per* W. J. Heyes). Bulcote, near Nottingham, September 4th-5th (G. Allen and A. Dobbs *per* G. Walley). Cropwell Bishop, September 5th (*Bull. Loughborough Wildlife Soc. per* G. Walley). Burton Joyce, September 7th (D. Baker *per* F. Harrison).

OXFORDSHIRE. Oxford, September 11th, in a garden (B. Campbell, *Country Life,* 14.x.76, p. 1054). North Oxford, September 21st, seen by W. D. Campbell (*Guardian,* 29.ix.76).

SHROPSHIRE, Whitchurch, August 24th-25th, on buddleia and fallen overripe pears, borders were "light cream" (M. L. Alsop).

STAFFORDSHIRE. Alton, August 22nd, captured by Mr. Roberts and seen by M. Waterhouse, warden of Coombes Valley N.R. (R. G. Warren). Keele, August 22nd, seen feeding on rotting melon on a rubbish heap by Dr. Ursula Sharma (R. G. Warren). Near Alstonfield, August 23rd (H. J. Wain, *The Times,* 31.viii.76). Near Keele, October 10th, one seen by Dr. U. Sharma (R. G. Warren).

SUFFOLK. Southwold, August 21st, seen by P. Tait (John Last *per* Dr. E. A. Ellis). Eye, August 21st (Dr. E. A. Ellis *per* R. A. French). Saxmundham, August 22nd (*The Times,* editor of readers' letters *in litt.*). Pakefield, August 22nd (J. Last *per* Ellis, *Ent. Rec.,* **88**: 269). Reydon, August 25th, one taken by D. J. Perrin at 11 p.m. (G. J. Baker). Henham, August 29th, one seen by the Misses C. and S. Baker (G. J. Baker). Snape, August 29th, at midday (Miss E. Nicholson). Beccles, August 30th, one in garden, 12.30 p.m. (Mrs. P. Snowling). Assington, September 2nd (Dr. E. A. Ellis *per* R. A. French). Southwold, September 3rd, one flying up and down the cliffs, captured by Peter Cory (T. W. Gladwin). Westleton, September 9th, seen by Mrs. J. Westcott (Dr. E. A. Ellis *per* R. A. French). Minsmere, September 9th, seen in the reserve by Mr. and Mrs. Pickup (J. Sorensen).

SURREY. Godalming, July (*The Times,* 4.ix.76). Ewshott, near Farnham, August 22nd, one (G. C. B. Cross *per* R. A. French). Onslow Village, Guildford, August 22nd, about 5.30 p.m., borders "creamy-white" (Mrs. Marjorie Eady). Richmond, August 23rd, settled on lawn (Mrs. Adrien Naylor). Kew, August 24th (D. J. Carter). Banstead Heath, August (end) (F. Banyard *per* J. Heath). Carshalton, September 3rd, captured by Sean Clancy (Bretherton, *Ent. Rec.,* **88**: 264). Busbridge, Godalming, September 4th-5th, one flying round apple trees, seen by R. C. Steel and his son (H. W. Mackworth-Praed).

SUSSEX. Near Petworth, July 3rd, "settled on the drive of a house called Pitshill, situated near the villages of Upperton and Tillington" (G. J. Mapplebeck). Eastbourne, August 20th (B. T. C. Morris *per* D. J. Carter). Northiam, August 22nd, a very large female captured by A. D. S. Thornton in his garden where it was feeding on rotting apples at 5 p.m. (P. E. Smart). Eastbourne, August 23rd, caught by M. Parsons (Hadley, *Ent. Rec.,* **88**: 269). Pembley Green, Copthorne, September (first week), "Mr. John Howell tells me he observed three different *antiopa* in his garden which were feeding on fallen apples, and in one instance he picked one up and showed it to neighbours" (Baron C. G. M. de Worms).

WARWICKSHIRE. Birmingham, August 21st, one "alighted on a pear tree having flown in from a southerly direction" (Mrs. Mary Bourne). Nether Whitacre, near Coleshill, September 6th, feeding on fallen apples, seen by Mr. Davies (D. Walker, Birmingham Mus.). West Heath, Birmingham, September 8th, captured by Mrs. H. Colley, who took it to the Birmingham Mus. (*Birmingham Mail,* 14.x.76; D. Walker). Bedworth, Coventry, September, one flew into the ambulance station where it was captured and presented to Coventry Mus. (A. F. J. Gardner).

WESTMORLAND. Grasmere, September (mid), seen by W. C. Hall in his garden (Dr. N. L. Birkett).

WILTSHIRE. Warminster, August 25th, female with very white borders, taken on buddleia by R.E.S.'s son (R. E. Stockley). Warminster, September 3rd and 5th, very perfect with white borders (R. E. Stockley).

WORCESTERSHIRE. Malvern, August 14th, seen by D. K. Wright (J. E. Green *per* Caroline Latta, Curator, Worcester Mus.).

YORKSHIRE. Pontefract, August 15th, one seen by Mrs. Cowley (J. D. Pickup *per* Colin Simms). Saltmarsh Delf, near Goole, August 17th (A. Shaw *per* S. M. Jackson). Arundel Gate, Sheffield, August 20th (H. Furniss *per* D. D. Whiteley). Brentwood Road, Sheffield, August 22nd, Mrs. J. Burrows (J. L. Smith *per* D. Whiteley). Skipton, August 22nd (Miss M. Hartley *per* C. R. Haxby). Spa Gill Woods, Grantley, near Ripon, August 23rd, seen by Miss B. Molesworth (Dr. Margaret Atherden). Gouthwaite Reservoir, Nidderdale, August 23rd, seen by Mrs. J. Walton (Dr. G. T. Foggitt). Moscar Rise, Rivelin, Sheffield, August 23rd, at buddleia (Mrs. Bevis *per* D. Whiteley). Chippinghouse Road, Sheffield, August 24th, on buddleia (Sheffield Radio *per* D. Whiteley). Meersbrook Road, Sheffield, August 24th, specimen preserved (K. Dunnington *per* D. Whiteley). Albany Road, Sheffield, August 24th (Mrs. Peaden *per* D. Whiteley). Skipton, August 24th, about 1.30 p.m. (A. J. Morton). Bradford, August 24th, one hit by a truck in Thackley, presented to Bradford Mus. by the finder, M. Barrett (Miss M. Hartley). Brierley, Bradford, August 24th (Mrs. F. C. Draper *per* C. R. Haxby). Clifton Park, Rotherham, August 25th, dead specimen seen (W. A. Ely, in Harrison, *Jnl. Derbyshire ent. Soc.*, September 1976). Harrogate, August 25th, seen by Anna Sutcliffe (Dr. G. T. Foggitt). Sheffield, August 25th (*Sheffield Star per* D. J. Carter). Strawberry Lee Plantation, Blackamoor, Sheffield, August 25th, on heather in evening (S. Tivey *per* D. Whiteley). Green Hammerton, August 25th (P. Brown *per* C. R. Haxby). Ilkley, August 25th (A. C. M. Duncan *per* C. R. Haxby). Pontefract, August 26th, caught by A. Wilson and D. Penty (J. D. Pickup). Spurn Head, August 29th, seen by Mr. and Mrs. M. A. Hollingworth (Barry Spence). Upleatham, August 31st, found in a market garden by R. Sharp (J. E. Knight). East Hardwick, near Pontefract, August 31st, seen by Mrs. Cooke (J. D. Pickup). Collingley, Bingley, August 31st, seen by Mrs. M. Shimeld, member of Bradford Naturalists' Soc. (Miss M. Hartley). Sleights, near Whitby, August 31st, on fallen plums, photographed on cine film by H. Mason (S. M. Jackson). Saltburn, August (no date), found in a garden by Mrs. P. Widgery (J. E. Knight). Scholes, Rotherham, September 3rd (W. A. Ely *per* D. Whiteley). Harrogate, September 5th, seen by M. Brown (Dr. G. T. Foggitt). Markington, September 5th, on buddleia (A. Stobbs *per* Miss M. R. Sanderson). Ilkley, September 5th (Mrs. F. C. Draper *per* C. R. Haxby). Barton,

September 5th-7th, one seen by Victor Brown (T. C. Dunn). North Duffield, September 7th (Miss McNeil *per* Colin Simms). Harrogate district, about September 10th, dead female (Dr. M. B. Usher). Criddling Stubbs, near Pontefract, September 10th-11th, 16th, seen about the garden of Mrs. M. Norton by her and others (J. D. Pickup). Royal Hospital, Sheffield, September 14th (P. Collins *per* D. Whiteley). Tickhill, Rotherham, September 14th-15th (W. A. Ely *per* D. Whiteley). Pulleyn Drive, York, September 15th-19th, female feeding on rotten apples seen by Dr. J. A. Thompson and others (Colin Simms). Runswick Bay, September 23rd (R. Paterson *per* Colin Simms). Spurn Head, September 26th, one with border "golden-yellow" settled on a bramble leaf, it then flew out to sea, seen by H. Andrew; another (or the same one) seen by a party of ornithologists shortly after (W. A. Watson). Copt Hewick, near Ripon, September (end), seen on a compost heap by M. Chadwick (Dr. Margaret Atherden).

IRELAND

CORK. Glenwood House, Kilworth, August 28th-29th, seen by Mrs. Dilys Pieters (*Irish Times,* 2.ix.76).

DONEGAL. Between Maghera and Port, Slieve Tooey cliffs, west of Ardara Town, August 23rd, seen by K. Large and P. Moss (*Irish Times,* 27.viii.76).

DUBLIN. Booterstown, Blackrock, November 13th, captured in a house by Brendin Larkin (J. B. Preston *per* Dr. J. P. Hillis).

LOUTH. Dundalk, late August, on buddleia, seen by Miss Gilligan (age 12) *per* her father (Dr. J. P. Hillis)[6].

WATERFORD. Foilaprisoon, east side of Comeragh Mts., August 15th, seen by Rev. Bro. Stephen Tobin (M. O'Meara *per* Dr. J. P. Hillis).

SCOTLAND

ABERDEENSHIRE. Aberdeen City, August 22nd, two together on buddleia (Dr. Rae *per* Dr. M. R. Young).

BANFFSHIRE. Gardenstown, August 21st (*The Times,* 4.ix.76).

BERWICKSHIRE. Swinton House, August (no date), seen by a gardener (Lt. Col. Logan Home *per* A. G. Long). St. Abbs Head, September 18th, flying (W. Brackenbridge *per* A. Sommerville). Coldingham, September 18th, flying (W. Brackenbridge *per* A. Sommerville). Newmains, Dryburgh, September 18th-19th, at sap oozing from an ash, captured (Buckham, *Ent. Rec.,* **89**: 54).

CAITHNESS. Near Dunbeath, August 18th, in a quarry (Kettlewell, *Ent. Rec.,* **88**: 285).

EAST LOTHIAN. Dunbar, September 9th, one collected by P. Fairburn (A. Sommerville).

[6] Dr. Hillis gave this as being only a "possible occurrence", and the record is accepted with that reservation.

KINCARDINE. Crathes, near Banchory, September 25th-28th, feeding at various plants, seen by Dr. Sabnis (Dr. M. R. Young). Banchory, October 3rd, seen by N. Bayfield (Dr. M. R. Young).

MIDLOTHIAN. Edinburgh, September 18th (J. Phillips *per* J. Heath).

PEEBLESHIRE. Glenormiston, Inverleithen, August 25th, seen by F. C. S. Sandeman (*The Field,* **249**: 617).

PERTHSHIRE. Wester Biggs, near Blackford, September 4th, photographed by B. Rowley (A. Sommerville).

SHETLAND. Gardie, Isle of Bressay, July 18th, one seen by Mrs. T. G. Scott (*The Times,* 3.ix.76).

WALES

ANGLESEA. Beaumaris area, August 24th (A. Trevor *per* Mrs. M. J. Morgan). Newborough N.N.R., August 24th, seen in front of a hide at Penlon by voluntary wardens, A. Davies and D. A. Hughes; August 25th, another (or the same one) seen nearby by M. Fox (Mrs. M. J. Morgan).

CAERNARVONSHIRE. Bettws-y-Coed, August 21st, one seen by J. Bebbington (J. A. Bailey and D. J. Smith).

CARDIGANSHIRE. Ystead Meurig, October 21st, seen by J. J. Richards (R. A. French).

CARMARTHENSHIRE. Gwernogle, September 26th, a weather beaten specimen on a woodpile (Passmore, *Ent. Rec.,* **88**: 336).

PEMBROKESHIRE. Henry's Moat, near Haverfordwest, August 21st-22nd (D. J. Carter). Glandwr, Nevern, August 31st, settled on the shirt of a man to whom Mr. Whitworth was speaking (R. F. Whitworth *per* Firmin, *Ent. Rec.,* **88**: 304).

Acknowledgments

I do especially thank all those whose names appear in the foregoing account, for information on and records of, the occurrence of the Camberwell Beauty in 1976, and without which this paper could never have been written.

Mr. John Heath prepared the distribution map and I am extremely grateful to him for performing this exacting task. My thanks are also due to Mr. Roy French for his usual courtesy and ever willing help in supplying records.

I desire to acknowledge gratefully my indebtedness to *The Times* editor of the readers' letters, who kindly wrote on my behalf to all those who had communicated with him on the subject of the appearance of the Camberwell Beauty in 1976.

Finally, I wish to record my deep appreciation for all the work done by Mr. Peter Davey, who as well as being an entomologist is a professional meteorologist. He supplied details of the weather, worked out the selected backtracks and prepared the diagrams (figs. 1, 2 and 3).

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MONOCHROA HORNIGI (STAUDINGER) (LEP., GELECHIIDAE) IN HAMPSHIRE. — On the morning of 28th June, 1976, the contents of a Mercury Vapour light trap at this address included an unfamiliar Gelechiid which was subsequently identified as a female specimen of *Monochroa hornigi* by Dr. J. D. Bradley of the Commonwealth Institute of Entomology.

The first record of this species in Great Britain is of a specimen taken in the garden of Buckingham Palace, London, also in a light trap, on 17th June, 1963 (*Proc. S. Lond. ent. nat. Hist. Soc.*, **1963**, p. 59), and since then four other specimens have been taken there in the same manner. There are no other known British records.

On the Continent the larva is associated with *Polygonum,* feeding within the stems without any external sign of occupation. There are eight species of *Polygonum* at Buckingham Palace, but painstaking examination of the stems failed to reveal traces of the larva. In my garden there is only *P. aviculare,* which is not scarce. Heavy rain in the autumn of 1976 in fact produced such a luxuriant growth of it as I have seldom seen, but it was not until we had carted it away and burned it that my specimen of *M. hornigi* was identified. I have collected such plants as we overlooked, and although dissection of some of the thicker stems has revealed no sign of internal feeding, I am keeping the remainder in the hope that something may emerge.

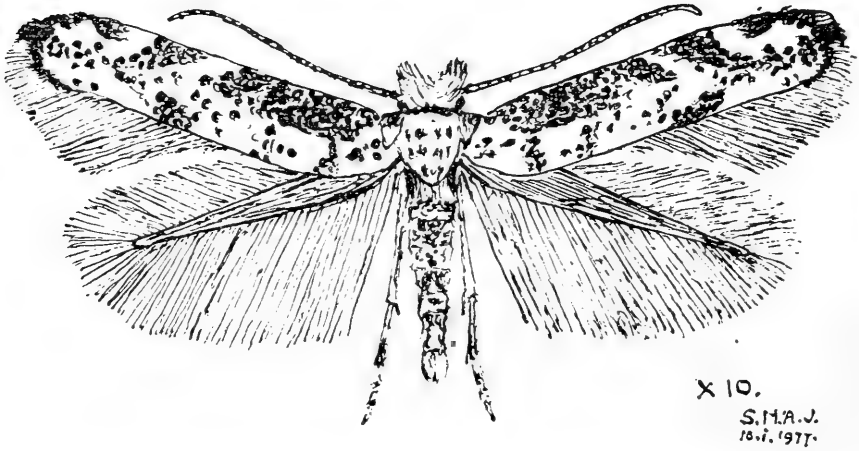
Dr. K. Sattler of the British Museum (Natural History) tells me, however, that in other countries the species is commonest on or near marshy ground, and since my garden is less than a quarter of a mile from the river Itchen, this widens the choice considerably. In any event, we shall be more selective with our weed-killing in 1977. — D. W. H. FFENNELL, Martyr Worthy Place, Winchester, Hants.

Phyllonorycter sagitella (Bjerkander, 1790) =*tremulae* Zeller, 1846 (Lep., Gracillariidae): A Species New to Britain

By L. PRICE*

While revising my collection, I came across a small series of moths which did not seem to agree with any of the descriptions of *Phyllonorycter* in Meyrick (1927). I submitted them to Dr. J. D. Bradley, who kindly determined them as *P. sagitella* (Bjerk.), a species hitherto unrecorded from Britain.

The larvae were found mining the undersides of the leaves of aspen (*Populus tremula*) in a small wood near Dymock, Glos. I found a few mined leaves in early July 1955, from which a few moths emerged in August 1955; and collected at the same locality, mined leaves containing larvae of *sagitella* in July 1956, from which a few moths emerged in August and September of that year. These moths were previously thought to be referable to *P. comparella* Dup. and the subject of a report by the author (Price, 1958).



A description of the imago and other particulars after Bradley, Jacobs and Tremewan (1969) are as follows: Forewing white, very densely covered with reddish-grey scales except at edges where narrow streaks of the whitish ground colour remain. The pattern can best be described by taking as the ground colour the dark reddish yellow-brown scales; then four or five narrow and whitish costal streaks and three or four dosal streaks are apparent; the first three costals and first two dorsals very oblique, alternated; fourth dorsal, when present, triangular, at tornus, markings edged inwardly with blackish; apical streak black; fringe line very distinct, black; head yellowish-white. Expanse 7-8 mm. iv-v; vii-viii. Larva on *Populus tremula* (underside). vi-vii; viii-x.

The range of the species abroad extends through France and Belgium (Lhomme, 1953), Germany (Sorhagen, 1886) and

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Central Europe to Scandinavia and West Russia (Staudinger and Rebel, 1901).

Acknowledgments

I am grateful to Dr. J. D. Bradley for the determination, and thank Mr. S. N. A. Jacobs for kindly drawing the figure of the perfect insect here shown.

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ABNORMAL ABUNDANCE OF COCCINELLA SEPTEMPUNCTATA L. — This familiar scarlet ladybird with black spots was unusually numerous in 1976, but I was particularly struck by its abundance while walking along the promenade at Eastbourne on the 30th July, when one or more living or squashed specimens could be seen on the ground at every few steps. — J. M. CHALMERS-HUNT.

DIATARAXIA OLERACEA L. IN JANUARY. — Part of my offices is a large new building at 63 Threadneedle Street, London, E.C.2. We have two small bedrooms on the top floor (7th) which are used when evening functions make it inconvenient to return home.

I occupied one of these on the night of the 18th/19th January, 1977.

At 07.20 on the 19th January, I passed through the adjoining office to go down to my room on the 3rd floor. As I did so a moth flew across the office. I was quite unequipped but was able to catch it by hand. It was a rather small specimen, but perfectly fresh, of *Diataraxia oleracea,* the Bright Line Brown Eye. This moth is normally on the wing in June and July and again sometimes in the autumn. Is it likely that it is breeding in the nursery greenhouses which supply the foliage house plants that are used in some numbers throughout the building and that the pupa was brought into the office in one of the flower pots? — J. A. C. GREENWOOD, "The Thatches", Forest Road, Pyrford, Woking, Surrey.

CORRECTION

Reference my note on *Cyclophora puppillaria* Hbn. in the January issue (*antea,* p. 12), I regret I give the date as July 22nd in error. This should have read October 3rd. — C. H. DIXON.

Two Visits to Europe during 1976

By C. G. M. DE WORMS, M.A., Ph.D., F.R.E.S.*

(1) Provence in Early June

At the instance of Mr. Leonard McLeod, I last visited Provence at the end of August 1975 (*vide Ent. Rec.*, **88**: 12-13). In the spring of 1976 he once more kindly extended to me a further invitation to revisit that most attractive and rich part of southern France, possibly much earlier in the season in May or early June, but it was not until June 3rd that I once more flew out to Marseilles and sailed up the autoroute in a small Fiat with the mistral blowing its fiercest. In fact, there were notices along this motorway warning against the force of this wind. When I reached the small village of St. Pierre Vassols, not far from Carpentras where Leonard McLeod is now living, I was afraid this strong wind would wreck my collecting there as it is liable to last quite a week once it sets in. However, it had subsided considerably when I reacquainted myself with the famous slopes of Mont Ventoux on the 4th. It was a glorious day with plenty on the wing. By far the commonest butterfly seemed to be *Aporia crataegi* L. with *Anthocharis euphenoides* Staud. still very fresh, and a great many *Leptidea sinapis* L. On the lower slopes were flying a fine form of *Plebicula escheri* Hübn., while at slightly higher levels were *Lysandra hispana* H.-S., together with *L. bellargus* Rott. and a few *Cyaniris semiargus* Rott. The chief Nymphalines were *Clossiana euphrosyne* L., *Mellicta athalia* Rott., *Melitaea phoebe* Schiff. and a few *Aglais urticae* L. While I was having a light lunch at the Café Reynard at about 5,000 ft. where the white screes begin, I suddenly noticed an obvious *Erebia* alight on a table outside, but it soon made off when I approached it. However, another flitted by which I caught and it proved to be *E. triaria* de Prunner. So I soon went to investigate further and was amazed when from a small heap of damp sand at the side of the restaurant there rose quite a cloud of these insects, at least two dozen. I have never seen *Erebias* before on any damp patch and I wonder what the attraction was in this instance, possibly some salt in the sand? On further search, the species was flying in some quantity on the white screen slopes adjoining the café, but I could not locate a single specimen in the pinewood which just reached this area on one side. I have seen this *Erebia* often among trees in other parts of Europe. In this instance it seemed confined to the screes, like *E. scipio* Boisd. at a later date. The following day, the 5th, again very fine, I revisited the Gorges de la Nesque which had proved so fruitful in 1973 and 1975. This time too I was not to be disappointed. The most interesting captures were a few *Mellicta deione* Geyer as well as *Limenitis reducta* Staud., the Lycaenids *Everes alcetas* Hoffmannsegg, *Glaucopsyche alexis* Poda, *Plebicula dorylas* Schiff., *Celastrina argiolus* L., *Cupido minimus* Fuessly and *Heodes alciphron*

* Three Oaks, Shores Road, Woking, Surrey.

Rott. It was even warmer on the 6th when I accompanied my host to a special locality where he pointed out to me several somewhat diminutive bushes of *Colutea arborescens,* the bladder senna and foodplant of the largest European blue, *Iolana iolas* Ochs. Examination of the already ripe pods provided a few very small larvae of this fine insect which had been on the wing for quite a month. We saw one or two very late and worn *Euchloë tagis* Hübn., another speciality of that region. *L. hispana* was quite numerous there. In another spot we also saw *Argynnis adippe* L., *Pyronia bathseba* Fab. and *Heodes tityrus* Poda. On the lower slopes of Mont Ventoux that day the only additional species was *Plebicula amanda* Schneider. The next morning of June 7th saw me again with Leonard McLeod, this time in a secluded valley to the north side of the big mountain which was not as productive as we had hoped. *Hamearis lucina* L. and *Polygonia egea* Cramer were the only new species. Later that day I saw *Erebia triaria* again at high levels. I was once more in the Gorges de la Nesque on the 8th in great heat and was most surprised to take a *Parnassius apollo* L. at this very early date. *Melitaea didyma* Esp. was on the wing and also the large noctuid *Minucia lunaris* Schiff. I returned via Sault and the steep road to the top of Mont Ventoux where many *L. bellargus* were flying. On June 9th, I did a big detour through the small town of Malaucène to the attractive valley of the Toulrenc river, where little was to be seen so that I made again for Sault and the Gorges, lunching at the little village of Monieux. *Papilio machaon* L. and *Iphiclides podalirius* L. were noted, as well as an early *Maniola jurtina* L. and *Gonepteryx rhamni* L. The morning of my last collecting day, June 10th, was spent under a blazing sun in the special locality for *Iolana iolas,* where I distinctly spotted a male at rest among some low herbage, but it eluded me. *E. triaria* was again in fair numbers on the high ground, together with many *Cupido minimus.*

During my last two nights I ran my short strip Heath light in my host's garden. Quite a number of moths came during the first hour. Among them were several *Acontia luctuosa* Schiff. and *Emmelia trabealis* Scop. Other visitors included *Arctia villica* L. and *Atolmis rubricollis* L.

I travelled home on June 11th after a brief but very pleasant stay in this delightful region, thanks largely to the kindness and hospitality of Leonard and Sue McLeod who accommodated me in their most comfortable home.

(2) Collecting in Catalonia: July 1976

According to Lt. Col. W. B. Manley, the mountainous area lying between Barcelona and the main chain of the Pyrenees has until fairly recently been much neglected, certainly by British lepidopterists (*vide Ent. Gazette,* 1973, **23**: 79-89). However, his account of the butterflies in that region tempted me to try my hand this summer. I flew to Barcelona on July 20th, where I picked a fast and spacious Simca

and was soon speeding along the great avenue through the centre of the big city and then along one of the coastal motorways until I reached the road which eventually leads to Puigcerda and Bourg-Madame on the French frontier in the high Pyrenees. My haven was the Hostal-4-Carreteras which borders the main road on the outskirts of the small town of Tona, some 45 miles north of Barcelona. This very comfortable hotel had also served Dr. and Mrs. Lionel Higgins well in 1973, also the Manleys on several occasions, since in the article referred to above there is a long list of the local species and localities for them, most of which I visited with noted success. The first of these was on the edge of a fir forest just north of Taradell, only five miles from my hotel. On the afternoon of my arrival this spot produced *Colias australis* Verity, many *Melanargia lachesis catalana* de Sagarra, *Leptidea sinapis* L. and the first of the fine form of *Agrodiaetus dolus fulgens* de Sagarra. Also there was what I shall refer to as *Agrodiaetus agenjoi* Forster which does not conform to either *A. fabressei* Oberthur or to *A. ripartii* Freyer, since it lacks the white stripe on the underside of the hindwings. *Thymelicus acteon* Rott. was another capture. The next morning, fine and warm and in the 80s, I explored the plateau to the west, near the small town of Moya. It is reached by a tortuous but good road up a steep escarpment. I soon discovered a small glade surrounded by scrub oaks round which were flying dozens of male Gipsy Moths. *M. lachesis* was by far the commonest butterfly with *Pyronia tithonus infrafulva* de Sagarra a good second. *A. agenjoi* was also quite plentiful with serveral paired up, but it was not easy to distinguish the females of this species from those of *A. dolus* except by the white instead of brown fringe of the latter insect. The fine large and bright males of *A. damon cabrerae* de Sagarra were equally numerous. *Satyrus actaea espanoli* Agenjo was just appearing with *Pararge megera vividior* Verity and *Coenonumpha pamphilus barcinonis* Verity. A severe thunderstorm with torrential rain broke that evening so that the morning of the 22nd was much cooler. The skies soon cleared when I set out northwards to the main Pyrenees range. A path along the river near Montesquieu provided *Ladoga camilla garrigae* de Segarra, *Argynnis aglaia* L., *Pyronia bathseba pardilloi* de Sagarra and *Ochlodes venata faunus* Turati. After a break for lunch at Ripoll, I proceeded up the long mountain road to the Puerto de Tosas at 5,400 ft., some 15 miles from the French frontier. Here beside the road were flying *Erebia meolans zagasia* Fruhstorfer with an occasional *Parnassius apollo* L. and *Lasiommata maera* L. I covered the 50 miles back to Tona by the same route. Early on July 23rd I revisited the Moya locality under a scorching sun. *Gonepteryx cleopatra* L. males were flying in plenty. *Polyommatus icarus zelleri* Verity and *Plebicula thersites ferdinandi* de Sagarra were equally numerous. Later that day I discovered a rough road near Colluspina leading from the top of the ascent from Tona.

This spot proved very fruitful providing the first hairstreaks, notably mainly *Strymon esculi camboi* de Sagarra on the marjoram, especially numerous, though mostly worn, while the few *S. spini bofilli* de Sagarra were freshly out. Both *Brintesia circe hispanica* Spüler and *Hiparchia semele martire* de Sagarra were flying in this terrain where there were plenty of sprigs of majoram as an attraction. *Hipparchia alcyone ibarrae* Agenjo was flitting along the steep sandy slopes. The first *Colias croceus* Fourcroy was also seen. The 24th, yet a further blazing day, I travelled through the outskirts of the large town of Vich and eastwards to the small hamlet of Pruit where among grassy slopes butterflies were very plentiful. Species I had not seen before included *Argynnis adippe* D. & S., *Mellicta athalia* Rott., *Coenonympha arcania* L. and *Hesperia comma* L. There were a few *A. damon* and *L. coridon,* but later that day I found a piece of downland at the top of the nearby pass alive with both these insects reminding one of similar terrain in Britain. Both sexes of *L. coridon* were in hundreds and mostly just out. Soon after my arrival I had been trying to make contact, but without success, with Señor Joaquin Vilarrubia, the acknowledged authority on the lepidoptera of this region. That evening I called at his fine château at Torres Llabreta, quite near Tona, to find he had left shortly before on a collecting trip. I had hoped to hear from him about the possibility of locating *Apatura ilia barcina* Verity, perhaps the main speciality of this part of Catalonia. July 25th saw me on a tour westwards, via Olos and Prats and back via Artes to Calders to Moya, where *Arethusana arethusa dentata* Saud. was just appearing. The next morning dawned overcast, and in fact July 26th proved to be the only day without sun. However, I ventured along the very attractive wooded valley to the small town of Viladrau and on towards Arbucias, but conditions were unfavourable for collecting. I surveyed this rich area which was to prove most fruitful in the ensuing days. On the 27th I paid my last visit to the locality near Moya. This small town vaunts an excellent restaurant. *A. arethusa* was now well out in numbers with an occasional *Hipparchia fagi tuxiensis* Varin. In the afternoon I retraced my route through Tona and to a bridge over a ravine just beyond Seva on the road to Viladrau. Here I discovered two fairly large patches of marjoram alive with insects. *Argynnis paphia magnifica* Verity was well to the fore, together with a few *Issoria lathonia* L. and *Brenthis daphne* D. & S. Among smaller visitors were *Everes alcetas* Hoffmansegg and *Aricia cramera* Eschscholtz. The 28th saw me in the morning on the very tortuous mountain road which runs southward via Seva towards Montseny. As this route did not seem very rewarding, I retraced my steps to the butterfly corner on the bridge where I counted no less than 20 species literally jostling for a good position on the marjoram patches. Among this seething concourse I spotted a fresh *A. dolus* and *Laeosopis roboris demissa* Verity. Nearly all the possible fritillaries were present, includ-

ing *A. adippe* and *A. aglaia, Brenthis dia* L., also *Papilio machaon.* I then made my way once more via Viladrau along the mountainous valley to Rabell, which also sports an excellent eating resort but few insects. However, on the way back a halt was made at a huge buddleia on the outskirts of Viladrau. This large bush was smothered in butterflies since it seemed to be quite isolated. *B. circe* was its largest client, together with plenty of *A. paphia* and several *Pyrameis cardui* L., *P. atalanta* L. and *Polygonia c-album.* My last collecting day, July 29th, was again very warm and spent in the same area as the previous one. The marjoram patches everywhere were well patronised, especially by *Strymon esculi* and by a crossing of a small river I was almost certain I caught a flash of an *Apatura ilia* sailing round a small oak near a large grove of poplars. Many *E. alcetas* were in this locality and I saw a single *Pyrgus foulquieri* Oberthur. The big buddleia in Viladrau again provided quite a circus with most of the species seen the day before with the addition of *Gonepteryx rhamni* L., *Inachis io* and *Pararge aegeria* L. I made a last survey of the marjoram on the bridge where I saw the two White Admirals (*C. camilla* and *L. rivularis*) feeding side by side with a couple of the Swallow-tails, *Iphiclides feithsameli* Dup. which is appreciably different from *L. podalirius* L. My final call was where I began, at Taradell where there is another small valley full of poplars and sallow, but no *A. ilia* were apparent. I later heard the first brood was virtually over by the time I reached this area. *Leptidea sinapis* was swarming in this spot. In all I recorded 57 species of the local butterflies. Col. Manley in his 1973 paper enumerates 108. On July 30th I motored via Barcelona to the airport and was back in London that afternoon after a most enjoyable tour in this grand part of Spain.

CATOCALA FRAXINI L. IN NORTHUMBERLAND. — A male Clifden Nonpareil was found at Morpeth early on the morning of 21st September, 1976. Dr. A. G. Long tells me that this is only the second record of this species for Northumberland, and the first one this century. Unfortunately the identity of the finder remains unknown. — D. A. SHEPPARD, Department of Agricultural Biology, Close House Field Station, Heddon-on-the-Wall, Northumberland.

THE HERALD (SCOLIOPTERYX LIBATRIX L.) HIBERNATING EN MASSE. — For some reason over 60 *S. libatrix* decided to hibernate here *en masse* in a windowless cellar room, and ten times more than occurred here during the whole year in the trap. — H. C. J. GODFREY, Pinehurst West, Swiffe Lane, Broadoak, Heathfield, Sussex.

Collecting in the Hot Summer, 1976

By David C. G. Brown*

Emerging from my winter hibernation, I drove to Salcey Forest, Northamptonshire, on 5th April. Although rather breezy it remained at 47°F. until my departure at 11.20 p.m. when the following had come to m.v. light: 12 *Cerastis rubricosa* Schiff., 3 *Orthosia gothica* Linn., 30 *O. cruda* Schiff., 30 *O. stabilis* Schiff., 2 *O. munda* Schiff., 4 *O. incerta* Hufn., 5 *Xylocampa areola* Esp., 4 *Conistra vaccinii* Linn., 1 *Alsophila aescularia* Schiff., 15 *Earophila badiata* Schiff., 2 *Selenia bilunaria* Esp., 2 *Biston strataria* Hufn. and 2 *Ectropis biundularia* Borkh.

Three days later at this same site *Orthosia populeti* Fab., *Anticlea derivata* Schiff., *Eupithecia abbreviata* Steph. and *Erannis marginaria* Fab. were additions.

Later that week on a clear moonlit night Oversley Wood in Warwickshire produced 20 species of macros, including 1 *Achlya flavicornis* Linn., 7 *Panolis flammea* Schiff., 20 *O. populeti,* 1 *Eupithecia castigata* Hübn. and 12 *Trichopteryx carpinata* Borkh.

On the 11th I began my now annual quest for *Orthosia miniosa* Schiff. I arrived at Lyndhurst at 8.20 p.m. to find cloudy conditions had been left behind in Warwickshire and I was now confronted with clear moonlit skies and a bitterly cold still air which the New Forest always seems to produce at this time of year on such clear nights.

The m.v. traps produced only 13 usual spring species. The following day I drove to another part of Hampshire to find *Panaxia dominula* Linn. larvae plentiful on comfrey plants, the larvae were already three-quarters grown.

Back in the Forest that evening, I had similar conditions to the previous night and the only species worthy of a mention were 2 *Polyploca ridens* Fab. and 2 *P. flammea*; the latter seemed to be enjoying a good year.

On 18th April I was operating my m.v. traps on Royston Heath, Hertfordshire, for *Orthosia opima* Schiff., and despite the clear skies and low temperature 4 appeared in good condition. The following morning I travelled on to Barton Mills in Suffolk and carefully examined catkins under the Black Poplar trees growing by the roadsides. I managed to find 14 small larvae of *Cirrhia ocellaris* Borkh. It was a beautifully warm and sunny spring day and *Nymphalis io* L. and *Gonepteryx rhamni* L. were plentiful in the woods around Barton Mills. I tried my m.v. lights at Royston Heath once more that evening in an attempt to complete my series of *O. opima.* Unfortunately a very strong and cool breeze spoilt the evening and again only 4 specimens in variable condition arrived, all of which, I might add, were very late flying.

The following day I travelled with Andrew Gardner to the New Forest in a second attempt for *O. miniosa.* The skies

*25 Charlecote, near Warwick.

were clear but it did not deter a reasonable number of species coming to the traps: 6 *Odontosia carmelita* Esp., 1 *Pheosia gnoma* Fab., 6 *Notodonta trepida* Esp., 15 *Chaonia ruficornis* Hufn., 5 *Panolis flammea,* 10 *P. ridens,* 1 *Orthosia gracilis,* 4 *Eupithecia irriguata* Hübn., 1 *Bapta distinctata* H.-S., 3 *Cleora cinctaria* Schiff. and, to my great delight, my first *O. miniosa.*

The next day we ferried across to the Isle of Wight from Lymington, where a taxi connected us to the *Melitaea cinxia* L. locality. As we walked down from the road towards the undercliff we were not prepared for the vast numbers of larvae we were to see. To say they were exceptionally common would be an understatement. It was difficult to walk along for a few hundred yards without treading on larvae. Having collected a small number we stayed to savour the remarkable site. We were amused to watch picnic makers trying to find somewhere to sit clear of little armies! The hot sunshine had caused great activity and several were found on the beach near the tide line, some 300 yards from any foliage. We wandered leisurely back on to the road well in time for our taxi to catch the ferry, and still marvelling at the sights we had seen. Very satisfactory specimens have since emerged and I had sufficient surplus to release numbers in my breeding garden and take the opportunity of adding another species to my photographic record.

In the New Forest that evening we changed our location to Brockenhurst and were rewarded with 3 female *miniosa* which all laid well and proved easy to rear on young oak leaves. A female *Lithophane ornitopus* Hufn. was another welcome visitor, but it was unfortunate that when I did finally learn than this species was a cannibal it was too late! Other notable species at m.v. were 8 *E. irriguata,* 2 *B. distinctata,* 3 *O. carmelita* and 11 *P. flammea.*

We were back at this same location on 8th May when we each took a very fresh series of *Ligdia adustata* Schiff., another species which seemed to be well suited to the very warm year. Over 80 *N. trepida* were counted, including a very dark specimen, 2 *Drepana cultraria* Fab., 10 *Drepana binaria* Hufn., 1 *Drepana falcataria* L., 8 *Drepana lacertinaria,* 6 *Drymonia dodonaea* Schiff., 3 *P. flammea,* 2 *Cosymbia albipunctata* Hufn., 8 *Cosymbia punctaria* L., 12 *E. irriguata,* 6 *Chloroclysta miata* Linn., 1 *Lampropteryx suffumata* Schiff., 2 *Cleora cinctaria,* 4 *Ectropis consonaria* Hübn., 1 *B. distinctata,* 2 *B. bimaculata* Fab., and 3 *Semiothisa alternaria* Hübn. were notable species on this hot night.

Our venue for the night of 22nd May was Tintern in the Wye Valley. After another warm and sunny day the temperature remained high for m.v. operations. A good 60 species of macros came to the traps, including 12 *N. trepida,* 4 *Stauropus fagi* Linn., 1 *Tethea fluctuosa* Hübn., 18 *D. cultraria* 1 *Apatele alni* Linn., 1 *L. suffumata* Schiff., 18 *Anaitis plagiata* Linn., 1 *B. bimaculata,* 2 *L. adustata,* 2 *Selenia lunaria* Schiff.,

3 *Cepphis advenaria* Hübn., 1 *Deileptenia ribeata* Clerck, 28 *E. consonaria* and 6 *Acasis viretata* Hübn.

A warm overcast night in Warwickshire at Oversley Wood on 28th May produced 6 *Harpyia bifida* Brahm, 2 *Tethea or* Schiff., 10 *Clostera curtula* Linn., 4 *A. alni,* 1 *Xanthorhoe designata* Hufn. and 2 *S. lunaria.*

Distant Scotland was my destination on the 30th May. I arrived at Struan by 5 p.m. Sugar that night on the now famous *lapponaria* posts was rather disappointing in that only 3 species were noted: *Eumichtis adusta* Esp., *Hada nana* Hufn. and *Scoliopteryx libatrix* Linn. The m.v. traps were run until dawn by the Bog Myrtle and gave me my first *Dyscia fagaria* Thunb. also *Apatele menyanthidis* View. and surprisingly a male *Macrothylacia rubi* Linn. Another m.v. trap which had been operated from a house in Trinafour village produced the Scottish form of *Pheosia tremula* Clerck.

Despite rain all night the skies were still heavy and it continued all day, increasing in strength as dusk approached. Sugar around the edge of the Aviemore Reserve was consequently very poor once more. The m.v. traps on Granish Moor were better in producing a very whitish *Apatele leporina* Linn., *Hydriomena coerulata* Fab., 12 *Ortholitha mucronata* Scop. (*scotica*), and *Chesias rufata* Fab. (*scotica*).

Another m.v. trap situated on a rocky hillside had resulted in large numbers, including 4 *Hadena bombycina* Hufn. Next morning it was still raining hard and I waited patiently for it to abate, but by early afternoon it was clearly evident that this was not to be and accordingly I set about searching the young birches on Granish Moor in the pouring rain for *Endromis versicolora* Linn. Egg batches proved fairly easy to find but the resultant larvae were rather more difficult to rear and only a small number of pupae were obtained, despite rearing many to the last instar successfully. *Lasiocampa callunae* L. larvae were very common on the saturated heather and birches with a few *Dasychira fascelina* Linn. larvae.

That evening I set up my traps in birch woods near Kincraig and then drove back to Aviemore Reserve to inspect my extensive sugar round which again failed to produce *rectilinea.* With this disappointment added to a poor m.v. catch and the continuing diabolical weather, I was persuaded the next morning to head southwards. I stopped in Yorkshire to look for *Orygia recens* Hufn. larvae in two localities but with no luck. I headed southwards to Derbyshire to set up traps on the moors for the night, meeting Brian Elliott en route. The catch was however disappointing and only 3 *H. bombycina* are worth mentioning.

Gusset Wood in the Chilterns on 7th June produced *A. alni, Euchoeca nebulata* Scop., *Discoloxia blomeri* Curt., *Eupithecia venosata* Fab. and *Pseudoboarmia punctinalis* Scop.

On 19th June I was setting my traps in torrential rain at Tintern. Although no *Drepana harpagula* Esp. appeared, *A. alni, Craniophora ligustri* Schiff., *Anaplectoides prasina* Schiff.,

Deileptenia ribeata Clerck and *Ectropis consonaria* Hübn. added interest to a long list of species.

Returning to the Chilterns on 22nd June, I met Bernard Skinner there and a good 91 species of macros came to the traps including *Apamea sublustris* Esp.

On 25th June Andrew and I set off for Sandwich in sweltering heat. We set our m.v. traps near the golf course in very hot and sticky conditions. The following arrived: 3 *Deilephila porcellus* Linn., 1 *Leucoma salicis* L., 1 *Euproctis chrysorrhoea* L., over 300 *Agrotis clavis* Hufn., 3 *Agrotis ripae* Hübn., 20 *Agrotis vestigialis* Hufn., 6 *Euxoa tritici* L., 3 *Heliophobus albicolon* Hübn., 4 *Hadena suasa* Schiff., 3 *H. bicolorata* Hufn., 45 *A. sublustris,* 3 *Pyrrhia umbra* Hufn., 2 *Spilosoma urticae* Esp., 9 *Eilema pygmaeloa* Doubl., 12 *Aplasta ononaria* Fuessl., 4 *Sterrha ochrata* Scop. and over 40 *Mesotype virgata* Hufn. The last two species mentioned were flushed out of the herbage even more commonly during the daytime. *Macroglossum stellatarum* Linn. was very common hovering over the vipers bugloss and we both netted a reasonable series.

Our last night was equally hot and a long list of macros was made with *Leucania obsoleta* Hübn. and *Comacla senex* Hübn. being additions.

The hot weather continued on 1st July when I managed to catch two female *Trisateles emortualis* Schiff. in the Chilterns but both refused to lay for me.

Local Oversley Wood was visited on 3rd July on a hot and overcast night at 74°F. A. bumper 124 species of macros turned up at the m.v. lights: 4 *Harpyia furcula* Clerck, 1 *Apamea scolopacina* Esp., 14 *Parastictis suspecta* Hübn., 5 *Schrankia costaestrigalis* Steph., 3 *Miltochrista miniata* Forst., 5 *Xanthorhoe quadrifasiata* Clerck, 1 *Mesoleuca albicillata* Linn., 15 *Lygris populata* Linn., 5 *Rheumaptera undulata* Linn. and surprisingly *Thecla quercus* Linn. and 2 *Aphantopus hyperantus* Linn.!

The following night in Salcey Forest 127 species of macros visited the lights, including 1 *Spaelotis ravida* Schiff., 6 *Arenostola fluxa* Hübn., 1 *A. sublustris,* 5 *A. scolopacina,* 1 *Zenobia subtusa* Schiff., 5 *Hemistola immaculata* Thunb., 1 *Cosymbia porata* L., 2 *X. quadrifasiata,* 6 *Melanthia procellata* Schiff., and 1 *Horisme vitalbata* Schiff. Further visits to the same site on the sweltering nights of 6th and 7th July each produced species totals of well over a hundred.

The hot summer was now well established when I visited Cambridgeshire on 17th July. Chippenham Fen that evening produced 124 species of macros, the best of which were: two very large *Sphinx ligustri* Linn., 1 *Lophopteryx cucullina* Schiff., 4 *H. suasa,* 16 *Arenostola phragmitidis* Hübn., 6 *Chilodes maritima* Tausch., 3 *C. ligustri,* 1 *Apamea unanimis* Hübn., 4 *A. ophiogramma* Esp., 3 *Coenobia rufa* Haw., 2 fresh *Eustrotia bankiana* Fab., 7 *Lygephila pastinum* Treits., 1 *Sterrha straminata* Borkh., 2 *Lygris prunata* Linn. and 10 *Lygris testata* Linn. Another trap at the village of Swaffham

Prior on this overcast night had produced the following: 1 *A. phragmitidis,* 1 *Cosmia affinis* Linn., 2 *Mesotype virgata* Hufn., 1 *Horisme vitalbata* and 1 *Horisme tersata* Schiff. The following night was clearer and produced much the same species, with the exception of a fresh *Phragmataecia castaneae* Hübn. at Chippenham. From here I continued eastwards on 19th July and visited Mr. H. E. Chipperfield at Walberswick to find there also Messrs. Britton and Saunders. "Chip", as I found him to be called, was most helpful in his knowledge of the local sites and together the three of us set our traps beside the extensive reed beds after a very heavy shower had passed overhead. 6 *H. suasa,* 15 *Leucania straminea* Treits., 10 *Simyra venosa* Borkh., 24 *Apamea oblonga* Haw. (most of which were in the actinics), 12 *Celaena leucostigma* Hübn., 2 *Hydraecia paludis* Tutt, 8 *Hydraecia lucens* Freyer, 50 *Arenostola brevilinea* Fenn, 30 *A. phragmitidis,* 2 *Nonagria dissoluta* Treits., 8 *Nonagria neurica* Hübn., 15 *C. maritima,* 1 *Eustrotia uncula* Clerck, 3 *Zanclognatha cribrumalis* Hübn., 1 *Lasiocampa callunae* L., and 5 *C. senex* were noted. The next evening we searched the marram heads at Southwold after dark for *Euxoa cursoria* Hufn. which seemed distinctly localised, a favourite area being very near to the shore. Searching the Lyme Grass revealed a few fresh *Arenostola elymi* Treits. The traps which were left to run until dawn only produced 3 *cursoria* and 5 *elymi.* Other traps at Walberswick had produced similar species to the previous night. On the 21st *Hyloicus pinastri* Linn. was a surprise at a trap placed in the reed beds. On the 22nd *Papilio machaon* L. larvae were found to be fully grown in the Broads and one imago was seen. That night at Southwold the cooler air seemed to favour searching the marram heads as *cursoria* and *elymi* were more common than on previous nights.

My next trip was North to Derbyshire in a bid for *Plusia interrogationis* Linn. The early evening of 26th July seemed ideal, so I set off feeling confident to the calm moorland. On arrival I found John Fenn and two local Derybshire collectors were already setting up their traps. *P. interrogationis* was in very fresh condition and other good "plusias" were *festucae* and *bractea.* The next morning I inspected moorland posts with John. It was rather breezy and sunny and we found that *interrogationis* preferred to rest on old tree stumps which gave it excellent camouflage and also made it very difficult for us to box. Two *Apatele menyanthidis* View. and 1 *Saturnia pavonia* Linn. larvae were also found. The pleasant day breeze suddenly developed into a very wild gale force wind shortly before dusk and spoiled a promising night. Indeed, by midnight the wind was even stronger and I was surprised to find 25 species of macros in the traps the next morning, including the required 2 *interrogationis* to complete my series.

A surprise at Oversley Wood in Warwickshire on 2nd August were two immaculate *Harpyia bicuspis* Borkh. which were almost certainly part of a second brood in this excep-

tionally hot year. I would be interested to know if there are any other records of second brood *bicuspis.*

On 7th August I left England for a fortnight's collecting in Ireland with William Coster. I was impressed by the strangeness of the locations, and particularly the general desolation of such as the Burren. I have arranged with Bill to report on the detailed collecting in a separate article.

On 3rd September Andrew and I travelled to Kent, where, arriving at Dungeness shortly after dark, we set up two m.v. traps and two actinics. We then travelled a few miles inland and set up a further 4 m.v. traps near and amongst marsh mallow plants. On close inspection of the large plants with torches 4 *Hydraecia hucherardi* Mabille were located. The traps were left running until dawn when on inspection a further 3 *hucherardi* were found, also very welcome were 6 *Ennomos autumnaria* Wernb. The traps at Dungeness were most disappointing and contained very few moths, and, indeed no migrants.

There was great excitement in and around the bird observatory with numerous ornithologists dashing hurriedly to sight very rare migrant birds in the vicinity. The Dusky Thrush and Lesser Crested Tern. It was evident that there were no migrants of such note amongst the lepidoptera. The next night was extremely clear and cold, however shortly after dark 4 *hucherardi* were found on their foodplants and another 6 visited the traps—enough for us both to complete a reasonable series. Our other m.v.s left running by woodland had produced another *autumnaria.* We left Kent the next morning pleased with our excursion but rather surprised at the lack of migrants, especially after learning of such a good bird migration and also of a good lepidoptera migration in the south-west.

During September I regularly ran traps in local Warwickshire woods for *Anchoscelis helvola* Linn. but was surprised by its scarcity in woods where I had formerly seen it in good numbers. Surprises at Oakley Wood were *Aporophyla nigra* Haw. and *Antitype flaricincta* Schiff. on 18th and 24th respectively.

Gusset Wood in the Chilterns on 20th September produced only 15 species, including 4 beautifully marked *Tiliacea aurago* Schiff. Whilst Salcey Forest on 23rd September produced 20 species, including 6 *Asphalia diluta* Schiff., 3 *Dryobotodes eremita* Fab., 1 *Tiliacea citrage* Linn. and a small *Philudoria potatoria* Linn. which must have had a partial second brood in this remarkable year.

On 25th September Andrew and I again set out, this time for Dorset, arriving at Studland after a 3½-hour journey. We set up 4 m.v. traps and then took ourselves to Durleston Head, Swanage, where we sited a further 4 m.v. traps from two generators and also 3 actinics. There was a torrential downpour as we were switching on and we dashed quickly up to the shelter of the car. This torrential downpour with strong winds eventually subsided into a clear night. We inspected the traps at 12.30 a.m. and were pleased to find about 30 *Aporophyla*

australis Boisd. which we both needed. Also plentiful were *Eumichtis lichenea* Hübn., *A. nigra, Leucochlaena hispida* Geyer and *Leucania l-album* Linn., while *Peridroma porphyria* Schiff. presented the only migrant. We topped up our generators and returned to the car for the night situated in the car park near the Castle Hotel. But there was calamity during the night! At 7 a.m. we rose as usual and made our expectant way down to the traps. The first thing I saw out of the ordinary was a cone from one of the traps lying isolated in some bushes. By now full of apprehension, we hurried on down and were horrified and dismayed by a sight perhaps dreaded more than any other by collectors—the complete wrecking of collecting equipment! My generator had been bodily lifted and thrown head over tail and the choke with it. Both traps had been dismembered and parts slung everywhere as if caught in a tornado. M.V. bulbs had been tossed down the cliff, but saved luckily by the long trail of flex, the reels landing up in tree branches having been prevented a full drop down the cliff. Other parts were found over a wide area. We walked angrily on towards Andrew's equipment which we found had suffered even worse treatment. His generator had been badly battered by blows from rocks and boulders. A petrol can was left unrecognisable.

Rather shattered by these events, we left the matter in the hands of the police and hurried anxiously over to the other traps at Studland rather later than anticipated. It was with some relief we found them intact. But just as gratifying and thrilling for me was to find a perfect *Agrius convoluli* L.—my first night-flying migrant hawkmoth. But even such a prize was overshadowed by the disaster at Durleston Head and, at the time, my excitement was understandably dampened.

We travelled back to Warwickshire later in the morning feeling bewildered and despondent.

In a case such as this other collectors may be interested to appreciate that, apart from damage to equipment very considerable inconvenience and loss of collecting hours can ensure because the police necessarily retain the more damaged articles pending any court case.

As to whether collectors can insure against such an event happening is doubtful—human nature in some cases being what it is. Yet on the bright side, in 10 years collecting this has only happened once!

Nevertheless, after two weeks breathing space for recovery I found myself eager again for a night in the open collecting and set out for Dorset again on the 16th October, but this time determined to give Durleston Head a wide berth. Seven m.v. lights were run at Studland in the shelter of the macrocarpa trees. Although rather breezy, a good 27 species of macros were noted. The active arrival of a Red Admiral at 10.30 p.m. caused the greatest excitement. *Lithophane leauteri* Boisd. was very common and 110 specimens were counted the following morning. Migrants continued to be scarce and were represented by 4 *P. porphyria* Schiff. and 1 *Leucania albipuncta* Schiff.

On the misty and mild evening of 25th October, Oversley Wood gave forth another surprise in the form of *L. ornitopus*. *Erranis defoliaria* Clerck was common and very variable as usual, and *Colotois pennaria* Linn. was extremely fresh and included some attractive dark red forms. The following day was similarly mild, calm and overcast and because the weather forecasters predicted no change I decided to set off for the New Forest at 1 p.m. But arriving at Brokenhurst at 4 p.m. I was surprised to find a clear sky and a corresponding drop in temperature. Undeterred by this, I sugared an extensive round of oaks and then set up my m.v. traps and actinics. In between 5 p.m. and 7 p.m. there was a good deal at sugar, *C. vaccinii* being very common, also a few *Allophyes oxyacanthae* Linn., *Agrochola lota* Clerck, *A. circellaris* Hufn. and *Eupsilia transversa* Hufn. By 8 p.m. the temperature was as low as 38°F., but at 11.45 p.m. the sight of cloud cover was very welcome, this brought about a rise to 42°F. by 12.45 p.m. I kept my traps running until 6 a.m. by which time I had been rewarded for my patience with a very fresh *L. ornitopus*.

Looking back on 1976, it was a pleasure when collecting in such a hot summer to be able to set out fully confident of a dry expedition ahead. Yet even in such a season, there were times when I found myself drenched and looking angrily up at the opening skies. Although a good year for some of the better migrants, I was disappointed that in the main few of these came my way.

EARLY INSECT ACTIVITY IN THE STRATHCLYDE REGION. — In the early afternoon of 9th January, 1977 I found a single *Coccinella septempunctata* Linn. walking near the top of a fence post at the southern margin of the wood behind my house at Milton-of-Campsie. Although the day was sunny and quite mild, the beetle was on the shaded side of the post, not in the sun as might be expected.

One of the museum's taxidermists, Mr. D. Raines, reported to me that he had seen and captured a caterpillar walking on the snow on Ben Lomond at an altitude of 2,300 ft. (checked at time of capture with the Ordnance Survey map), also on the 9th. Unfortunately the creature later escaped, but the description may be of some use — about one inch long, brown with a yellow and black pattern, not hairy.

The weather over the Christmas and New Year period was noticeably milder than previously, with only a few frosts and no snow. This doubtless was an important factor in causing such early activity. On the night of the 9th, this milder spell was abruptly ended, two to three inches of snow falling, followed by prolonged frosts. — J. COOTER, Natural History Department, Art Gallery and Museum, Kelvingrove, Glasgow, G3 8AG.

Argiolus in West Herts. and in Cumbria

By Lt. Col. Charles F. Cowan*

The arrival in areas between Tring and Dunstable of *Celastrina argiolus* (L.), the Holly Blue, was reported in 1970 (vol. 82, p. 216). The species was common in spring and late summer for three years, but suffered drastic decline in 1973 and thereafter was not seen before I left the district in June 1975. Reasons for such fluctuations have often been queried but seldom discussed.

The complete disappearance of the insect over a wide area east of Tring, in which I watched earnestly for it for those three years 1973-1975 was quite remarkable. Only about three adults were seen of the spring brood during summer 1973, and three larvae were found on ivy that November—very late. Thereafter, none.

My impression is that the decline in this instance was caused by cold and wind. The butterfly, although tough and resilient and having an extensive holarctic range, is light and frail. It needs warm still days for mating. Such were lacking. Spring and early summer of 1973 were cold, and a gusty wind, usually westerly or sou'west, often blew for days on end. The spring emergence of the adults was very protracted, and as individuals emerged they were carried away before they could mate.

This must be a critical borderline area for *C. argiolus.* The Grand Union Canal here reaches its highest level east of the Severn Basin watershed, just 400 feet. A drop of rain falling here might flow north down Thistle Brook into the Vale of Aylesbury, then west down the Thame to join the Thames ten miles below Oxford; or south down the Bulbourne and the Gade into the Thames at Staines; or north down Whistle Brook and the Ousel to join the Great Ouse at Newport Pagnell, swing east and come out in the Wash. This saddle in the Chilterns watershed may accentuate climatic changes just sufficiently to affect the insect's security of tenure periodically.

Having moved to Cumbria, I was delighted to see *C. argiolus* flying over a considerable area for about three weeks from 10th May, 1976. From here northwards the species is normally single-brooded, so I was astonished to see a specimen outside my back door at Grange-over-Sands on 9th August. This abnormal second brood, which I am reliably told also flew in 1975, was seen frequently during August. Ovipositing was watched on ivy, and larvae nearly full-grown could easily be found in early September. Most had disappeared by 10th September, and one held captive pupated on that date. Localities where the butterfly was watched, and/or the larva seen, are: Ambleside (10-km. sq. 35/30), Allithwaite (34/37), Broughton-in-Furness (34/28), Grange (34/47), Field Broughton, Penny Bridge and Townhead (34/38), and Ulverston (34/27).

*4 Thornfield Terrace, Grange-over-Sands, Cumbria, LA11 7DR.

The glorious summers of 1975 and 1976 no doubt enabled *C. argiolus* to produce these exceptional second broods. The continuous warm and windless weather favoured early mating, and helped the resultant larvae to feed up and pupate remarkably early.

This species is usually said to pupate "underneath a leaf", and in the past I spent many days turning over leaves but gleaning nothing other than dirty spider-webs. The larva, as it reaches the purplish pre-pupa phase, strays from its natal twig, and I suspect, usually drops to the floor unless it finds a comfortable cranny in time. Then it will attach itself to a fallen leaf for pupation. In the wandering stage it is, like *Anthocharis cardamines* (L.), very determined, and one which I held captive in 1971 escaped; to pupate, as I discovered when it emerged next spring, underneath the Grandfather Clock. All others chose one of the detached leaves supplied on the floor of the cage, after prolonged examination. If disturbed, they would shift to another.

OECIACUS HIRUNDINIS JENYNS (HEMIPTERA-HETEROPTERA) IN SOMERSET. — Dr. R. Nash's note (*Ent. Rec.*, **88**: 265) on *O. hirundinis* prompts me to record that I found this species quite common in nests of the House Martin taken from Shapwick Manor, nr. Bridgewater, Somerset, in January 1974, with up to 20 in one nest. Massee (*Ent. mon. Mag.*, 1955: **91**: 14) does not record this species from Somerset. — H. C. J. GODFREY, Pinehurst West, Swiffe Lane, Broadoak, Heathfield, Sussex.

THE JERSEY TIGER (EUPLAGIA QUDRIPUNCTARIA HBN.). — In his notes on Migrant Lepidoptera in Cornwall in August 1976 (*Ent. Rec.*, **89**: 41) Mr. Brian Elliott "assumes" a second generation of the Jersey Tiger. This is a univoltine species with a long imaginal life, during which it migrates and sometimes aestivates (as in Rhodes) until sexually mature in September. As Mr. Elliott suggests, it may have migrated across the Channel or from Devon to the trap at Housel Bay. For further details of its behaviour in N. France see my notes in *Ent. Rec.*, **84**: 230-31. — E. P. WILTSHIRE, 140 Marsham Court, Marsham Street, London, SW1 P4JY.

VANESSA ATALANTA L. IN FEBRUARY. — Near Wooton Copse, in the New Forest, about noon on 13th February, 1977, I noted a *Vanessa atalanta* flying weakly just above the ground — presumably it had recently emerged from hibernation. — D. A. LEPARD, Silver Crest, Silver Street, Sway, Lymington, Hants.

The Influence of the Hot Summer of 1976 on Leaf-mining Lepidoptera

By A. M. Emmet*

It is common knowledge that many species of Lepidoptera whose adults emerge in mid-summer have a smaller second generation in the autumn, if the climatic conditions have been favourable. Something quite different happens with some of the univoltine leaf-miners whose larvae in normal years feed only in the autumn: they are liable to have a "second" generation before the "first" has taken place.

Tischeria ekebladella (Bjerkander) (*complanella* Hbn.) is a good example. Ford (1949) and other authors correctly give its larval season as "9-10". Hering (1957 (2): 859) states of its larva (my translation), "From September onwards; in warmer localities there is also a summer generation." I omitted this information in my description of the species (Heath *et al.*, 1976: 273), because I did not consider it had any application to the British Isles. I was wrong. In 1976, this summer brood occurred abundantly all over the country from Kent to Cornwall and at least as far north as Dumfries-shire. The first mines I noted were at Bedford Purlieus, Northants (VC 32) on the 14th July. On the 21st, well advanced mines were plentiful on low oaks at Barton Mills, Suffolk (VC 26); I collected some and they produced adults between the 10th and 30th August. Then on the 26th July I picked another batch at Danbury, Essex (VC 18); these already contained pupae and yielded imagines between the 4th and 6th August. Thereafter, wherever I went this summer generation was in evidence.

Are we to infer that this insect correctly predicted the hot weather which was in store for us? If so, the Meteorological Office should employ a microlepidopterist instead of a computer for its long-range forecasts. It is more probable that the mini-heatwave of early May was responsible, by inducing the parent generation to emerge about three weeks before their usual season. It is, nevertheless, obscure why the ensuing ova hatched early, whereas in normal years they apparently aestivate from June till September regardless of temperature.

Certain other species of leaf-miner behaved in a similar fashion. On the 17th July, after the AGM of the Wicken Fen Committee, we took part in the traditional perambulation of the Fen and noted that the mines of *Acrocercops imperialella* (Zeller) and *Cosmopterix drurella* (Fabricius) were already plentiful. I cannot say for certain whether the adults from these emerged later in 1976, but the occurrence of tenanted mines again in October suggests that this was the case.

During July and August I also noted larvae of several nepticulid species which do not normally occur until the autumn, including *Stigmella ulmivora* (Fologne), *S. oxyacanthella* (Stainton), *S. luteella* (Stainton) and *S. viscerella* (Stainton). Our older text-books describe the first three as bivoltine; this is shown to be sometimes correct, but only in exceptional years such as 1976.

* Labrey Cottage, Victoria Gardens, Saffron Walden, Essex.

Some other species seemed to be unaffected by the climatic conditions. The relatively scarce *Tischeria dodonaea* Stainton, which has a life-history similar to that of *T. ekebladella,* had no summer brood. Likewise, none of the species of the nepticulid genus *Ectoedemia* deviated from the normal univoltine pattern of behaviour. It is true that *E. subbimaculella* (Haworth) was much more abundant than usual; however, these "population explosions" are a well-known characteristic of the genus and occur in cool as well as warm summers.

Bivoltine species departed little from their standard routine, though *Stigmella hybnerella* (Hbn.), which not infrequently manages a third generation, appeared to complete a fourth before the relatively cold autumn put an end to its activity.

Those species which had the exceptional summer generation displayed no common pattern of behaviour when it came to the autumn. *T. ekebladella* appeared at the usual time and in customary numbers. *S. luteella,* on the other hand, occurred in unwonted profusion; possibly its summer generation had evaded parasites whose life-cycle had got out of step with that of their host. *S. ulmivora* and *S. viscerella* differed in that they were unusually scarce in the autumn. Though I have evidence that some of the summer mines of the former produced adults in late August, it is likely that most of their pupae are overwintering; in other words, though their larvae appeared up to two months ahead of their normal time, the species remained essentially univoltine. This double pattern of behaviour seems to be found in several other species of *Stigmella.* The diversity of response to climatic conditions which were experienced by all species alike is remarkable.

References

Ford, L. T., 1949. *A guide to the smaller British Lepidoptera,* 230 pp. London.

Heath, J. et al., 1976. *The moths and butterflies of Great Britain and Ireland,* Vol. I, 343 pp., 13 pls., 85 figs. London.

Hering, E. M., 1957. *Bestimungstabellen der Blattminen von Europa,* Vol. II, 1185 pp. 's-Gravenhage.

Notes and Observations

CURTIS AND WOOD ON ERIOPYGODES IMBECILLA FABR. (LEP., NOCTUIDAE). — Mr. Whitebread asks (*Ent. Rec.*, **89**: 13) whether *E. imbecilla* is a "rediscovered" British species. I had recently investigated this question, and I concluded that, on the evidence available, the answer is "probably no".

The first reference to it appears to be that in John Curtis' *Guide to an arrangement of British insects,* p. 146; it is as follows: "Graphiphora Hubn. (no.) 10. imbecilla.? Hub."

Curtis' *Guide* was published in shilling sheets from 1829 to 1831. It was designed as a label list for collectors, an index to his own cabinet and of his wants for additions to it, and an advertisement of his beautifully illustrated *British Entomology,* parts of which were appearing at the same time. The introduction explains the symbols attached to many of the species listed, from which it appears that *E. imbecilla* (a) had *not* been discovered as British by Curtis himself or by his friend J. C. Dale, (b) that it was still a "desideratum" for his cabinet, (c) that it was *not,* however, considered by Curtis to be a doubtful native, though no indication is given of his reason for introducing it as British. The question mark in the entry is not explained; it may refer to doubt about either the identification of the species or about its author.

Curtis may have some genuine British discoveries to his credit, but he was not discriminating about what he put in his cabinet or what he listed in his *Guide,* or, indeed, in some of the illustrations to *British Entomology.* One can only say that he was not as bad in these respects as his contemporary, J. F. Stephens. Curtis was certainly a keen, but also an imaginative, collector: J. C. Dale, who accompanied him on an enterprising collecting trip to the Highlands in 1825, recorded in his diary: "Curtis *thought* he saw an *apollo*". Somehow, this "thought" became later translated into a widespread belief that *Parnassius apollo* Linnaeus could claim Scottish nationality.

Against this background, W. Wood in his *Index Entomologicus* was surely justified in relegating *E. imbecilla* to the doubtfuls; and we can safely retain the name of Dr. G. A. N. Horton as the discoverer of the species in Britain. — R. F. BRETHERTON, Folly Hill, Birtley Green, Bramley, Guildford, Surrey, GU5 0LE.

Migrant Lepidoptera in Britain in early March 1977

Mr. Peter Davey, a meteorologist, says that between the 26th February and the 4th March, 1977 was a period of exceptional migratory weather, and that in western Spain, the Canary Isles and north-west Africa the temperature rose at that time to far above normal, with the airstream from there reaching southern England by the 2nd March. It seems likely therefore that the early migrant species recorded hereunder were associated in a movement to this country at that time, except possibly the Humming-bird Hawkmoths which may have hibernated here. — J.M.C.-H.

EUBLEMMA OSTRINA HBN. (PURPLE MARBLED) IN DEVON. — On 5th March, 1977, I took from my m.v. trap here a specimen of this rare moth. It was in fresh condition.—G. S. WOOLLATT, Ainsdale, Common Lane, Beer, Devon.

RHODOMETRA SACRARIA L. (VESTAL) AND EUBLEMMA OSTRINA HBN. (PURPLE MARBLED) IN OXFORDSHIRE. — I took single specimens of these two species in my m.v. trap at Botley, on 3rd March, 1977. — Professor D. F. OWEN, 2 Shelford Place, Headington, Oxford.

MACROGLOSSUM STELLATARUM L. IN MARCH. — On the afternoon of 4th March, 1977, a Humming-bird Hawkmoth was flying up and down in front of the wall of a house near here. It was a very warm day and the wall was in a sunny and sheltered situation. To my deep regret I had no net with me and my efforts at capture with a pillbox were, needless to say, quite unavailing. — D. A. LEPARD, Silver Crest, Silver Street, Sway, Lymington, Hants.

AN EARLY MARCH MACROGLOSSUM STELLATARUM L. AT WIMBLEDON. — On the 2nd March, 1977, I saw a Humming-bird Hawkmoth here in my garden, and another (or the same one) here the following day. — N. D. RILEY, 7 McKay Road, Wimbledon, London, S.W.20.

EUBLEMMA PARVA HBN. (SMALL MARBLED) AT WESTON-SUPER-MARE IN EARLY MARCH. — It may be of interest to record a specimen of the above species in my moth trap in this garden on the morning of 3rd March, 1977. — C. S. H. BLATHWAYT, Amalfi, 27 South Road, Weston-super-Mare, Somerset.

HELIOTHIS PELTIGERA D. & S. (BORDERED STRAW) IN MARCH. — On the nights of 2nd/3rd March and 4th/5th March, 1977, single, pale, rather worn male examples of this migrant moth entered my trap among about 60 of the usual spring resident species. Increasing numbers thereafter to the 11th produced no more migrants. — R. FAIRCLOUGH, Blencathra, Deanoak Lane, Leigh, Reigate, Surrey.

MARCH MIGRANTS IN HAMPSHIRE. — In 1977, I have had here in my m.v. trap to date: *Agrotis ipsilon* Hufn. (Dark Swordgrass) and *Autographa gamma* L. (Silver Y), both on 2nd March; *Nomophila noctuella* D. & S., on 3rd March; *A. ipsilon,* on 10th March; *Plutella xylostella* L. (*maculipennis* Curtis) (Diamond-back) on 16th March. — DENZIL W. H. FFENNELL, Martyr Worthy Place, Nr. Winchester, Hants., 17.iii.1977.

THE PAINTED LADY IN SOUTH WALES IN MARCH 1977. — On March 4th, at 3.15 p.m., I noticed here in full sunlight what I thought at first was a dead leaf fluttering close to the south-east facing outside wall of the courtyard. Then I realised it was a butterfly too large and light-coloured for a Small Tortoiseshell, but surely not *C. cardui*! Anyway, it soon settled in a crevice in the stonework and closed its wings before I could identify it. However, I managed to get it into a jam jar, and then of course I had no doubt as to its identity, it was indeed *cardui*. After I let it go, it settled and spread its wings, a beautiful specimen in perfect condition, and eventually flew off over the house and out of sight.

Until now, the earliest *cardui* I had seen was one in a lane above Newlyn, Cornwall, on 11th March in the 1930's—I think in 1936—which was settled on a grass bank. There, it might I suppose, have been a very early migrant. In the recent case, however, the fact that the butterfly sought a dark crevice, closed its wings and stayed motionless and apparently dormant till it was disturbed about five minutes later rather points, I would think, to a hibernator tempted out by the warm sun. The day was sunny and warm, but only where sheltered from a blustering W.N.W. wind. I may mention that last summer we had rather more Painted Ladies here than usual, though not really plentiful as were the Red Admirals. — J. P. SANKEY-BARKER, Plas Llangattock, Crickhowell, Breconshire. [Unlike the Tortoiseshells, the Peacock and very occasionally the Red Admiral, the Painted Lady as far as is known, does not hibernate. — Editor.]

THE PAINTED LADY (CYNTHIA CARDUI L.) IN CORNWALL IN MARCH. — We saw a Painted Lady sunbathing and in flight at Treveal, nr. St. Ives, Cornwall (SW 474401) on 2nd March. — J. B. and S. BOTTOMLEY, Venwyn Cottage, Hellesveor Place, St. Ives, Cornwall, TR26 3AQ, 3.iii.1977.

THE PAINTED LADY IN HAMPSHIRE IN EARLY MARCH 1977. — On March 4th I saw a Painted Lady (*Cynthis cardui* L.) fly up and settle on the church wall at Buriton, near Petersfield. The weather was sunny and the insect remained for a short time with its wings open. — Miss JOSEPHINE A. PLEASANT, The Pightle, Mill Lane, Lindford, Borden, Hants.

Current Literature

Sphecid Wasps of the World: A Generic Revision by **R. M. Bohart** and **A. S. Menke** in collaboration with **H. S. Court, F. D. Parker, E. E. Grissell** and **D. P. Levin.** ix + 695 pp., 2 coloured plates and 189 text figs., 4to. University of California Press, 1976. £34.

This is the first modern world revision of the Sphecidae, a large and diversified group made up of eleven subfamilies consisting of 226 genera and 33 tribes. The authors state in the introduction that among the aims of the book is for (1) providing a worldwide perspective of the family, including a reclassification of all categories down to generic level, diagnoses, keys for all categories down through subgenus, illustrations, and distributional data; (2) the summarisation of previously published data, including biological information; (3) the notation of problem areas within various taxa; (4) the establishment of a standardised morphological nomenclature for the family; (5) provision of an up-to-date generic catalogue; and (6) compilation of species and their synonyms.

After the introduction there are brief chapters on general behaviour, zoogeography and morphology (the latter contains a useful glossary of morphological terms). Then follows the main part of the work: keys to the subfamilies and tribes of Sphecidae. These are in eleven sections covering the subfamilies Ampulicinae, Sphecinae, Pemphredoninae, Astatinae, Laphyragoginae, Larrinae, Crabroninae, Entomosericinae, Xenosphecinae, Nyssoninae and Philanthinae. Each of these key sections includes diagnostic characters, systematics, biology, a checklist of species (with authors, dates and areas of occurrence), and each is profusely illustrated with structural and other details. The work concludes with a bibliography of over 1,400 references cited, and an index of names down to subspecific level.

Although there are ostensibly only 189 text figures, many of these consist of a series of separate diagrams, so that in fact the book contains altogether several hundred illustrations. Many of these are of genitalia, wing venation, facial portraits and other anatomical details, in addition to examples of the whole insect. These full figure profiles by J. Jay, the many facial portraits by K. Fulk and other illustrations by E. Park, M. Benson and the co-editors round off a fine and detailed work. Clearly printed in double columns on good quality paper and strongly bound in blue cloth, this important monograph should be available to all students of the subject. — J.M.C.-H.

LEPIDOPTERISTS IN KENT

A meeting will be held at the Maidstone Museum on Saturday, 23rd April, 1977, at 6.30 p.m., for all those interested in the Butterflies and Moths of Kent. All readers of *The Entomologist's Record* will be welcome. There will be no charge. Small exhibits will be appreciated.

Eric Phips, Natural History Department,

Maidstone Museum and Art Gallery, St. Faiths Street, Maidstone, Kent

EAST SUSSEX ENTOMOLOGISTS

We would be delighted to hear from readers of the *Record* who are resident in this vice-county and would like to hear more about the newly formed "Wealden Entomology Group" whose interests are organised into promoting greater communication between members in the County. Interested persons should write to:

The Hon. Secretary, Mr. M. Hadley,

7 Beverington Close, Eastbourne, Sussex, BN21 2SB

or

The Hon. Treasurer, Mr. A. E. C. Adams,

Perrings Farm, Wood Green, Wadhurst, Kent

THE PROFESSOR HERING MEMORIAL RESEARCH FUND

The British Entomological and Natural History Society announces that awards may be made from this Fund for the promotion of entomological research with particular emphasis on: —

(a) Leaf miners,
(b) Diptera, particularly Trypetidae and Agromyzidae,
(c) Lepidoptera, particularly Microlepidoptera,
(d) General entomology,

in the above order of preference, having regard to the suitability of candidates and of the plan of work proposed.

Awards may be made to assist travelling and other expenses necessary to field work, for the study of collections, for the attendance at conferences, or exceptionally, for the costs of publication of finished work. In total they are not likely to exceed £200 in 1977/78.

Applicants should send a statement, if possible in sextuplicate, of their qualifications, of their plan of work, and of the precise objects and amount for which an award is sought, to A. M. Emmet, M.B.E., T.D., M.A., F.L.S., F.R.E.S., Hon. Secretary, Labrey Cottage, Victoria Gardens, Saffron Walden, Essex, CB11 3AF, as soon as possible, and in any case not later than 30th September, 1977.

EXCHANGES AND WANTS

Wanted. — Geiger, R. 1958: "The Climate near the Ground" (translated by M. N. Steward). Harvard University Press, Cambridge, Mass., U.S.A. — Write stating price to: *Ulf Carlberg,* Atlasvägen 53I, S-131 00 Nacka, SWEDEN.

For Sale. — Separates of Col. Emmet's "Notes on the British Nepticulidae". Unbound, with printed paper cover. Price 90p, including postage. — Apply to *P. A. Sokoloff,* 4 Steep Close, Orpington, Kent, BR6 6DS.

For Sale. — We hold a few copies of a large number of separates of papers that have appeared in the *Record.* These are available at reasonable prices. — Please advise your requirements to: *P. A. Sokoloff,* 4 Steep Close, Orpington, Kent, BR6 6DS.

THE ENTOMOLOGIST'S RECORD
AND JOURNAL OF VARIATION

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

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CONTENTS

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The Occurrence of *Agrius convolvuli* L. in 1976 as Recorded from Peacehaven, Sussex

By Colin Pratt*

Further to a recent short note (*Ent. Rec.*, 1976, **88**: 232) reporting the capture of a male Convolvulus Hawk moth during July 1976, the following details have been extracted from my diary for that year. My purpose is to make the data available to other interested students of migratory trends and occurrences.

Observations

A purpose grown 7ft. plot of flowering *Nicotiana* plants (back-lit by a shielded 100 watt tungsten bulb for ease of observation) provided by far the main source of attraction to the moths—although as can be seen, the M.V. trap did take a few specimens.

A watch was kept for *A. convolvuli* for an hour each night after darkness fell, and on their arrival the swooping pre-feeding flight immediately became apparent in the comparatively yellowish light of the tungsten electric light bulb. After a few short passes they would settle down to feed, hovering gently, moving up and down the flower patch. Their wing-beats could be plainly heard as almost the whole length of the moth's proboscis was carried outstretched horizontally from flower to flower—probing each floral head for nectar. Few of the Convolvulus Hawks appeared to have a petal colour preference and several made as if to examine my person as I stood motionless before them, watching. Only in a single case did the electronic flash from my camera disturb a moth sufficiently for it to abandon the *Nicotiana*—although in contrast, they were all extremely sensitive to slight changes in light intensity, especially those caused or accompanied by movement.

Weather conditions naturally varied throughout the principal period of captures, but in the main flight-time temperatures of 10 to 12 degrees Centigrade, on still moonlit nights, were recorded. The odd cloudy and slightly gusty evening with improved temperatures occurred, but the most marked exception was September 10th when heavy cold rain and a gale failed to deter a female needing nectar. Thus it would seem that the normally favourable meteorological conditions for moths play a reduced role in the flight pattern of *A. convolvuli,* when compared to most other British species —although in my own experience, several species of Sphingidae fly in such weather, especially *S. ligustri* L. Nevertheless consistency was established, and the highest numerical results obtained on clear, cool, moonlit nights.

Despite releases, no previously noted specimens were seen subsequent to capture. An interesting phenomenon thus became apparent—during the 12-day period August 30th to September 10th inclusive, over a third of the insects noted were observed at exactly the same time each night and a

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

figure approaching two-thirds appeared within the same 15 minute period. This trait was noted in Italy by Redfern (1962), as is their more general flight behaviour by Barrett (1895), Tutt (1901), Newman (1965), and many others. Altogether it was a memorable and inspiring visual experience with which mere descriptions, however graphic, cannot compete.

The details of the moths observed are as follows—those bearing an asterisk being taken at M.V. light.

Date	*B.S.T. — p.m.*	*Sex*	*Condition*
July 6th-7th	Unknown	M	Very poor*
August 26th	11.15	F	Good*
August 30th	8.30	M	Excellent
August 30th	8.40	M	Excellent
August 30th	9.05	F	Excellent
September 1st	8.15	M	Excellent
September 1st	9.15	M	Excellent
September 1st	11.30	F	Excellent*
September 2nd	8.15	M	Excellent
September 2nd	9.15	F	Excellent
September 3rd	8.15	F	Excellent
September 4th	8.25	M	Excellent
September 6th	8.20	M	Excellent
September 6th	8.45	M	Good
September 7th	9.05	M	Good
September 8th	8.15	M	Poor
September 9th	8.15	M	Good
September 9th	8.15	M	Poor
September 10th	8.30	F	Excellent
September 16th	7.55	M	Poor
September 18th	Before 11.00	M	Good*
September 19th-20th	After 10.00	M	Good*
September 20th	10.10	F	Excellent*
September 28th	Before 10.00	F	Excellent*
September 30th-October 1st	Unknown	M	Excellent*
October 3rd-4th	Unknown	M	Good*

The terms used to document the individual moth's physical condition are amplified as follows: — (a) Excellent—Perfect, a specimen without flaw. (b) Good—Wing with small but noticable scale of cilia deficiency. (c) Poor—Wings with excessive scale and cilia deficiency, including splits. (d) Very poor—Wing ends frayed with chips and splits, scales deficient to the point of transparency, etc.

To partially summarise the above list of observations, a total of 26 *A. convolvuli* were noted with a male/female ratio of approximately 2 to 1. The average male wingspan was 10.5 cm.—females 11.7 cm. Almost all the males examined were referable either to ab. *variegata* Tutt, or to ab. *virgata* Tutt.

The Question of Origin — Foreign or British

The unusual and consistently excellent conditions encountered, both of moths and weather, gave rise to several questions regarding their origin. There being few precedents for such an occurrence this century, the possibilities included a local

British brood having developed. Mr. Harman's recent interesting note (*Ent. Rec.*, **88**: 231) makes this rare event much more likely locally, with his discovery of larvae and a pupa in Kent during late August. Nevertheless, with only the sometimes misleading physical condition of the insects (Williams, 1965) on which to base such speculation, thought was given to a relatively unknown area in determining the phenomenon—the amount of fat present.

Fat Content

As Dr. Williams (1965) quoted, in his interesting book on the migratory habits of insects, that the quantity of fat present in a migratory insect appears to drop dramatically during a long flight, I decided to take this rather rare opportunity to carry out fat determinations on six *A. convolvuli*. The moths selected were the first capture in July as a "known" migrant for comparison, plus a further two males and three females from dates spanning all of September.

Although I anticipated possible substantial individual variations in fat content, I hoped that the result would at least be a check for the presence of a British brood. However, complicating the issue was the fact that a British bred moth flying locally could produce similar low fat yields to that envisaged from a foreign visitor—but only after prolonged activity. This was a secondary reason for recording, and reproducing in this paper, individual moth's physical condition on capture. The results of the chemical analysis were as follows and were calculated from the moths dry weight, excluding wings.

Date of Capture	*Sex*	*Fat %*
July 6th-7th	M	13
September 2nd	F	5.3
September 10th	F	6.3
September 19th-20th	M	31
September 20th	F	1.0
September 20th-October 1st	M	52

Whilst some of the fat contents were as anticipated, and that to be expected from a mixture of both foreign and locally bred moths, the females examined appeared to pose a problem. Although perhaps unlikely, and as far as is known without precedent, the results suggest a sexual differential in original average fat content, ex pupa. Nevertheless, the figures obtained are similar to parameters experienced by Dr. Williams when studying *P. gamma* L. in a similar manner. Apart from the aforementioned, there appears to be little published data on this rather specialised subject, but the figure of 52% found in a late male is not a surprising one—in a freshly emerged insect. It would seem that much of the fat is possibly a kind of "reserve supply" of available energy but more research is

necessary on this subject, especially on sexual comparisons ex pupa, and the relative utilisations of fat and nectar as fuels in lepidoptera, before firm conclusions can be drawn from this source alone. Further origin indicators were thus searched for, resulting in my attentions being directed to the closer examination of the females caught, and their eggs within.

On the Subject of Ova

As the total pre-emergence time spent alive often seems to affect sexual maturity (Newman, 1965), presumably mainly in the pupal stage, and as this must be relatively short if a home-grown brood is to have emerged, I hoped that examination of the mature ova ratio would provide further clues to the moths origins. There are, however, two complicating factors. As the species is also migratory to Europe and not indigenous (Newman, 1965) it seems likely that many records, especially those of a later date from Britain, are of offspring of migratory moths breeding on the continent. Therefore, if this is true the aforementioned tendency to sexual immaturity should also be present in these moths, but hopefully to a lesser extent. There is also the question of mature ova ratio present ex pupa. Several authors (Ross, 1965 and Williams, 1965) state that ova can develop in insects after emergence—from, and to, what extent in *A. convolvuli* under this year's conditions was a matter of conjecture. To minimise this effect, all dissected females were kept alive and fairly quiescent for a week before examination—allowing time for as much ova development as would normally occur.

Four females were kept in a quest for fertile ova, one being entrusted to my friend and colleague, Mr. G. Botwright of Newhaven. A variety of different techniques, temperatures and humidity changes were tried—all being completely unsuccessful. A single example was therefore dissected revealing a total of 315 slightly eliptical eggs—some of which were immature, their sizes varying widely when measured across the major axis. By comparison, the mature darker green ova measured on average 1,250 microns (1.25 mm.) with a relatively small size differential. Curiously, the mature egg size is somewhat at odds with several previous records of ova being noted or dissected out (Buckler, 1887 and Newman, 1965), these being larger than those previously noted. As the opportunity presented itself, two further female *A. convolvuli* were dissected—many of the resultant immature ova taking the form of half-filled egg capsules. The following details were also recorded: —

Date of Capture	*Number of Ova*	*% Mature Ova*	*Size of Immature Ova across major axis in microns*
September 2nd	315	80	500 to 900
September 10th	305	None	Mostly 300
September 20th	254	20	220 to 515

As can be seen, perhaps by coincidence, an almost complete series of ova maturity ratios were noted in only three moths—at least two of which had not deposited any eggs prior to capture (see the very large numbers of eggs encountered). Being a series, the result can only indicate that either no rule for ova ratios exists under the conditions examined, or, that both foreign and locally bred moths were in flight—but at different periods.

Although statistically a very small sample, only roughly a third of the ova examined were of sufficient maturity to be fertilised by (in this year of comparative plenty) an available male. At the stages examined in each moth's development, two-thirds of the eggs were immature—probably permanently. In the light of this information, perhaps the high rate of sexual immaturity should be suspected as a major cause of the relative paucity of larval records for *A. convolvuli* in this country, considering the number of adults noted. In addition, Newman (1965) quotes that the general experience amongst breeders of the species is one of an abnormally high mortality rate in the early stages of development after egg laying—due to ova infertility, and later, larval weakness.

The microscopic examination of *A. convolvuli* ova appeared to be a promising additional line of enquiry regarding origin differentiation—but again, obviously more research is necessary.

Comparisons

Two further potential sources of relevant information are available—the correlation of the conditions and dates of capture with other sightings throughout Britain, and similarly, accurate comparison of the sex ratios encountered. Both are unavailable to me at this time.

Time and Theory

After checking many sources, it would seem that a minimum period of approximately three months is required for *A. convolvuli* to complete a life cycle in Britain, without forcing. There are many records which exceed this figure, all individual stages being subject to wide fluctuations in time scale. However, bearing in mind the heat of the 1976 summer, it seems not an unreasonable period on which to base any time cycle calculations. This time element thus virtually eliminates the possibility of a British emergence before late September—unless an extremely unusual, very early, and unrecorded migration occurred. Notwithstanding the time element, an early local brood should yield different fat and ova results than those found. However, a migration during late August/early September would explain the comparatively low fat contents, high mature ova ratio, and the decline in physical condition from September 6th onwards. Should a local brood have developed from a late June/early July migration, one would expect a re-occurrence of the species in late September —but again with specific and different characteristics. The British bred specimens may be physically smaller but in very

good condition, with high fat contents and a low ova maturity ratio in the female. Many of these criteria were achieved in all the insects examined from the latter section of the noted observations. Consistency to the theory of a local late September emergence is strengthened when plotting time against occurrence using a histogram.

I understand there has been a further, somewhat complicating, series of *A. convolvuli* observations from very late September through mid-October—at least one female of which laid fertile ova. Without analysis of the individuals involved, one can only postulate the theory that they were migratory in origin, possibly having the same parents as the main earlier influx—yet spending sufficient time in the pupal stage to yield sexually fertile adults.

Tentative Conclusions

Balancing all the information available to me at this time, it would therefore seem that a relatively small migration took place in late June/early July, possibly trans-continentally—fertile ova being successfully deposited, at least locally, in Sussex and Kent. In late August and the first third of September a massive migration of the species occurred, probably emerging in Europe—many, but by no means all, being infertile moths. The second third of September saw the gradual phasing out (and/or moving on) of the migration, with possibly the first odd local emergence. The final section of the month, including the October record, saw a numerically small resurgence of occurrences due to the local emergence proper. Regarding the final apparent migration noted in the South at this time, it is concluded that it was not recorded from the Peacehaven locality.

As was stated at the beginning, my intention has been to provide information, but also to stimulate the reporting of sightings and possibly different interpretations of the available data concerning the 1976 occurrences of *A. convolvuli,* if considered appropriate.

Perhaps the most important point to arise from this paper, is the necessity for an assemblage of all available information on the species as noted during 1976. Otherwise, it will be a rather difficult task to cement the firm and important conclusions available, surveyed as they are at the moment, from a single geographical (and personal) standpoint.

As a final conclusion, to quote a friend, a lepidopterist of some 60 years standing: "The more one learns about moths, the less one really knows".

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Collecting in Malaysia: January and February 1976

By C. G. M. de Worms, M.A., Ph.D., F.R.E.S.*

During the first week in August 1972, I had the opportunity and pleasure of not only sampling some of the remarkable lepidoptera which that grand country Malaysia produces, but also of meeting the leading experts, notably Henry Barlow and "Wickie" Fleming (*vide Ent. Rec.* (1973), **85**: 205-210, 238-240). At that date they gave me a very cordial invitation to make a return and longer stay since I was then only able to fit in the inside of a week's intensive collecting as I was on my way to the International Congress of Entomology in Canberra. During 1975 Anthony Owston had also migrated to Kuala Lumpur. They gave me a further combined and most pressing invitation to try some collecting at a different time of the year, preferably during the early months when it was likely to be fairly rainy with a greater profusion of insects. Soon after Christmas, 1975 seemed to present the best chance. However, I found it not possible to set out until the end of January 1976, and flew direct to Kuala Lumpur on the 28th of that month, arriving after a few stops en route in the late afternoon of January 29th which was the virtual start of the Chinese New Year celebrations. I was met by Henry Barlow who had arranged for me to stay with him over the holiday weekend at his country seat at Genting, on the Selangor Pahang border some 25 miles to the north-east of the city. I had first been to this most attractive resort soon after he had taken it over in 1972 when it was in disrepair. But in the 3½ years interval he had completely transformed it into a most comfortable and luxurious home which was to be my headquarters on three separate occasions. It is perched on a small eminence at just over 2,000 ft. with a mile-long rough drive leading up from the main road. It produced a biturong the evening my host drove me from the airport. I was greeted by a blazing sun on the morning of the 30th which, as events turned out, was to persist with hardly a break for my whole stay of a month. There had been hardly any rain after a very wet spell just after Christmas. It was very pleasant reacquainting myself with the surrounding country and thick forest over most of the big estate of several hundred acres. It was not long before I spotted that magnificent butterfly *Trogonoptera brookiana albescens* Rothschild sailing round some of the tree tops and settling on yellow flowers. Late that afternoon one was seen hovering over lantana blossom near the house, which has a small valley of luscious herbage leading to the foot of the large waterfall. This was alive with blues mainly as before with both sexes of *Jamides celeno aelianus* Fab., while the chief satyrid was *Ypthima pandocus corticaria* Butler. *Eurema hecabe contubernalis* Moore was the most numerous Grass yellow and *Neptis hylas papaja* Moore seemed to be gliding about in most

* Three Oaks, Shores Road, Horsell, Woking, Surrey.

of the glades, but on the whole butterflies were perhaps not in such profusion in this region as they were in 1972, since quite a lot of the forest had been cleared since then. However, there was quite enough on the wing to keep me busy, especially on the 31st when many Danaids were apparent, mainly the yellow winged *Danaus aspasia* Fab. and the very striped *D. vulgaris macrina* Fruhstorfer, together with both sexes of *Euploea mulciber* Cramer. Later that afternoon with my host, we saw a female *brookiana* fluttering quite low down which eluded us. However, he netted a fine *Delias hyparete metarete* Butler. The chief feature of February 1st, another very fine day, was seeing a huge female *Troides amphrisus ruficollis* Butler sail along the drive where several other Danaids appeared, including *Euploea tulliolus ledereri* C. & R. Felder, while a notable local record was a male of the scarce nymphaline *Euripus nyctelius euploeoides* C. & R. Felder which was at rest in the drive. While the male is like a Neptis, the female which I took in 1972 is a mimic of *Euploea diocletianus* Fab.

That evening my host took me and some of his relatives also staying with him, up the fairly newly constructed road to the Genting Highlands Hotels complex situated at some 5,000 ft., about ten miles from his house. As we ascended we saw orchids growing in profusion on many trees, but when we reached the summit we found a dense mass of humanity enjoying the Chinese New Year festivities. After a hurried meal we quickly descended after dark and were rewarded with a remarkable night for moths. Our first halt was at a local police station where we were welcomed to look round. Nearly every wall where there were lights, was smothered in species of all sizes, from some huge Uraniids to some small noctuids and geometers. We had a remarkable harvest there and still more at a lighted archway further down which was also well patronised mainly by members of the Footman genus (Lithosiids), such as the distinctly local species *Chionaema malayensis* Hampson and *C. selangorica* Hampson. Some huge Cossids were also sitting round the lights.

The next two days, February 2nd and 3rd, were spent in the grounds of Genting where *T. brookiana* was seen on several occasions, chiefly before midday. On the latter date a very large Saturniid moth alighted on one of the doors after dark. It turned to be a perfect male example of *Antheraea helferi* Moor, measuring nearly 8 in. in expanse.

The next day, the 4th, I accompanied my host and his relatives into the capital down the winding Gombak valley. Later that morning a taxi drove me the 100 miles along the northern road to Tapah, near Ipoh, and after a halt for lunch the further 40 miles up to nearly 5,000 ft. to the famous Cameron Highlands. This resort consists of a fairly large hotel centre originally cut out of the primary forest and surrounding a large size golf course on which it was possible to meet an occasional roving tiger, as was the case in July 1975. It was a delightful setting, though I arrived on the only wet day of

my stay. However, some people visiting my headquarters at Foster's Hotel kindly drove me up to the Brinchang summit at 6,000 ft. through the extensive tea estates, but unfortunately in a deluge. But it was soon apparent that the lepidoptera were not numerous in this region at this season, possibly due to the ravages of collecting them for sale, though the forest around had not been in any way depleted or destroyed. *Lampides baeticus* L. seemed to be the commonest blue. On February 6th, I penetrated one of the forest trails near a large house called Hopetoun where the chief capture was the brightly coloured *Delias ninus* Wallace. It was on the 8th that I discovered the old road leading south which ascended through a thick tree plantation and was bordered on the north side by unbroken forest which it was not possible to penetrate owing to the local political situation. However, it was the most fruitful area in the vicinity. By parading up and down this road a good many very desirable insects were met with, notably the Riodinid *Abisara neophron chelina* Fruhstorfer. On the next morning there was the delightful little nymphaline *Limenitis daraxa theoda* Fruhstrofer, looking like a small White Admiral. This stretch of road was mostly my daily venue. Another much more notable capture on this beat on the 12th was *Delias belladonna malayana* Pendlebury, which is exceedingly local and normally only found near the summit of Brinchang. Another visit to the Hopetoun locality produced on the 11th *Precis atlites* L. and *Papilio helenus* L. On the morning of the 13th in very fine conditions, I took a taxi to the top of Brinchang at some 6,500 ft. and collected along part of the road near the top where a good many Danaids were flying. These turned out to be mainly *Danaus similis sinopion* Fruhstorfer and *D. sita ethologica* Swinhoe.

After just over a week's very pleasant, though perhaps none too profitable sojourn in these delightful surroundings, I set out on February 14th once more by taxi for the capital at a cost of the equivalent of just £10 for the 150 miles. I was welcomed again by Henry Barlow, this time in one of the few thunderstorms during my stay, but to his dismay there had been no rain at his estate where it was so badly needed. On the Sunday, the 15th, we had a gathering of entomologists for the day, including "Wickie" and Alix Fleming, Anthony Owston and his wife, and Harry Traill, but not many insects were on the move, though a nice black and white Skipper, *Tagiades ultra* Evans, was taken inside the large living room which measured a length of some 60 ft. The next two days were spent once more surveying the forest area round the Genting estate. Both sexes of *Euthalia iapis ruseda* Moore and of *E. monina* Fab. were seen with their respective remarkable dimorphism, but nothing of especial note was seen on this my second visit to this locality. On the 18th my host drove me into the city for a few days visit to Anthony Owston in his fine house on the outskirts just bordering the golf course, but the thermometer on his verandah that afternoon registered

94°F. in the shade. *Appias lyncidas vasava* Fruhstorfer was the main pierid on the wing in his garden. However, the following day "Wickie" Fleming called for me and we drove to the Ampang Reservoir a few miles outside the city. This well-known and productive locality is surrounded by thick forest where not long before some other collectors saw a black panther cross the path where they were having lunch. After skirting the small reservoir we made our way along a very shaded forest path overshadowed by thick vegetation. One of our earliest captures was the magnificent Amathusiid *Amathuxidia amathaon dilucida* Honrath. This male example had quite a noticeably pleasant scent. One of the larger tailless Papilios which found its way into our net was the female of *Atrophaneura nox erebus* Wallace with the smaller *Papilio demoleon* Cramer. Another interesting inhabitant was the spectacular Satyrid *Neorina loewii neophyta* Fruhstorfer, with its peculiar white patch on the hindwings. One of the largest of the Oak Blues, *Arhopala centaurus* Fab., was another capture together with the huge Skipper *Gangara thyrsis* Fab. Several species of Jamides were present, including *J. coeruleus* Druce. The following day, February 20th, my host took me to the famous locality of Ulu Langat which I had sampled to good advantage in 1972, but this time we went further up the valley on a rough track. A good many patches of prawns were placed at intervals along the pathway. These were well patronised in due course, as were some damp patches from which a cloud of butterflies arose, mostly Pierids. The most spectacular was the orange *Appias nero figulina* Butler, with some *A. indra plana* Butler. Our bait attracted no less than six of the grand white *Poliura delphis concha* Vollenhoeven, with a good many *Polyura athamas samatha* Moore as well *P. hebe chersoneus* Fruhstorfer and *Charaxes bernardus cepax* Fruhstorfer. Some of the Sword-tails (*Graphium*) were about in numbers, including *G. agetes iponus* Fruhstorfer and *G. antiphates itamputi* Butler, also the tailless *G. delertessii* Guérin-Méneville and the scarce *G. ramaceus pendleburyi* Corbet. The handsome Danaid *Euploea diocletianus* flew lazily around our car. There was also quite a host of small Lycaenids and a grand *Troides helena cerberus* C. & R. Felder sailed over us as we were leaving.

The next morning, the 21st, I accompanied the Owstons back to the Genting estate for my third stay with Henry Barlow. On the way we halted at a very inviting spot about 20 miles up the Gombak Valley where quite a lot was flying, including the huge *Papilio memnon agenor* L., also the almost equally large female of *P. nephelus annulus* Pendlebury. The female of *Euthalia iapis puseda* Moore was also in evidence with several smaller Arhopalas and Skippers flitting along a small waterfall. Over the weekend at the Genting estate, I again saw several *T. brookiana,* all flying high, as well as some of the Danaids already mentioned and the female of *Euthalia monina* Fab. taken in the house of my host Henry

Barlow. On the evening of February 24th he drove me to a party in Kuala Lumpur attended by the Flemings. They took me back to their home at Bukit Rotan, some 30 miles to the north-east of the city. I had paid a brief visit there in 1972 and was not to be disappointed this time, since not only was there a good assortment in the garden and at their bait trap, but we revisited some of the best localities in the district. On the 25th, we went over to the Bukit Tarek reserve which had proved so fruitful on my previous trip, and was no less so on this occasion when we strewed the roadway with dumps of prawns which proved very attractive to the Pierids and Papilios. *G. antiphates* was well to the fore with a few *Appias nero* and many *Saletara liberia distanti* Butler, while *Graphium bathycles bathycloides* Honrath and *G. agamemnon* L. were frequent visitors to the bait. Several tailed Lycaenids were seen, including *Eooxylides tharis distanti* Riley, *Zeltus amassa maximinianus* Fruhstorfer and the scarce *Ancema blanka* Nicéville with its silver underside. *Polyura hebe* and *P. delphis* also appeared here.

The next two days we visited forest reserves, the first on the 26th called Sungei Buloh which was not too productive, though there were a good many *Neptis, Euremas* and also *Euthalia iapis.* However, the one reserve on the 27th known as Rantan Panjang provided many more insects along its forest paths where once more the prawns proved very attractive to most of the *Graphium* species enumerated earlier. Several fine Nymphalines were also present, including the splendid *Parthenos sylvia lilacinus* Butler and several *Cirrochroa emalea* Guérin-Méneville which liked to alight on one's hand, while *Athyma pravara helma* Fruhstorfer and *A. asura idita* Moore were also sailing round the thick foliage, and the large Danaid *Euploea camaralzeman paraclaudina* Pendelbury. Back at Bukit Rotan the chief visitors to the traps were the huge *Amathusia phidippus* L. and the unusual Satyrid *Elymnias hypermnestra beatrice* Fruhstorfer with its dentated wings and blue spotting, mainly the females. Our final day on February 28th we spent at Kuala Selangor which is virtually on the Strait of Malacca, but our only capture was a small form of *Danaus chrysippus* L. Later that evening my hosts drove me to the airport at Kuala Lumpur, which I left at midnight and with a stop at Bahrain reached Heathrow the morning of February 29th. So ended a most delightful and rewarding month in the Malay Peninsula, made all the more enjoyable thanks to the kindness of many friends and in particular Henry Barlow, the Flemings and Anthony Owston and his wife, who acted as my hosts, and not least too to Datu Harry Traill who showed us the fine number of local moths he had been accumulating over several years. On my return a great many of these were identified by Mr. W. H. Tams, also by Mr. Alan Hayes and Mrs. Maureen Lane, all of the British Museum (Natural History), and I am very indebted to them for their valuable assistance. The identification of the

butterflies was greatly simplified since the publication in 1975 of Mr. Wickham Fleming's very fine two volumes on "The Butterflies of West Malaysia and Singapore", both admirably illustrating in colour most of the thousand species already recorded in that large region. But I have thought it advisable on this occasion not to add a complete list of the some 200 species of lepidoptera we saw, owing to the large amount of additional print space it would occupy. In the text I have enumerated the principal species. In all, we noted 17 Papilionidae, 14 Pieridae, 10 Danaidae, 7 Satyridae, 3 Amathusiidae, 23 Nymphalidae, 2 Riodinidae, at least 40 Lycaenidae, and some 25 Hesperidae.

THE GRIZZLED SKIPPER (PYRGUS MALVAE L.) ON THE ISLE OF SHEPPEY, KENT. — I am pleased to be able to report that for the last three years I have found specimens of *Pyrgus malvae* Linn. at Minster, on the Isle of Sheppey (OS: 51/94-73-). I note from Mr. Chalmers-Hunt's *Butterflies and Moths of Kent,* Vol. 1 that he found only one record of this butterfly for the island and that he considered it doubtful that it was still present. Similarly, *The Provisional Distribution Maps,* issued by the Biological Records Centre in 1975, show no records in this area at all.

As I have taken it consistently, it would appear to be fairly well established, on rough open ground about 250 yards from the sea. I have taken only small numbers each year, but over an area almost half a mile in depth, between April and early June. Because of its scarcity, I have released all except one of my captures—having kept the first, which was in fact taken by my then eight-year-old daughter, who came home one day and described seeing it sitting on some tall grass. She gave quite an accurate description, and I did not believe her. So she went back and caught it!

I have no knowledge of it elsewhere on the island, although one would think its likely range would extend eastwards along the cliffs. I certainly hope this is the case, as building development is encroaching apace. — GEOFFREY N. BURTON, "Mar-y-Mar", Minster Drive, Minster-in-Sheppey, Kent, ME12 2NG.

HYLES LINEATA LIVORNICA ESPER (STRIPED HAWK-MOTH) AND ABRAXAS SYLVATA SCOPOLI (CLOUDED MAGPIE) ON THE ISLE OF WIGHT. — On the night of 27th June, 1976, which was particularly mild, at about 11 p.m. a male specimen of *H.l. livornica* was seen flying around my m.v. trap. I duly netted it to find that one antenna was missing and one forewing was slightly damaged. On the same night I took a fresh specimen of *A. sylvata.* — PETER J. CRAMP, Stone Cross Cottage, Godshill, I.o.W.

Strange Visitors to a Suburban Garden

By M. J. Sterling*

I have been running a 125 watt mercury vapour trap in the back garden of the family house in suburban Winchester for some three years, and throughout that period I have been astonished by a great number of most unexpected, and I may say most welcome, stray insects, particularly those associated with the river valleys in Hampshire. The trap is run on a fairly typical piece of Hampshire dry chalk dowland, and is almost entirely enclosed by beech trees and a suburban housing estate, thus it would be fair to expect that catches would consist almost entirely of downland or of beech-feeding species. This not being the case, particularly with regard to the number of insects usually associated with the reedbed and water meadow plus sallow carr vegetation in the river valleys, I have attempted to find out under what conditions these insects stray, and the place of origin of the strays.

As regards the origin of these species, the nearest stretch of productive river valley is that portion of the River Itchen which runs through VC 12 (North Hampshire), thus in order to make a comparison of captures in that area with captures from the downs, a trap with a 6 or a 15 watt actinic tube was run on about 15 occasions during the year. Catches in this trap did not give a really coherent picture of the lepidoptera contained in the valley, thus I have also drawn on information provided in "The Butterflies and Moths of Hampshire and the Isle of Wight" (1975) by B. Goater, concerning this area.

The actinic traps showed that if, as occasionally happened this summer, the air temperature dropped below 7°C. the moths in the marshes showed an almost total disinclination to move. On the occasions this happened the only species recorded were *Mythimna pallens* Linn., *Agrotis exclamationis* Linn., *Diarsia rubi* View., *Arenostola phragmitidis* Hübn., *Hydraecia petasitis* Doubl., *Thumata senex* Hübn.; all species which could have bred within 5 yards of the location of the trap. If the temperature remained above 7°C. there was a greater diversity of species, numbers increasing in proportion to the temperature until, on nights when the temperature did not drop below 11°C. one might expect, depending on the time of year, from the reedbeds: *Mythimna obsoleta* Hübn., *Mythimna straminea* Treits., *Chilodes maritima* Taus., *Rhizedra lutosa* Hübn., *Archanara geminipuncta* Haw., *Photedes pygmina* Haw.; from the water meadows: *Celaena haworthii* Curt., *Schrankia costaestrigalis* Steph., *Apamea unanimis* Hübn., *Apamea ophiogramma* Esp.; and from the sallow carr: *Xanthia togata* Esp., *Clostera curtula* Linn., *Harpyia furcula* Clerck., *Pterostoma palpina* Clerck.

It has always been known that if the night minimum air temperature does not drop below 15°C., insects will tend to stray from the marshes, but empirical evidence, for this year

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at least, tends to show that the phenomenon of straying occurs at much lower temperatures. On the 15th May, when the air temperature dropped to a mere 4°C., the 125 watt M.V. produced a fairly fresh *Harpyia furcula* Clerck., which is most unusual up on the chalk, but common in the river valley. Apart from this complete perversity in the period 10.vii to 16.vii.76 inclusive, in which the modal night minimum temperature was 10°C. and the mean 9.8°C., seven river valley insects appeared in the M.V. trap including: 3 *Apamea ophiogramma* Esp., 2 *Mythimna straminea* Treits., 1 *Coenobia rufa* Haw. and 1 *Hypenodes turfosalis* Wocke. Admittedly this was the week immediately following the period of intense heat, but three of the insects came on the 16th. Furthermore, between the 16th and the end of July when the average night minimum temperature was under 12°C. a further six insects including: 2 *Harpyia furcula* Clerck., 1 *Apamea ophiogramma* Esp., 1 *Nymphula nymphaeata* Linn., 1 *Coenobia rufa* Haw. and 1 *Celaena leucostigma* Hübn. appeared. It is just possible to argue that the frequency of these strays was caused by the heatwave upsetting their normal pattern of development in some way, but this would not, I think, hold true for the 2 *Celaena haworthii* Curt., caught on the 9th and the 22nd August or indeed the *Thumata senex* Hübn. and *Donacaula mucronellus* D. & S., taken on the 16th June, or the *Crambus pascuella* Linn., taken on the next night, a week before the heatwave set in, or indeed the *Lobophora halterata* Hufn., which braved, or was carried by, a wind of some 16 m.p.h. to arrive in the trap on the 1st June.

Throughout the period from the 23rd June to the 9th July the temperature dropped below 15°C. on only one occasion, on the night of the 24th June, when nothing of interest turned up. During this period the garden trap suffered two invasions, one in the period between the 26th June and 1st July, and the other between the 4th and 8th July. In the first of these periods I recorded: 2 *Eustrotia uncula* Clerck., 1 *Cleoceris viminalis* Fab., 3 *Chilodes maritima* Taus., 1 *Lobophora sexalata* Retz., 2 *Mythimna pudorina* D. & S., 2 *Enargia ypsillon* D. & S. and 1 *Schrankia costaestrigalis* Steph. The second produced: 2 *Mythimna straminea* Treits., 3 *Cleoceris viminalis* Fab., 3 *Schrankia costaestrigalis* Steph., 1 *Apamea ophiogramma* Esp., 1 *Enargia ypsillon* D. & S. and 1 *Nymphula nymphaeata* Linn.

The critical figure for the migration of marshland lepidoptera I would agree was 15°C., but on the basis of this research I would mark 15°C. as the point at which the tendency to stray becomes a wholesale exodus, and that barring the occasional freak, such as my perverse *furcula,* one might expect stray insects from the marshes in a trap if the temperature does not fall below about 11°C.

It would be valid criticism of these conclusions to say that migration is a matter of degree and that whereas a trap placed two miles from the nearest river valley, as the M.V. trap is, will produce marshland species at temperatures of

11°C., a trap placed five or six miles away requires that the temperature should not drop below 15°C. in order to produce the same insects, and it would seem plausible that the great majority of marshland insects caught on the chalk immediately North of Winchester came from the nearest available reed-beds, water meadows and carr in the Itchen valley. However, there is the strongest possible evidence to suggest that a fair number of these insects came either from much further down the valley in the underworked part of VC 11 (South Hampshire), or that they did not come from the Itchen at all, but flew seven or eight miles across the downs from the Test valley.

As I have said previously, the nearest stretch of really productive river valley is that part of the Itchen which runs through VC 12. The impression I have from "The Butterflies and Moths of Hampshire and the Isle of Wight", is that this part of the valley has been worked very thoroughly, thus one would expect the strays taken on the downs to reflect the composition of the moth population in that part of the valley, as it is the locality nearest to the downland trap. This is by no means the case. Of the species taken in the M.V. trap, 10 out of 20 are accorded the status of scarce, or rarer, by recorders in the Itchen valley. These include: *Mythimna pudorina* D. & S., *Celaena leucostigma* Hübn., *Chilodes maritima* Taus., *Eustrotia uncula* Clerck., *Hypenodes turfosalis* Wocke., *Lobophora halterata* Hufn., *Harpyia bifida* Brahm, *Harpyia furcula* Clerck., *Donacaula mucronellus* D. & S. and *Crambus pascuella* Linn. Of those insects accorded the status of common in that part of the Itchen valley, *Mythimna obsoleta* Hübn. and *Archanara geminipuncta* Haw. did not appear at all in spite of the fact that conditions were favourable. Furthermore, in the case of *Chilodes maritima* Taus. whilst three specimens were caught in the VC 12 Itchen valley in atrocious condition, at the same time the garden M.V. light produced three fairly fresh specimens which may be taken as an indication of emanation from another locality.

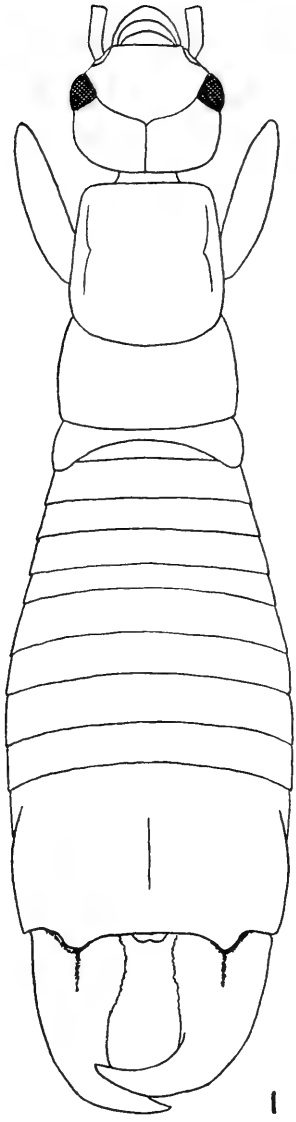
I am not really conversant with the idea of flght lines, but I would assume that one of the major determinants is the prevailing direction of air movement. If this is so, it would need an easterly, or at worst a north-easterly, breeze to encourage insects from the VC 12 Itchen valley to move towards the trap, and between May and September this happened for a prolonged period only once, producing 2 *Celaena haworthii* Curt., a VC 12 speciality to the extent that those two are new vice-county records for South Hampshire. Marshland insects came to the trap on 26 nights between May and September. On five occasions the wind was blowing from the south, and on the other 19 it blew from the north or west. On this evidence I think it fair to assume that some, if not most, of these insects do not come from the nearest stretch of river valley north of Winchester, but come from the Test, seven or eight miles west of Winchester or from a more

southerly part of the Itchen, five or six miles away. I favour the idea that the insects fly over from the Test valley, firstly because on 19 occasions out of 26 the wind would have tended to carry specimens in the right direction and secondly, because I can see no reason for the insects which occur eight miles upstream in VC 12 not occurring in the more southerly part of the valley, as there is a strong tendency for these insects to stray, and it would seem reasonable to assume that for every specimen that strayed away from its natural habitat and ended up on top of a down, there will be several less adventurous individuals straying, but keeping more or less to their particular natural habitats, foodplants, etc. in the river valley.

In conclusion, it would seem that most of the marshland insects coming to my trap on the downs two miles above the Itchen valley come not from that source but from the Test valley, some seven or eight miles away. Furthermore, the fact that half of these insects were caught when the average night minimum air temperature was only between 10°C. and 11°C. tends to show that marshland moths will stray considerable distances on a relatively cold night.

SOME UNUSUAL DATES AT WOKING DURING 1976. — The phenomenal weather during the summer of 1976 brought out many species often several weeks ahead of their normal time of emergence and also produced a lot of second and third broods in August and the early autumn which are designated by an asterisk. I have thought it of interest to record the following in chronological order: —

June 12th, *Comibaena pustulata* Hufn. and *Cleora rhomboidaria* D. & S.; June 13th, *Leucania pallens* L. and *Laspeyria flexula* D. & S.; June 15th, *Plusia chrysitis* L. and *Alcis repandata* L.; June 16th, *Habrosyne derasa* L. and *Ellopia fasciaria* L.; June 17th, *Diacrisia sannio* L.; June 25th, *Cryphia perla* D. & S. and *Parastichtis suspecta* Hübn.; June 25th, *Euproctis similis* L.; June 27th, *Tethea duplaris* L. and *Ectropis bistortata* Borkh.*; June 26th, *Euxoa nigricans* L.; June 29th, *Eilema complana* L.; June 30th, *Eilema deplana* Esp.; July 1st, *Drepana binaria* Hufn.*, *Apamea scolopacina* Esp. and *Procus literosa* Haworth; July 3rd, *Crocallis elinguaria* L.; July 10th, *Apamea secalis* L. and *Colocasia coryli* L.*; July 11th, *Triphaena comes* Hübn.; July 13th, *Amphipyra pyramidea* and *Harpyia furcula* Clerck*; July 14th, *Amathes baja* D. & S.; July 16th, *Calothysanis amata* L.*; July 17th, *Amathes xanthographa* L.; July 18th, *Nonagria typhae* Thunb.; July 30th, *Catocala nupta* L.; August 2nd, *Semiothisa alternaria* Hübn.*; August 23rd, *Cosymbia albipunctata* Hufn.*; September 1st, *Calothysanis amata* L.*; September 12th, *Scopula imitaria* Hübn.*; September 18th, *Sterrha aversata* L.*; September 20th, *Drepana binaria* Hufn.*; October 22nd, *Deuteronomos fuscantaria* Stephens. — C. G. M. DE WORMS, Three Oaks, Woking.



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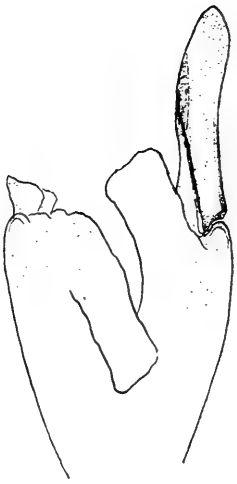

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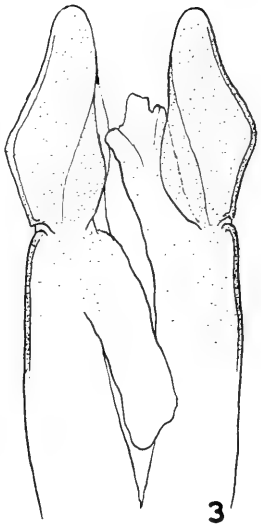

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Figs. 1, 2: *Anisolabis rubella* sp.n. — 1, male holotype; 2, male genitalia.
Fig. 3: *Anisolabis kudagae* Burr, male genitalia.

The Identity of *Anisolabis kudagae* Burr (Dermaptera: Carcinophoridae), and a Description of a New Species of *Anisolabis* from Sri Lanka

By A. Brindle*

Only two species of *Anisolabis* have previously been recorded from Sri Lanka; these species are endemic and can be easily separated from each other on external characters, *A. greeni* Burr having rudimentary elytra, whilst *A. kudagae* Burr lacks all traces of elytra. In an account of the Dermaptera of Ceylon (Brindle, 1971), based on material collected by the Lund University Expedition in 1962, two series of specimens agreeing on external characters with the descriptions of *greeni* and *kudagae* were recorded, but since the male genitalia of the latter corresponded with the genus *Euborellia* and not *Anisolabis, kudgae* was transferred to *Euborellia.*

A further series of Dermaptera from Sri Lanka, collected by a team from the Geneva Museum in 1970, has recently been examined, and in this material were two species of *Anisolabis,* again agreeing with *greeni* and *kudagae.* The male genitalia of the latter, however, corresponded with *Anisolabis* and not *Euborellia.* The *kudagae* of the Lund material and the *kudagae* of the Geneva material were obviously different.

Burr (1915) figures the male genitalia of *kudagae* (Pl. XI, fig. 1) but this figure does not agree with the genitalia of the Lund *kudagae,* nor with the genitalia of the Geneva *kudagae,* so a re-examination of the male type of *kudagae* was obviously desirable.

In the Burr material, now in the general collection of Dermaptera in the British Museum (Natural History), are three specimens of *kudagae,* the male and female syntypes from Hakgala, and a third, male, from Maskeliya, the latter mentioned in Burr (1910). A collection of microscopical slides, mainly of male genitalia, and presumably those from which the figures in Burr (1915) are drawn, is also in the British Museum, near the Dermaptera collection. The slides are cross-referenced to the collection, so that any slide referring to any particular species can be easily found, although it is not always possible to correlate a slide to any particular specimen. The single slide with male genitalia labelled *Anisolabis kudagae* was examined, and this corresponds with the figure in Burr (1915).

A comparison of the male specimen named as *kudagae* from the Geneva material with the male type of *kudgae* showed that both are identical externally, and it was noted that the male type appeared to be intact, and the penultimate sternite beneath which the genitalia are situated seemed to be undisturbed. The male from Maskeliya, however, lacks the penultimate sternite and the genitalia are missing. This suggested the possibility that the genitalia on the slide marked *Anisolabis*

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kudagae actually came from the Maskeliya male. Permission was kindly given to examine the type male to check if the genitalia had been removed, and this showed that the genitalia were intact. The genitalia have now been removed and mounted in Euparal on a small piece of celluloid attached to the pin of the type male, and these genitalia correspond with the genitalia of the *kudagae* male from Geneva. It seems clear, therefore, that the male genitalia on the slide and figured in Burr (1915) as *kudagae* refer to the male specimen from Maskeliya, which represents a new species and which is separable from *kudagae* by external characters as well as by male genitalia.

There are thus three endemic species of *Anisolabis* now recorded from Sri Lanka — *greeni, kudagae,* and the new species described below. The species recorded in Brindle (1971) as *Euborellia kudagae* apparently represents a new species of *Euborellia,* but since the relevant specimens have been loaned to Dr. Srivastava of the Survey of India, in connection with the preparation of a new volume on Indian Dermaptera, I have suggested to Dr. Srivastava (*in litt.*) that he deals with this himself.

I am indebted to Dr. D. R. Ragge and Mrs. J. A Marshall of the British Museum (Natural History) for permission to examine the types mentioned.

Anisolabis **rubella** sp.n.

Anisolabis kudagae Burr: Burr, 1910, *F. Brit. India, Derm.*: 84 (partim, male from Maskeliya only).

Anisolabis kudagae Burr: Burr, 1915, *J.R. micr. Soc.,* **1915**: Pl. XI, fig. 1 (genitalia).

Shining reddish-brown, legs yellow, antennae yellowish basally, apical part of segment 3 and remaining distal segments dark brown. Cuticle of head, pronotum, and first two abdominal tergites impunctate and glabrous, other abdominal tergites punctured, the punctures increasing in size and density on posterior tergites, largest on tergite 9; last tergite more or less impunctate.

Male (fig. 1): head broad, tumid, epicranial sutures prominent, eyes small. Pronotum nearly as long as broad, widened posteriorly, mesonotum transverse, relatively long; metanotum short, hidden by mesonotum (largely due to curvature of abdomen), posterior margin concave. Abdomen broadened distally, lateral margins of tergites produced but not pointed, and those of tergites 8-9 and base of 10 rugosostriate but without ridges. Last tergite large, with a lateral curved ridge toward dorsum, posterior margin excised at each side. Penultimate sternite missing. Each branch of forceps short, broad, trigonal at base, dorsal edge blackish and prominent, inner margin with small denticulations, branches asymmetrical. Genitalia (on slide) (fig. 2) with long parameres, right paramere (position in insect) missing except for extreme base; denticulations on the distal lobes, shown in the figure in Burr (1915) not clearly visible. Length of body 13 mm., forceps

2.5 mm. Female unknown.

Holotype ♂, Maskeliya, Green: Caught at light, Maskeliya, Ceylon, 4-05 (=April 1905). British Museum (Natural History).

The type has only the front pair of legs remaining but is in excellent condition. It appears to be fully mature, so that the reddish colouration is thought to be an adult character and not due to slight immaturity. Burr (1910, p. 84) remarks "The specimen from Maskeliya, sent by Mr. Green, is somewhat smaller than the type and much lighter and redder in colour".

Anisolabis kudagae Burr

Anisolabis kudagae Burr, 1901, *J. Bombay nat. Hist. Soc.*, **14**: 320.

Anisolabis kudagae Burr: Burr, 1910, *F. Brit. India, Derm.*: 84 (partim, male and female from Hatton only).

Blackish, legs dark brown, femora blackish at base, antennae yellowish basally, dark brown distally.

Male: similar to *rubella* but pronotum strongly transverse; puncturation on abdomen finer; lateral parts of tergites 7, 8, 9 and base of 10 rugoso-striate; last tergite with a dorsolateral prominence. Penultimate sternite with posterior margin excised medially. Length of body 16.5 mm., forceps 2.5 mm. Genitalia fig. 3.

Female: similar to male but last tergite narrower, branches of forceps short, triagonal at base, almost straight and symmetrical. Length of body 13.5 mm., forceps 3.25 mm.

1 ♂, 1 ♀ syntypes, Kudaga, Hatton, Ceylon, VII/97, O.O.W. (British Museum (Natural History)).

Burr (1910) also mentions specimens from Hakgala and Patipola in the Burr material, but these specimens have not been located. The locality Hatton is also given as Hutton in various papers, but the locality labels on the types give "Hatton".

Rejected record: Northern India (Kumaon), Gangola (1968). This author places this species and *A. dubronii* Kirby in the subfamily Brachylabiinae which is an error for Carcinophorinae. *A. kudagae* is endemic to Ceylon.

The third species of *Anisolabis* from Sri Lanka, *A. greeni* Burr, is a blackish species distinct by having rudimentary elytra on the mesonotum.

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Swarming in *Opetia nigra* Mg. (Diptera, Platypezidae) and the Capture of a Female

By Ian McLean*

While collecting insects visiting blackthorn (*Prunus spinosa* L.) blossom on the afternoon of 28th April, 1976, I noticed what appeared to be a small dancing swarm of *Microphorus* (Empididae) overhead. Earlier I had "pooted" one individual from a blackthorn twig, and before leaving the locality I gently swept the swarm and collected five of the insects. Later when sorting the catch I realised the captured insects were *Opetia nigra* Mg., and amongst the five specimens swept from the swarm there was a single female (seldom found in this species). This female was not the specimen captured from the blackthorn bush, as this was a male taken in a separate tube together with other insects captured on the flowers. The swarm consisted of approximately ten individuals, and was centred about eight feet above ground. The blackthorn bush was situated on the west side of a mixed deciduous wood adjoining an area dominated by reeds (*Phragmites communis* Trin.) at Earlham Woods, Norwich (grid reference TG 1807). The weather at the time of capture was cloudy with sunny intervals and a slight northerly breeze. I cannot trace any previous published record of swarming in *O. nigra* being observed, and in fact very little is known of the biology and habits of this species.

The following day (29th April), Mr. John Ismay swept two female *O. nigra* at Norman's Burrow Wood, Norfolk (TF 8923). They were taken over low vegetation, mainly Dog's Mercury (*Mercurialis perennis* L.) in warm and sunny weather conditions. On this occasion no males were taken, so presumably these females were not associated with a swarm.

Finally, a single female *O. nigra* was taken in a yellow water trap at the edge of a field of winter wheat at Easton, Norfolk during a sampling programme for cereal aphids and their predators within the week 23rd-30th June, 1976.

John Ismay has recently checked the Collin-Verrall collection (at the Hope Department, Oxford) for female *O. nigra,* and as a result I can put on record the following captures, which give a wider range of dates than the other captures of females recorded here.

Under *O. nigra*: Chippenham Fen, 13.x.1943, J. E. Collin, 1 ♀; Newmarket, Raylands, 10.viii.1948, J. E. Collin, 1 ♀; Newmarket, Raylands, 30.iv.1949, J. E. Collin, 1 ♀.

Under *O. lonchopteroides* Curtis, now considered to be conspecific with *O. nigra*: Upware (?), 11.vii.1875, G. H. Verrall, 1 ♀; Chippenham, 7.v.1912, J. E. Collin, 1 ♀.

The reason why females are captured less often than males is unknown — possibly they fly less than the males, and are therefore less liable to be swept. They may fly for a short

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period of time sufficient only to join a swarm of males for the purpose of mating. Chandler (1976) has noted that females are often found *in copula,* which would tend to support this theory.

O. nigra appears to be widespread in Norfolk, and I can supply the following recent records for the county (those collected by J. W. Ismay are in Norwich Castle Museum): Earlham Woods (TG 1807), 11.v.1975, 1 ♂, J.W.I.; Felbrigg Woods (TG 1840), 24.x.1975, 1 ♂, J.W.I.; Dersingham Fen (TF 6729), 31.x.1975, 1 ♂, J.W.I.; Swanton Novers (TG 0131), 2.xi.1975, 1 ♂, J.W.I.; Upton Broad (TG 3813), 4.xi.1975, 1 ♂, J.W.I.; Earlham Woods (TG 1807), 28.iv.1976, 5 ♂, 1 ♀, I.F.G.M.; Norman's Burrow Wood (TF 8923), 29.iv.1976, 2 ♀, J.W.I.; Upton Broad (TG 3913), 13.vi.1976, 1 ♂, J.W.I.; Easton (TG 1210), 23-30.vi.1976, 1 ♀, I.F.G.M.

Acknowledgment

I should like to thank John Ismay (now of the Hope Department at Oxford) for kindly placing his records at my disposal for this note.

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STRYMONIDIA W-ALBUM KNOCH IN HAMPSHIRE. — In Goater's *The Butterflies and Moths of Hampshire and the Isle of Wight* (1974, p. 224) it is stated of *Strymonidia w-album*: "Rare, local and elusive in Hampshire". It may be of interest to record therefore, that on three small twigs (ca. 12 in. long) cut at random from a wych elm near Kings Somborne in mid-February, were 19 ova of this butterfly. I cut the twigs intending to bring on the half-opened flower buds indoors in order to feed *w-album* larvae on the point of hatching from Dorset ova. The tree in question was the first of its kind located during an afternoon's drive and it was only after I returned home and rather casually examined the twigs that I realised my find. A return visit a week later confirmed excellent numbers of eggs on other branches of the same tree and also on another about 200 yards away. A newly hatched larva was noted at the same time. The first tree, unfortunately, is doomed as one branch is affected with Dutch elm disease which is rampant in the area. The other tree, as yet, seems healthy. — Dr. C. J. LUCKENS, 52 Thorold Road, Bitterne Park, Southampton, SO2 4JG.

Pug Moths in the Isle of Wight in 1976

By T. D. FEARNEHOUGH*

The 1976 season was a favourable one for the pugs in this area, for not only were the moths about in greater numbers than usual, but also the larvae were remarkably free from the parasites which are prevalent amongst them in most years.

The first specimen of the season was of *Eupithecia abbreviata* Steph., found at rest on a telephone pole at Ninham on 15th April. During this month larvae of *E. tenuiata* Hbn. were present in small numbers in sallow catkins at Alverstone. *E. venosata* F. seems to be a scarce species here, for attempts to find larvae in previous years have been unsuccessful. However, on 18th June an isolated clump of bladder campion at Merston contained a larva in almost every seed head. The larvae were successfully reared on heads of red campion and were free from parasites. The usual few specimens of *E. intricata arceuthata* Freyer appeared at light in my garden during June. A specimen of *E. tantillaria* Boisd. was found on a spruce trunk on 16th June when searching for *Thera variata* D. & S.

E. haworthiata Dbldy. was an exception to the general increase, for larvae of this species normally so common in the chalk region were very scarce. None could be found in several localities tried, but eventually three larvae were found on *Clematis* on Row Down on 29th July. Tapping along hedgerows in June disturbed numerous *E. vulgata* Haw., a few *E. castigata* Hbn. and a single specimen of *E. fraxinata* Crewe. Species which came to light in the garden in larger numbers than usual were: *E. icterata* de Villiers, *E. centaureata* L., *E. vulgata, E. castigata* and the *Chloroclystis* species *coronata* Hbn. and *rectangulata* L. Single specimens of *E. tripunctaria* H.-S. and *E. sobrinata* Hbn. also occurred.

A specimen of *E. expallidata* Dbldy. came to light at Shanklin on 8th August. There appears to be no definite previous record for this species on the Island. I do not know of any locality for its foodplant in the neighbourhood. *E. phoeniceata* Rambur also came to light at Shanklin for the first time, but it has been recorded before on the Island at Freshwater by S. Knill-Jones. In all, four specimens were noted on 17th, 18th, 21st and 30th August.

Only one specimen of *E. pulchellata* Steph. came to light during the season, and searching for larvae of this species in various localities proved fruitless. Few specimens of *E. absinthiata* Cl. were attracted to light, but an isolated clump of ragwort growing in a small open space in Rowlands Wood gave no fewer than 14 larvae, presumably all of this species. They were reared on Michaelmas Daisy flowers, but half of them contained parasites.

* Drexel Cottage, 26 Green Lane, Shanklin, Isle of Wight.

A successful search for larvae of *E. subnotata* Hbn. was made at St. Helens on 5th September. They were found on plants of orache growing along the border of the salt marsh. These larvae proved to be free from parasites and were successfully reared on flower sprays of Good King Henry, which was fortunately at hand in a neighbouring weedy garden. In early September a number of pug larvae were found on Michaelmas Daisy flowers. Several moths which emerged in October were those of *G. pumilata* Hbn.

I ought to mention several unsuccessful searches that I made. The wonderful show of maple blossom in the spring tempted me to try for larvae of *E. inturbata* Hbn., which has never been recorded from the Island, but no larvae were forthcoming. Larvae of *E. plumbeolata* Haw. were recorded by Prout from Bordwood in 1908. The foodplant cow-wheat still grows there, but searching by daytime disturbance, dusking and for larvae having failed over several seasons, I fear the moth is no longer with us. A concentrated effort to find larvae of *E. millefoliata* Rössler has also been fruitless, although there is a record of a larva found on Tennyson Down some years ago.

THE LARGE TORTOISESHELL (NYMPHALIS POLYCHLOROS L.). — Mr. H. J. Belsey in his account of the butterflies of the Dordogne (*Ent. Rec.*, **89**: 49-50), asks the explanation of the habit of the Large Tortoiseshell butterfly entering the house in midsummer. This is the regular habit of this univoltine species which, after a few days flight on hatching in late June, aestivates in hollow trees, old sheds, attics, etc., as quoted from Verity in my note on its life-history (*Ent. Rec.*, **79**: 243-5), reappears on the wing in late summer, then hibernates and oviposits in the following spring, truly a long imaginal stage! — E. P. WILTSHIRE, 140 Marsham Court, Marsham Street, London, SW1P 4JY.

CLEPSIS RURINANA (L.) (=SEMIALBANA (GUENEE) IN SCOTLAND. — In July 1975, some members of Imperial College made a Field Study of the Loch Ness area. Dr. Jim Brock had asked if I would identify some microlepidoptera which were collected there by Miss Anne Cameron. Among them I was very interested to find two specimens of *Clepsis rurinana* taken at Foyers. The identity of the more worn specimen was confirmed by genitalia examination. In *British Tortricoid Moths* (1973) a Scottish record is confirmed from Argyll and there are mentioned unconfirmed records from Ayrshire, Renfrewshire and Arran. In any event, this locality in Inverness represents a considerable extension northwards of the known range of the species. — DAVID AGASSIZ, St. James' Vicarage, 144 Hertford Road, Enfield, Middx.

Some Records of Migrant Lepidoptera in South Cumbria in 1976

By Dr. NEVILLE L. BIRKETT*

1976 will be long remembered for the many immigrant species of lepidoptera recorded. Much of this immigrant activity tends to fall away by the time north-west England is reached—so my records are not of any startling exotic discoveries.

Vanessa atalanta (L.). The Red Admiral has been very common in south Cumbria in the last two years. This year I saw the first specimen in Black Tom's Lane, Witherslack, on 13th June. The following day I saw two examples in my garden at Kendal Wood on the outskirts of Kendal at an altitude of 630 feet. There then followed a gap in sightings until the first week of August when a few more were seen at Kendal Wood and from then until late September the species was seen nearly every day. The last specimens were seen on 24th October, when I observed one near Rydal Water, and a friend reported seeing one high in central Lakeland on the same sunny day.

Cynthia cardui (L.). The Painted Lady never seems to be so frequent as the Red Admiral here. This year was no exception. The first one was observed at Kendal Wood on 10th August and I noted in my diary that a few were seen between 20th and 27th August in the same locality.

Agrius convovuli (L.). A rather battered female of this hawk-moth was brought to me having been found by a patient, Mrs. J. Young, on her farm at Moss Side, Crosthwaite, near Kendal. It was captured on 18th August and duly released.

Acherontia atropos (L.). On 19th August I received reports via Nurse Bracken, of Levens, of a large caterpillar having been found in a potato field at Halforth Farm, nr. Heversham. Two days later I was able to visit the owner of the farm, Mr. Wilson, who produced for me a full-fed larva of *atropos* almost literally rushing round the floor of a gold-fish bowl. On being put into a plant-pot with a suitable substratum this larva buried itself within ten minutes. A search of Mr. Wilson's potato fields revealed no further larvae. They would have been difficult to see because the haulms were dried and discoloured due to the recent drought conditions. However, a fine pupa of *atropos* was brought to me from the same field on 13th September. The pupae were kept warm and damp and in late October the free-lying pupa emerged but failed to expand its wings. It did however provide suitable musical entertainment. The second pupa emerged, a fine female, on 23rd November. This second one to emerge, which had pupated normally in soil/peat mixture, rather surprised me. Two days before the moth ecloded, the pupa had worked itself up to the surface of the soil and lay free. Gentle palpation confirmed that it was alive, but it felt very flabby. However, the moth emerged and was a perfect specimen. I do not recall reading

* Kendal Wood, New Hutton, nr. Kendal, Cumbria LA8 0AQ.

of this habit of *atropos* pupae coming to the soil surface *before* emergence of the moth.

Macroglossum stellatarum (L.). One specimen of this moth was seen at Kendal Wood on 14th August. Another specimen visited my son's brightly coloured shirt in the same garden on 23rd August. I also have note of an observation by Mr. Ralph Stokoe who saw a specimen in his garden at Cockermouth.
Agrotis ipsilon (Hufn.). First taken in the trap at Kendal Wood on 29th August. From then until mid-October it was a common visitor, especially in the middle fortnight of September.

Autographa gamma (L.). First appeared in the trap at Kendal Wood on 12th June. From then on a few occurred each night, more or less, until the end of October. From late August to mid-October this species was extremely common flying about the garden in daylight, visiting various flowers. The species was much more common than usual this year.
Udea ferrugalis (Hübn.). Decidedly less common than usual. In fact, I recorded one specimen only in my trap on 18th August.

The common "whites" were extremely plentiful during the late summer months and were a pest on the Brassicas. A very few each of *Nomophila noctuella* (D. & S.) and *Plutella xylostella* (L.) visited the trap here in late August.

LITHOPHANE LEAUTIERI BOISD. — FURTHER RECORDS FROM EAST SUSSEX. — In confirmation of previous notes regarding the favourable season enjoyed by Blair's Shoulder-knot during 1976 (*Ent. Rec.*, **89**: 13, 16), I would like to report that my m.v. trap contained a total of seven of the species between September 25th and October 24th inclusive. These catches were preceded by a single example on October 7th, 1975, in the same area. — COLIN PRATT, "Oleander", 5 View Road, Peacehaven, Newhaven, Sussex.

THE SAND DART (AGROTIS RIPAE HBN.) IN LONDON. — After the night of 27th June, 1976, I was amazed to find in the m.v. trap in my garden a specimen of *Agrotis ripae*. Normally this species is never found at any distance from the coast. It was a night when moth populations were on the move, for in the same trap were my first two specimens from this area of *Idaea vulpinaria atrosignaria* Lempke; however, the most likely explanation must be that the *ripae* specimen was accidentally brought here in a vehicle. It was a worn specimen, taken on a Sunday night after a hot weekend and the favourite resorts with the local inhabitants are on the Essex coast where the species occurs. — DAVID AGASSIZ, St. James' Vicarage, 144 Hertford Road, Enfield, Middx.

Metasyrphus nielseni D. & L. (Dipt.: Syrphidae) in the British Isles

By MARTIN C. D. SPEIGHT, Ph.D.*

With the second part of the revision of European species of *Metasyrphus* by Dusek and Laska now published (see Dusek and Laska, 1976) it is possible to establish which *Metasyrphus* species occur in the British Isles. As of now, it would appear that the only name change involving known British Isles species concerns *Syrphus arcuatus* sensu Coe (1953). Dusek and Laska (*l.c.*) demonstrate that this is a hitherto unrecognised species, which they have named *Metasyrphus nielseni.* According to their paper, the synonymy of this species is: —

Metasyrphus nielseni D. & L., 1976.
Syrphus arcuatus: Collin, 1931; Coe, 1953; nec *Scaeva arcuata* Fal., 1817.
Posthosyrphus punctifer: Hippa, 1968; nec *Syrphus punctifer* Frey in Kanervo, 1934.

This species is then the *Metasyrphus* "sp. indet." of Pt. 5 of the 2nd edition of Kloet and Hincks (1976). *M. nielseni* is known at present from the Scottish Highlands, Scandinavia (except Denmark), as far as the extreme western edge of the U.S.S.R., Czechoslovakia, Austria and N. Italy. My own experience of the species would suggest that it is in Scotland largely confined to areas of old caledonian pine forest (*Pinus sylvestris* v. *caledonicus*). However, I have found it alongside a mature stand of planted *P. sylvestris* (a Forestry Commission enclosure) some way from any natural pine woods, so *M. nielseni* may now be extending its range somewhat in Scotland. If, as seems likely, Scottish populations of *M. nielseni* are associated with *P. sylvestris,* any dramatic extension of the range of this hover-fly in the British Isles would not seem likely, seeing that relatively little of this pine species is planted by the Forestry Commission. But Dusek and Laska (*l.c.*) do suggest that other pine species perhaps support *M. nielseni* in continental Europe. At present *M. nielseni* is known from the counties of Perth and Inverness. To these I can add Aberdeen: ♂, No. 2194 (Ballachlaggan, 22nd June, 1974, coll. M.C.D.S.; ♀, No. 4794 (Glen Tanar), 21st June, 1974, coll. M.C.D.S. I have found the species at flowers of: *Galium* sp(p), *Helianthemum nummulinum* and *Potentilla erecta,* generally in rather open, park-like pine woodland.

The second part of Dusek and Laska's revision (*l.c.*) contains a most useful key to European *Metasyrphus* species and it perhaps should be mentioned that some of the *Metasyrphus* species as yet unrecorded in the British Isles *could* be present here, to judge from their known distribution. Further, various of the *Metasyrphus* involved are very similar in appearance to known British Isles species.

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Acknowledgments

I am mose grateful to Dr. Neil Bayfield (Brathens Research Station, ITE) for suggesting localities of interest which I might visit in Aberdeenshire during the course of my visit there in 1974.

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A Camberwell Beauty after Hibernation in Worcestershire. — On 3rd April, 1977 a Camberwell Beauty was seen on the Upton Warren Nature Reserve, three miles S.W. of Bromsgrove, by Mr. A. F. Jacobs, the Warden of the Reserve. It was flying along a ditch adjacent to a row of willows. I think this is the first occasion this century that the species has been seen in Worcestershire after hibernation. — J. E. Green, 25 Knoll Lane, Malvern, Worcs., WR14 3JU.

The Camberwell Beauty in Warwickshire in April 1977. — One was seen in the garden here on 4th April (Map ref. SP 385897). It alighted on a window sill for about a minute and an excellent close view of the characteristics was obtained. — E. A. Hoare, M.R.C.P.Ed., D.P.H., 28 Bulkington Lane, Nuneaton.

The Camberwell Beauty in Westmorland in April 1977. — One was seen at noon on 15th April basking in the sun below Nab Scar, Rydal Water, by Mr. Roger Beeby of 168 Knighton Church Road, Leicester. — J. Heath, Institute of Terrestrial Ecology, Abbots Ripton, Huntingdon.

The Polyphagous Habits of *Polygonia c-album* (L.)

By P. J. BAKER*

In my youth, which was spent in South London, I always associated the larvae of the Comma butterfly (*Polygonia c-album* (L.)) with stinging nettles. Doubtless they were also to be found on others of their recorded range of foodplants but, nevertheless, much searching on Mitcham Common, the Watermeads and an abandoned smallholding, showed the *Urtica* species to be the most obvious pabulum.

When I move to north-west Surrey in 1969, I soon found that *P. c-album* was quite a common butterfly locally. However, extensive searching of the abundant nettles in the neighbourhood over the next few years resulted in not a single larva being found. In spite of this, the Comma remained common and, in 1971, it was quite abundant in both broods.

The answer came in May 1972, when a Comma was noted ovipositing on a five-metre high sapling of one of the *Ulmus* species, which was growing a little apart from an adjacent hedgerow. Thereafter, Commas were regularly seen egg-laying on somewhat isolated elm saplings and bushes up to about seven metres in height. It was quite easy to find larvae and even ova if a suitable elm was examined. All that was necessary was to look at the foliage against a bright sky, when the outline of quite small larvae could be easily detected. (Note that this collecting method is also applicable to the larvae of *Cosmia affinis* (L.) and *C. pyralina* (D. & S.), although for some reason I have never found *C. diffinis* (L.) in this way, even when checking hedgerows which are purported to be a suitable habitat for this latter species.)

By mid-1974 all suitable elms in this area had fallen victim to the Dutch Elm Disease but, although the larvae could not be found on alternative foodplants, the butterfly continued to be quite common.

In the middle of 1976, my wife was kept busy clearing our gooseberry bushes (*Ribes uva—crispa* (L.)) of the many larvae with which they were infested. Two such larvae—which were not immediately recognised—duly produced rather dark imagines of the Comma butterfly. Further larvae were found over the next two months. Quite by chance I happened to observe more Comma caterpillars on the sallow (*Salix* spp.) in the garden, and further examples were obtained when working local hop vines (*Humulus lupulus* (L.) for *Hypena rostralis* (L.)).

Both the gooseberries, the sallow and the hops have been regularly worked or checked over the last few years, and this is the first occasion on which Comma larvae have been found thereon. It therefore seems highly likely that we have witnessed a definite and recent change in the habits of the local population of this insect. Although many of the early authors mention the above range of plant species as being likely pabula for the Comma, this is my first experience of any other

* Mount Vale, The Drive, Virginia Water, Surrey.

than *Urtica* and *Ulmus* spp. It would be very interesting to hear from other readers about this subject now that the elms are dead and dying over such a large part of the country.

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STICTOPERA PERNIGRA LEGRAND: A LITTLE-KNOWN NOCTUID MOTH FROM THE SEYCHELLES ISLANDS. — I spent the period November 6th to 14th, 1976 on Mahé, the largest of the Seychelles archipelago, attending the 4th Pan-African Ornithological Congress. We were some 260 delegates all housed in the spacious Mahé Beach Hotel, opened a year previously on the west coast of the island. My bedroom was on the seventh floor overlooking the sea. On the balcony was a fairly bright light which I put on each night at dusk, which fell about 7 p.m. On the 9th, there was quite an attendance of insects among which was a fairly large noctuid with rather narrow forewings and in very fresh condition. It was not until three months later that I showed it to Mr. Alan Hayes at the Natural History Museum. He at once recognised it as the species designated above, of which very few specimens are known with only a single damaged example from the Percy-Sladen Expedition of 1908, a male, in the National collection.

M. Legrand in his large monograph, *Lépidoptères des îles Seychelles et d'Aldabra* (1965) describes this insect as a form of the Madagascan species *Stictoptera antemarginata* Saalmüller, though it seems to have close affinities with the widespread and very variable eastern species *S. cucullioides* Guenée. But *S. pernigra* differs superficially very materially from these other two insects, since its hindwings are very suffused with hardly any hyaline space apparent, whereas the somewhat similar two *Stictoptera* have a very large hyaline space with a very well-defined black border to the hindwings. These points are strong evidence for considering the Seychelles insect as a separate species.

Legrand cites two males taken by the late Sir John Fryer in 1912 on île Félicité, with a further two from Beau Vallon on Mahé in 1959, a single example from Silhouette island, also in 1959, and another from Beau Vallon in 1960 taken by M. Gerber. These seem to be the only other records of this moth with all these recent captures in the Paris Museum. Mr. Hayes has shown me coloured transparencies of two of the Paris examples, which have somewhat different markings on the forewings from my specimen.

Another endemic species I also took at this balcony light, was a perfect female of the large striking pyralid *Cirrhichrista mulleralis* Legrand, with its silvery white forewings blotched with orange markings. — C. G. M. DE WORMS, Three Oaks, Woking.

Butterflies in Majorca — Supplement

By M. J. PERCEVAL, F.R.E.S.*

Following my notes on the butterflies of Majorca published in *The Record* two years ago, additional information on certain species has now become available.

Lasiommata megera L.

Some confusion seems to exist concerning the status of "*intermedia* Muschamp". Manley and Allcard (1970) refer to it as an aberration, while Bustillo and Rubio (1974) treat it as a subspecies. The original description by Muschamp (1904) is as follows:

"*Pararge megeara* (15 specimens). Wing rounder than in type as in Corsican var. *tigelius*; size of latter with exception of one male that is only a little smaller than type; markings heavier than those of *tigelius,* but not quite so pronounced as in type; underside colouring like normal Swiss insect. . . . The general appearance of this butterfly, inspite of its heavy markings, is that of *tigelius.* It was only when I confronted it with the Corsican insect that I discovered that I had not netted a series of *tigelius.* It is evidently an intermediate form, and as such I have named it *Pararge megaera* ab. *intermedia.*"

It is clear from this description that Muschamp was referring to his series as a whole and thus, if it was representative of the species in the island, Bustillo and Rubio could be correct in treating it as a subspecies. In fact, however, I can only conclude that Muschamp's series was exceptional as it is not typical of the present population of *megera* in Majorca.

Since completing my original paper I have had the opportunity of examining a series of *megera* taken by Dr. L. G. Higgins during a visit to the island in April 1975, and I am indebted to him for providing me with specimens. This series is quite ordinary, although on the small side, and I can only agree with Dr. Higgin's own view that none of his specimens could be considered as intermediate between *megera* and *paramegaera* (*tigelius*).

There would seem to be no justification for considering Majorcan *megera* as a separate subspecies. *Intermedia* is an occasional aberration and specimens as extreme as that illustrated by Manley and Allcard appear to be very uncommon. The main characteristic of Majorcan specimens is their small size, a feature I have already referred to in respect of a number of other species from the island.

Gegenes nostrodamus F.

I listed the occurrence of this species on the island as doubtful as I could find only one reference to it, a single specimen taken in 1932, more than 40 years ago. Its presence in Majorca can now, however, be confirmed as I am informed by Mr. T. G. Howarth that he took a single male at Puerto Soller in May 1971.

* Holmesdale Cottage, Bonds Lane, Mid-Holmwood, Dorking, Surrey, RH5 4HF.

Pieris brassicae L.

This species would seem to be more numerous than I perhaps indicated, as Mr. H. G. Allcard tells me that he found it commonly in the vegetable growing area inland of Palma. He also comments on its small size.

Artogeia napi L.

In the postscript to my paper I noted the inclusion of *A. napi* as a Majorcan species by Bustillo and Rubio (1974). Señor M. R. Gomez Bustillo has now informed me, however, that this has subsequently been found to be an error due to the incorrect identification of a single female which was in fact *A. rapae* L.

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Notes and Observations

EUDEMIS PORPHYRANA (HUEBNER) NEW TO KENT. — A single specimen of this Tortricid appeared in the m.v. trap in my garden here on the night of August 4th/5th, 1976. So far as I am aware this is the first record of this species for Kent. The moth appears to have been first recognised as British in 1915 from Devon and Herefordshire, whence it seems to have extended its range eastwards. — J. M. CHALMERS-HUNT.

APOMYELOIS BISTRIATELLA NEOPHANES (DURRANT, 1915) (LEP.: PYRALIDAE) IN WALES. — I would like, rather belatedly, to record breeding this moth in September 1974 from a larva that I found in *Daldinia concentrica* on *Ulex,* on sea cliffs near Oxwich, Gower Peninsula, Glamorgan. I have not heard of any other South Wales records for this species. — Dr. A. N. B. SIMPSON, 29 The Greenway, Colletts Green, Powick, near Worcester.

THE CONVOLVULUS HAWK IN HANTS. — On 22nd September, 1976, I discovered a male *Agrius convolvuli* L. clinging to the bottom of a sheet hanging near the m.v. trap in my garden, and on the following morning a further male was found in almost exactly the same place. Later that evening, my son found yet another male on the ground about six feet from the trap. Apparently it had been there all day but had fortunately avoided the attentions of the birds. I was also given a dead *convolvuli* which had been found on the wall of a house at Burridge, near Southampton, on 22nd September. — D. A. LEPARD, Silver Crest, Silver Street, Sway, Lymington, Hants.

Current Literature

The Lepidopterist's Handbook by **Richard Dickson.** The Amateur Entomologist's Society. 138 pp., 52 illustrations. Stiff wrappers. 1976. £3.00.

There is a number of guides to the lepidoptera similar in content to the one under review, though mostly somewhat sketchy in nature and more than 50 years old. Until publication of Dr. Dickson's *Handbook,* the most notable of these was perhaps H. G. Knaggs' *Lepidopterist's Guide* (1869), last issued in 1901 as a third edition, so that a modern guide has long been a desideratum.

The *Handbook* consists of 11 chapters arranged in four sections as under: (1) Fieldwork and further field methods; (2) Breeding: adult to egg; caterpillars; pupae; (3) Work on specimens: the collection-preparation and housing; identification; (4) Recording and photography. Then follow four appendices: (1) Entomological suppliers and societies; (2) Books and magazines; (3) Glossary; (4) Code for insect collecting. The book concludes with an alphabetically arranged index of the English names of insects referred to in the text.

This book is replete with useful information both for the tyro and old hand, and having read it from cover to cover, I can strongly recommend it. One of my few criticisms, however, is that the author appears to cater too much for the pure collector and too little for the observer-cum-collector. For instance, in one passage he discourages searching for larvae of the macrolepidoptera, but exhorts the use of the lamp whereby moths may be lured "in their droves" (see p. 17). Nowadays, most moth hunters use light—admittedly a very productive means of collecting—but all too often to the exclusion of other methods that would tell us more about an insect's habits and early stages in the wild.

Pioneering is necessary if we are to make important new discoveries, and in the next edition of the *Handbook,* a chapter highlighting some of the significant gaps in our knowledge would be welcomed. No one for example has ever found the larva of the Reddish Light Arches (*Apamea sublustris* Esp.); the larva of the common Flame Carpet (*Xanthorhoe designata* Hufn.) in nature is as yet unknown; and many aspects of the early stages of some of our commonest British lepidoptera are still shrouded in mystery.

The book is well illustrated, the printing and paper are satisfactory and the price quite reasonable by present day standards. — J.M.C.-H.

EXCHANGES AND WANTS

AT CHRISTIE'S

Wednesday, 13th July, 1977

Sale of the Original Paintings by William Buckler for "THE LARVAE OF THE BRITISH BUTTERFLIES AND MOTHS"

The original paintings (3,570 on 370 pages) by William Buckler for his work, in nine volumes, "The Larvae of the British Butterflies and Moths", London, 1886/1901, now in the possession of Dr. H. B. D. Kettlewell, the Department of Zoology, University of Oxford, will be offered for auction at Christie's at their sale rooms.

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AND JOURNAL OF VARIATION

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

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CONTENTS

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Notes on some British Phoridae (Diptera) including Two Species of *Megaselia* Rondani New to Science

By Kenneth G. V. Smith*

The publication of the revised Diptera section of the British Check List (Colyer and Smith, 1976) necessitates some comments on the Phoridae. The initial manuscript for the Check List was submitted by the late Charles Colyer on 30th June, 1967, and revised for publication by myself. Some of the species included there have not been formally added to the British List. Furthermore, two new species of *Megaselia* which Colyer had recognised in manuscript are here described and illustrated so that they can be included in the Phoridae volume of Lindner's *Die Fliegen der Palaearktischen Region* (Schmitz, Beyer, Delage, 1938-) now being completed by Dr. Francoise-Alix Delage.

The species discussed here are, in the main, those recently discovered or recognised as British; purely nomenclatorial changes that are clear enough in the revised Kloet & Hincks are omitted.

As there are as yet no adequate published keys to the British fauna, the original description of each species is cited. The keys in Lindner's *Die Fliegen* . . . (Schmitz *et al.* 1938-) are of course invaluable, but incomplete.

METOPINIINAE

Megaselia (e.g. *Aphiochaeta*) *communiformis* Schmitz

Described from Holland (Schmitz, 1918) and now widely recorded in Europe, is known from only two British specimens: Suffolk, Orford, 3.viii.1908, ♀, J. J. F. X. King; Hampshire, Outwick, 8.ix.1952, ♂, C. N. Colyer.

Megaselia (*A.*) *curvicapilla* Schmitz

This species was described from Austria (Schmitz, 1947) and only two British specimens are known: Suffolk, Orford, 20.vii.1908, ♂, J. J. F. X. King; Hampshire, Ridley Wood, 15.vi.1949, ♂, C. N. Colyer.

Megaselia (Aphiochaeta) dipsacosa sp. n.

♂. Frons broader than high at the eye-margin (7: 4) but considerably produced anteriorly at the middle; dull blackish with thick greyish dusting, Fine hairs thickly distributed and rather long on the anterior margin, especially between the supra-antennal bristles. Frontal bristles very robust; antials standing a little lower than the anterolaterals and much nearer to them than to the upper supra-antennals. Supra-antennals equal and very strong, the upper not quite as far apart as the praeocellars, the lower only half as far apart. Mediolaterals and praeocellars almost in a straight row, only very slightly convex anteriorly. Third antennal segment somewhat large, brownish-black; arista very noticeably pubescent. Palpi (fig. 1) clear yellow, somewhat long and narrow, with pointed apex;

* Department of Entomology, British Museum (Nat. Hist.), London.

with six black bristles, four long, two much shorter, about one half to one third of the length of the others. The longer bristles at least twice the greatest width of the palp. Sometimes, also, a tiny hair-like ventral bristle near the middle.

Thorax greyish black, somewhat shining. The major bristles and dorsal pubescence black, the latter appearing pale brown in intense light and thickly set, becoming longer posteriorly to give a very hirsute appearance just before the scutellum, the hairs between the pair of pre-scutellar dorsocentrals being almost half as long as them (reminiscent of *vestita* Wood). Pleura greyish-black, dull, but with shining brownish-black areas on the lower part of the mesopleura and sternopleura. Mesopleura with about five slender bristles on the upper posterior corner, *not easily discerned* without close scrutiny. Scutellum two bristled, with a pair of tiny anterior hairs.

Abdomen long, narrow, black with greyish dusting, the hind margins of the tergites with paler seams, dirty greyish yellow, not so readily noticeable as in *verralli* (Wood). Venter black. Tergite 2 nearly one and a half times as long as tergite 3 and 3-6 approximately of the same length. Hairs on hindmargins of segments 2-5 short, but on the sides and hindmargin of 6 rather long, particularly ventrally. Hypopygium (figs. 2, 3) small, deeper than long, produced downwards to a rounded point on each side, the outline concave just below the anal tube; asymmetrical, the left claspers blunter than the right, i.e. the left rounded apically and the right more triangularly pointed. A few longish hairs on the sides anteriorly and on the lower margins and on the apex of each side a dense bunch of marginal bristles of a quite characteristic appearance, the posterior ones bent backwards at almost a right angle at the tip. Ventral plate blackish, short, somewhat spatulate, not usually evident. In some individuals, the internal copulatory organs exerted in varying degree; the two long curved narrow shining blackish processes being visible. Anal tube long, twice as long as the maximum height, the base narrowed, and the ventrite somewhat pointed, greyish, the apex somewhat paler yellowish-grey; all hairs on anal tube strong and the terminal hairs prominent.

Legs: forelegs, including the coxae, pale yellowish brown; mid-legs, excluding the coxae, likewise; hindlegs darker, glossy brownish. Fore tibiae just a little shorter than the combined length of the first three tarsal segments, which appear in one aspect somewhat stout; all fore tarsal segments progressively diminishing in width so that the apical is quite small. Basiventral hairs on femur 3 short, fine, decumbent, about 8-9 on basal third. Dorsal seam on tibia 3 evenly curved; posterodorsal cilia short and fine, about 15 in evidence in side view.

Wings (fig. 4) faintly greyish-tinged, veins brownish, the thin veins well pigmented. Outline rather broad, the anal angle more or less rectangular as in *pusilla* Meigen. Costal index 0.43; ratios of sections 24: 7: 7; 1 therefore more than one and a half times 2 + 3. Angle at fork a little acute, but the lumen

not small. Costal cilia fairly long (0.132 mm.), about 14 from the humeral cross vein, 5 in one row and four in the other, standing on 2 + 3. Vein 4 arising beyond the fork, origin obliterated, evenly curved throughout, very slightly recurved at the apex. Halteres, including the peduncle, black.

Length: 1.5 - 2.1 mm.; most specimens 1.5 - 1.6 mm.

♀. A single female taken at the same time agrees well with the male, except that the third antennal segment appears relatively smaller and the lower supra-antennals appear relatively somewhat weaker. The first three fore-tarsal segments also a little stout in one aspect. Length: 1.6 mm.

Holotype ♂, Paratypes 18 ♂, 1 ♀, Hertfordshire, Oughton Head, Hitchin, Herts, 2.vii.66, swept by fallen tree on bank of stream, C. N. Colyer. In British Museum (Nat. Hist.), except for 2 ♂ presented to Dr. F.-A. Delage.

This species clearly has affinities with *latifrons* (Wood), *crinita* Schmitz, *cirratula* Schmitz, *cirricauda* Colyer and *criniticauda* Colyer, and is also near *pusilla* (Meigen). From all of these (in the male) it is distinguishable by the characteristic hypopygium and by the annal angle of the wing in both sexes from all except *pusilla.* From *pusilla* it may be distinguished also by the clear yellow palpi, save that occasional specimens of *pusilla* appear with paler palpi, but *pusilla* is a much deeper black insect altogether in general colouration.

M. (*A.*) *fuscipalpis* Lundbeck

This species was described from Denmark. Earlier determinations of British material by Colyer proved to be *diversa* when checked by Schmitz. However, Colyer indicated inclusion of this as British on a single male: Somerset, Weston-super-Mare, 4.v.1957, E. A. Fonseca. This compared favourably with material from Lithuania. Colyer also had material from Estonia, Norway and Sweden (see Andersson 1971 for last).

M. (*A.*) *hibernans* Schmitz (1934, 1935).

According to Schmitz (1934) this species overwinters as adults in rabbit-burrows. It was described from Utrecht (Schmitz, 1935) and the following British specimens are known. Hampshire: Brook, 29.iii.1968, ♀, C. N. Colyer; New Forest, Rhinefield, 29.iii.1968, ♂, C. N. Colyer. Hertfordshire: Oughton Head, 15.iv.1967, ♂ ♀, 1.vi.1968, ♀, C. N. Colyer; Aldbury, 30.iv.1966, ♂, C. N. Colyer.

M. (*A.*) *ignobilis* Schmitz

This species was described from Finland (Schmitz, 1919) and is known in Britain as follows. Hampshire: Brockenhurst, several dates in vii.1907, ♂ ♂, J. J. F. X. King; New Forest, Denny Wood, 25.viii.1953, ♂, Burley, 30.vii.1953, 5 ♂, C. N. Colyer. Hertfordshire: New Barnet, 27.vi.1965, ♂, C. N. Colyer.

M. (*A.*) *indifferens* Lundbeck

This species was originally described from Denmark (Lundbeck, 1920) and has since been recorded from Sweden and Finland (Andersson, 1971). It is known from only one British locality. Scotland, Ross and Cromarty [Highland]: Dingwall, 5.vii.1909, ♀, 29.vii.1909, ♀, J. J. F. X. King.

M. (*A.*) *pollex* Schmitz

Originally described from Spain (Schmitz, 1937) it has since been found in Portugal and Parmenter (1966) recorded it from Blean Woods in Kent, 27.v.1964.

M. (*A.*) *raetica* Schmitz

Parmenter (1965, mis-spelt as *ractica*) added this species to the British List rather prematurely as Colyer was not confident of the determination. In his ms. files Colyer made a later insertion "1967, doubtful — see anal angle and vein 4 origin". He was sufficiently unsure not to include the species in his original ms. for the revised Kloet & Hincks.

M. (*A.*) *subfraudulenta* Schmitz

This species was described from Holland (Schmitz, 1933) and later recorded from Sweden (Andersson, 1971). It was included in Colyer's manuscript list of British species, but as yet I have found no British record. Possibly it was added erroneously by Colyer when he identified Andersson's Swedish material.

M. (*A.*) *sordescens* Schmitz

Described from Holland (Schmitz, 1927), the only British records are from Scotland, Inverness: Nethy Bridge, various dates vi, vii.1922-1923; Fort William: viii, 1921-1922, J. J. F. X. King.

M. (*A.*) *subnitida* Lundbeck

Described from Denmark (Lundbeck, 1920), this species is known in Britain from only two males in the British Museum (Nat. Hist.). Scotland, Inverness (Highland): Nethy Bridge, 17.vi.1922, J. J. F. X. King; Ross and Cromarty (Highland): Dingwall, 14.viii.1909, J. J. F. X. King.

M. (*A.*) *superciliata* Wood (=*consimilis* Lundbeck)

This synonymy has been established by Schmitz and Beyer (1974, *Fliegen Palaearkt. Reg.*, **33**: 630).

M. (*A.*) *tergata* Lundbeck

Described from Denmark (Lundbeck, 1920, 1922) only the female was known until Colyer (1959) found both sexes in Britain (Delamere Forest, Cheshire, 31.v.1958). Since then he has found a further male at New Barnet, Herts., in 1964.

A key to Palaearctic *Aphiochaeta* is given by Schmitz, Beyer and Delage (1965).

Megaselia (*s.g. Megaselia*) *flammula* Schmitz

I can find no British provenance for this species, although Colyer included it in his manuscript list. It was described from Lapland (Schmitz, 1928) and later recorded from Sweden (Andersson, 1971).

M. (*M.*) *curvivenia* Schmitz

Described from Finland (Schmitz, 1928), Colyer (1969) has also found it in Spain and England. Its known British distribution is now as follows. Scotland, Inverness: Nethy Bridge, 5.vii.1910, ♀, J. J. F. X. King; England, Hertfordshire: Simondshyde, 6.vi.1949, ♀, C. N. Colyer.

M. (*M.*) *largifrontalis* Schmitz

This species was described from Portugal (Schmitz, 1939)

and is also known from Germany, Holland, Yugoslavia, Estonia and Spain. Parmenter (1966) first recorded British examples from Surrey: Headly, 11.vi.[19?] and other records are: Gloucestershire: Forest of Dean, 14.vi.1959, ♀, C. N. Colyer; Hertfordshire: New Barnet, 19.vii.1964, ♂, 28.vi.1965, ♂, Oughton Head, 22.vi.1967, ♂ (all C. N. Colyer); Berkshire: Tubney Wood, 20.iv.1957, ♂, E. A. Fonseca; Derbyshire: Langley Mill, 11.vii.1967, ♂, M. B. Green; Warwickshire: Minworth, 26.vii.1967, ♂, M. B. Green.

M. (*M.*) *longifurca* Lundbeck

Described from Denmark (Lundbeck, 1921) this species can be recorded from Britain as follows: Westmorland: Garrigill Nature Reserve, Moor House Reserve, 19, 31.iii.1964, ♂, 23.x.1965, ♂ (both ex "pulicaris") J. M. Nelson. Hampshire: New Forest, Rhinefield, 29.iii.1968, ♂ ♀, C. N. Colyer; Hertfordshire: Oughton Head, 20.iv.1968, ♂, C. N. Colyer.

M. (*M.*) *luminosa* Schmitz

Schmitz (1962) described this species from Holland and noted its occurrence via various misidentifications from Finland, Austria and England. This is the species keyed as *M. minor* (Zett.) by Wood (1909: 28) and recorded by him from Hereford. It can also be recorded in Britain from Suffolk: Orford, 19.viii.1908, ♀, J. J. F. X. King. Buckinghamshire: Seer Green, 11.ix.1933, ♀, E. B. Basden. Scotland, Inverness: Fort William, 15.viii.1921, ♂, J. J. F. X. King.

Megaselia (s.g. Megaselia) setulifera sp. n.

♀. Frons much broader than high (about 5: 3) black, almost dull, a faint reflection apparent; ground hairs very weak, frontal bristles very large and robust. Antials a little closer to anterolaterals than to upper supra-antennals. Supra-antennals unequal, the lower much thinner and only a little more than half the length of the upper, which are set considerably closer together than the praeocellars; two or three noticeably strong ground hairs set between the upper supra-antennals and the antials. Antennae somewhat large, blackish-brown, thickly pubescent; arista also thickly pubescent. Palpi dark, brownish, with five robust bristles, and two shorter ones posteriorly to them at about the middle.

Thorax black, with brownish pubescence, shining in strong lighting; pleura somewhat more brownish, especially anteriorly, with a small palish area at the humeri; shining brownish in the lower area between the fore and mid-coxae; mesopleura bare. Scutellum two bristled.

Abdomen black, somewhat shining, the hairs longish only on the lateral margins, especially the second segment, also on the hind-margin of the sixth. Segment II longer and wider than the remainder and somewhat constricted anteriorly, segments III, IV and V of about equal length and gradually decreasing in width; segment VI much narrower anteriorly than the hind margin of V, and a little longer than V, tapering fairly quickly to a truncated hind-margin with rounded hind-apical corners; segments VII and VIII tubular, chitinised; cerci paler with rather long hairs. Venter black.

Legs, with the exception of the paler fore-coxae, dark, brownish. Fore-tarsi a trifle stout, but not dilated, the segments gradually decreasing in length and width so that segment V is slim, but like all the tarsi with fairly well developed pulvilli and claws. Fore tibiae with a posterodorsal row of longish, fine cilia or setulae well differentiated with the other tibial hairs. Hind tibiae with dorsal seam evenly curved; posterodorsal cilia fine and short, about 18 in number.

Wings distinctly yellowish-grey tinged, the veins brown; thin veins well pigmented. Costal index 0.5; ratios 49: 38: 20. Costal cilia long, about 17-18 from the humeral cross-vein onwards, the first two or three very short, the remainder gradually increasing in length. Halteres, including the peduncle, dark, brownish-black.

Length: 2 mm. (body curved).

Holotype ♀, Cheshire, Delamere Forest, 3.iv.1959, C. N. Colyer. In British Museum (Nat. Hist.) London. Paratype ♀, Shropshire, Walford, near Baschurch (near Shrewsbury), 22.x.1974. Obtained from an emergence trap being operated by Dr. F. I. Henderson (Rothamsted Experimental Station) and Mr. R. O. Clements (Grassland Research Institute). The trap was situated in grassland at the Shropshire Farm Institute. In collection of Dr. R. H. L. Disney.

This species would lead to *setifera* Lundbeck in Lundbeck's keys (1922) but is differentiated by the shorter costa and different coastal ratios, different position of antial bristles, and somewhat larger size (although only the ♀ of this species is known, and only the ♂ of *setifera*).

M. (M.) zonata Zetterstedt

This is known as British from only four specimens in the British Museum (Det. Schmitz and Colyer), all from Scotland. Ross and Cromarty (Highland) Dingwall, 27.vii.1909, ♀, J. J. F. X. King; Inverness (Highland) Nethy Bridge, 25, 29.vii.1923, 2 ♂, ♀, J. J. F. X. King.

Plastophora luteipes Schmitz

Parmenter (1965) recorded this species as British, but Colyer in his files has a ms. note "Schmitz (*in litt.* 7.xii.1950) determines as *simulans* Wood ♀" and he thus omitted it from the Check List.

P. pictorufa Colyer

Colyer (1957) redefined the concept of this genus and described this species from a single ♀, Cheshire, Delamere Forest, 26.vi.1954, C. N. Colyer. Later he (Colyer & Elberg, 1969) produced a revised key to world species.

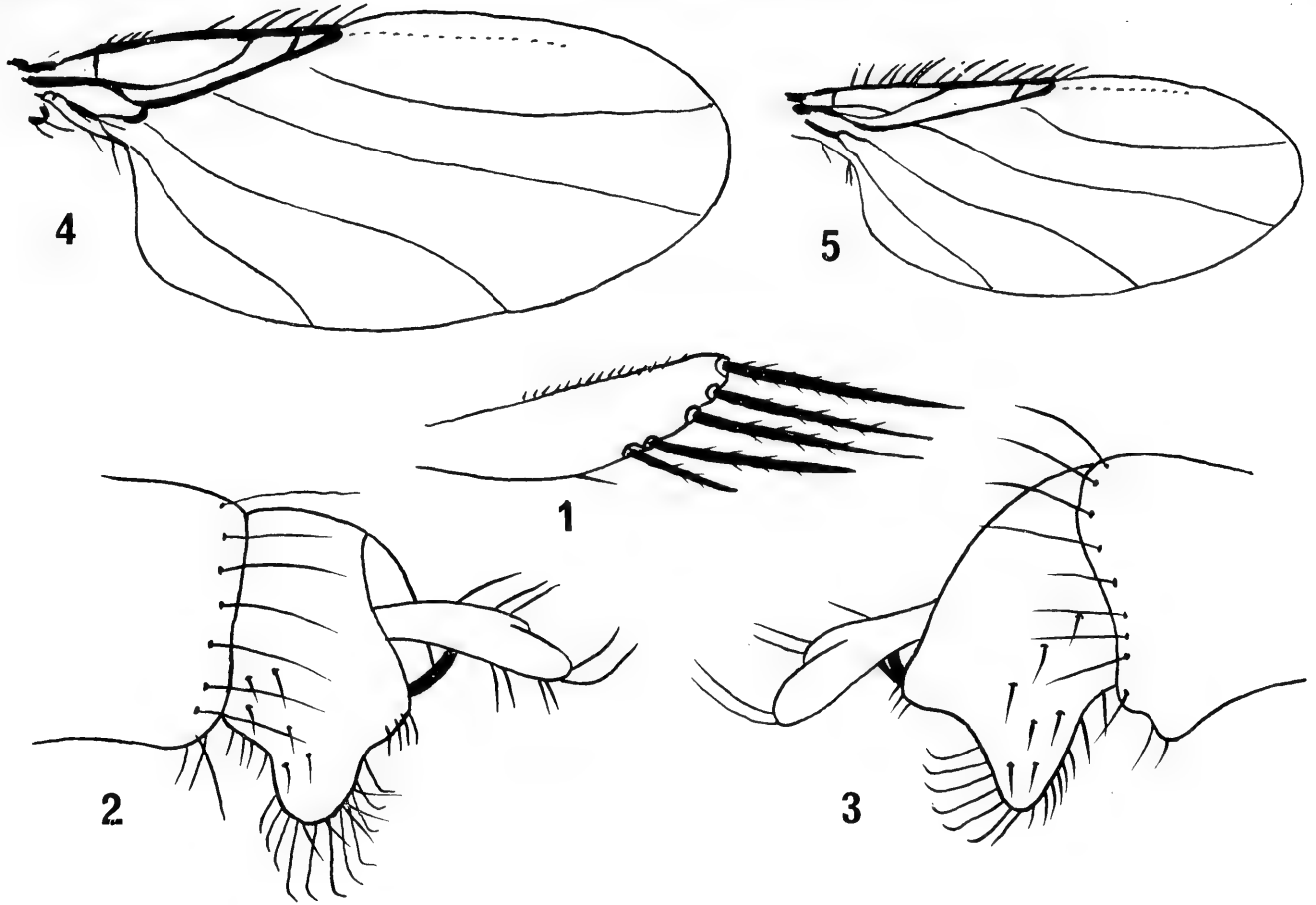
PHORINAE

Cheatopleurophora spinossissima (Strobl)

Described from Austria (Strobl, 1892) this species is known from Britain as follows: Somerset: N. Wortlebury, nr. Weston-super-Mare, 4.v.1957, ♀, E. A. Fonseca, Bourton Coombe, 3.v.1958, ♂, E. A. Fonseca.

Citrago collini Schmitz

Described from England (Herefordshire, J. E. Collin) by



Figs. 1-5: 1-4 *Megaselia* (*Aphiochaeta*) *dipsacosa* sp.n.; 1, male palp; 2, hypopygium in left lateral view; 3, hypopygium in right lateral view; 4, male wing; 5, *Megaselia* (*Megaselia*) *setulifera* sp.n., female wing.

Schmitz (1955 in Schmitz *et al.*: 347) this species has also been recorded from Bavaria. The two British species may be separated as follows:

1. Anal vein abbreviated; 3rd vein distinctly narrowed or reduced towards apex; 3rd antennal segment less than 1½ times as long as wide ..... *collini* Schmitz
—. Anal vein distinctly reaching wing-margin, at least as a crease; 3rd vein not narrowed apically; 3rd antennal segment obviously much longer than wide..... *citreiformis* Becker

Conicera minuscula Schmitz

This species was described from Ireland in Linder's *Die Fliegen* . . . (Schmitz, 1953: 29) and also recorded from other European countries, including England. Parmenter (1965) noted that it was an addition to our fauna when he recorded specimens from Blean Woods National Nature Reserve, Kent, 23.vii.1964. The following distribution can now be given.

Berkshire: Temple, 16.vii.1962, ♂, E. B. Basden. Buckinghamshire: Medmenham, 12.v.1934, ♀, from nest of mole, E. B. Basden. Cambridgeshire: Wooditton Wood, 11.v.1921, ♀, J. E. Collin; Butley, 29.vii.1907, ♂, J. E. Collin. Hampshire: New Forest, Aldridge Hill, 30.v.1959, ♂, E. A. Fonseca. Hertfordshire: Oughton Head, 22.vi.1967, ♂, C. N. Colyer. Lancashire: Denton Sands, iv.1923, ♂ ♀, H. Britten; Formby, 17.v.1953, ♂, C. N. Colyer. [?Somerset]: George Avon, 10.vi.1909, ♂, J. J. F. X. King. Suffolk, Barton Mills, 27.v.1958, ♂, E. A. Fonseca. Surrey: Windsor Forest, 24.vi.1950, ♂, C. N. Colyer.

Phora edentata Schmitz

Schmitz (1920) described this species from Holland and it has since been recognised widely in Europe. Parmenter (1965) first recorded the species in Britain from Essex, Kent and Surrey and I have seen specimens from: Cambridgeshire, Cheshire, Hampshire, Hertfordshire and Suffolk.

Triphleba collini Schmitz

Schmitz (1943: 156 in Lindner) described this species from specimens collected by J. E. Collin at Chippenham Fen, Cambridgeshire. It has since been recorded from Sussex (Parmenter, 1965) and other British records are Surrey: Bookham Common, 23.iii.151, 2 ♂, C. N. Colyer and E. A. Fonseca; 8.iii.1953, ♂, L. Parmenter.

AENIGMATIINAE

Aenigmatias franzi Schmitz

This species was described from Austria and England by Schmitz (1950). The English data are Cheshire: Delamere Forest, 16.vii.1939, 2 ♂, flying on bank on which were colonies of *Myrmica ruginodis* Nylander and *Lasius niger* (L.) (Hym., Formicidae).

Acknowledgments

The present paper owes much to the manuscript notes of my friend the late Charles N. Colyer and the names bestowed upon the new species were chosen by him. I thank Mr. E. C. M.

d'Assis Fonseca and Dr. R. H. L. Disney for comments which led to the preparation of this paper, and Dr. I. F. Henderson for the paratype of *M. setulifera.*

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AN EARLY MIGRANT AND A NEW MOTH TRAP "PREDATOR". — An early *Agrotis ipsilon* Hufn. came to my m.v. trap on 19th March, 1977. Since 1958 my only records earlier than May have been 7th March, 1963, 31st March, 1967 and 20th April, 1968.

For several years I have had to put 1 inch wire netting in the entrance to the m.v. trap to keep out bluetits and it has been generally effective, without preventing the entry of large moths such as the Sphingids and *Mormo maura* L. Recently I was looking at the trap from the house window and saw a Wren (*Troglodytes*) entering and coming straight out again with a moth, repeating this performance several times. The bird seemed to have a preference for *Orthosia cruda* D. & S. — L. W. SIGGS, Sungate, Football Green, Minstead, Lyndhurst, Hants.

ATOMARIA CONSANGUINEA JOHNSON (COL.: CRYPTOPHAGIDAE): TWO FURTHER RECORDS FOR HERTS., INCLUDING THE EARLIEST KNOWN FIND. — I have long had in my collection two examples of an *Atomaria* s.str. from straw refuse near Cheshunt, Herts. (25.xi.45), which the late authority on the genus — Dr. Oscar Sjöberg — determined for me as *nigriventris* Steph.; but as they appeared to me to differ materially from that species, I regarded their identity as still in question. The problem was solved when Mr. Colin Johnson kindly presented me with a paratype of his new species *A. consanguinea* (1975, *Ent. mon. Mag.*, **111**: 181-2) — to which (and to his description) the above pair were found to conform perfectly.

More recently I have detected a specimen of the new species which had been mixed with others of the subgenus among duplicates left by G. H. Ashe, taken by P. Harwood at St. Albans (5.x.24) — probably from a manure heap or cut grass. It is of interest in being the earliest capture so far known, since the many published by Johnson are all subsequent to 1930 and mostly of the present decade, including the Continental records. My experience tends to support Mr. Johnson's suggestion that *consanguinea* is displacing its near ally *nigriventris,* which I have only once found (Berkhamsted, Herts., in haystack bottom, ix.35). The sole recent records I have of that species are of one at Wytham Wood, Berks., in *Polystictus versicolor** at base of dead beech, 23.iii.54 (C. Elton, det. Sjöberg); and one from Essex, date and locality not to hand (P. M. Hammond, det. Allen) but doubtless taken in the '50s or '60s. — A. A. ALLEN.

* Because of the habitat, this specimen should perhaps be checked with *A. puncticollis* Thoms. in mind.

Observations on British Butterflies in 1976 Part I

By Dr. C. J. Luckens

It is a great pleasure to find something of entomological worth in the depths of winter, and for me this is fulfilled by a successful search for Hairstreak ova. One such expedition was undertaken to Alice Holt Forest a few days after the New Year, and while my two older sons indulged in cycle speed trials up and down the rides I was able to concentrate on the oak twigs in relative peace. A dozen ova of *Thecla quercus L.* found in an hour of searching, made the trip worthwhile. This batch produced typical butterflies in mid-June, but among some others collected from West Sussex in December 1975 (which emerged around the same time) was a female specimen with small orange patches at the end of the cell—ab. *flavimaculatus* Lienard (=*bellus* Gerh.).

February slid into March and on the first of the month my wife saw a male *Gonopteryx rhamni* L. near our house in Southampton. The following day we had something of an ornithological event. A pair of Siskins which were regular attenders at our garden peanut bar were joined by a male Brambling in what looked like full breeding plumage—a lovely sight in the bright March sunlight.

I waited until nearly the end of the month to see my first butterfly and this was *Aglais urticae* L. on the south vallum of Hod Hill on March 26th. Larvae of *Euphydryas aurinia* Rott. were taking the sun here and there, but in very small numbers. I suspect the colony is at a low ebb at present and in view of the paucity of scabious in the Dorset Naturalists' Trust Reserve it seems hardly surprising.

Two days later all the common hibernators were flying freely. We saw *rhamni, urticae* and *Inachis io* L. in our garden and during a visit to Bentley Woods during the afternoon good numbers of *Polygonia c-album* L. were noted.

A holiday in the third week of April enabled me to spend some time in an area of West Sussex where *Nymphalis polychloros* L. has turned up from time to time over the last five years. Several visits failed to produce this rarity but it was a great pleasure just walking around in these woods in the invigorating Spring sun. On one such walk a preoccupied stoat hirpled down the ride to within a few yards of me before suddenly scampering off into the undergrowth.

On April 21st I joined Mr. R. F. Bretherton in a Surrey wood where we released well over 150 half-grown *aurinia* larvae in a ride thickly carpeted with scabious. These larvae, which I have bred in captivity since 1973, are from a North Surrey colony which is almost certainly extinct in the wild. During the afternoon *Anthocharis cardamines* L. was seen alongside the roads around Bramley.

Cold winds prevailed for several days but abated on April

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26th when cuckoos were calling in a western enclosure of the New Forest and several male *Celestrina argiolus* L. flitted around a grove of sombre hollies. Later on in the first week in May this delicate little butterfly became more numerous but never approached the abundance of the *argiolus* year of 1970.

May 7th was a superb day—warm and continuously sunny —and at Whiteparish Common the first *Boloria euphrosyne* L. were skimming over the bugle flowers. A week later they were much commoner near Winchester, and the two skippers *Erynnis tages* L. and *Pyrgus malvae* L., especially the latter, were in excellent numbers. A few fresh *Hamearis lucina* L., *Callophrys rubi* L. and *Pararge megera* L. made an appearance in this same coppiced wood.

Heavy showers on May 15th made beating and searching blackthorns in a Bucks. locality rather heavy going. However, several larvae of *Strymonidia pruni* L. were obtained from this thickety wood where nightingale song resounded.

The wych elms of Badbury Rings, the following weekend, produced no larvae of *Strymonidia w-album* Knoch. but *P. malvae* and *Polyomatus icarus* Rott. were in evidence and there were *cardamines* ova on nearly all the stands of hedge mustard along the road verges. Later in the morning a breathless run to the top of Hod Hill revealed my appalling unfitness but also the rewarding sight of the first *aurinia* males already out on the south vallum and a good showing of *Aricia agestis* D. & S. and *C. rubi,* mainly on the steep western slope of this ancient hill fort.

Cupido minimus L. was common on Portsdown on May 28th and flower heads of kidney vetch were studded with the tiny pale turquoise ova of this butterfly. Quite a cloud of males arose from one patch of long grass as I walked by.

The next day the children came with me to the Winchester downs where a good variety of butterfly species were on the wing. In particular, *P. icarus* and *A. agestis* were out in notable force and a few examples of *C. minimus* and to my delight, *Lysandra bellargus* Rott. were also seen. I started to examine these blues for varieties but nothing of note turned up in spite of the excellent numbers flying. Just before leaving I met Mr. L. Young who had worked this hillside for several hours with similar results.

Our belated decision to visit the Isle of Wight on June 2nd resulted in a hurried car journey from Southampton in order to catch the Lymington ferry. In accordance with a well known "law" everything conspired to hold us up—motorists considered it a point of honour to prevent me overtaking them, level crossing gates closed in our faces and all traffic lights were red. However, my eldest son and I pounded down the long companionway to the ferry just as the gang-plank was being lifted. After that all went smoothly and we arrived at the south coast of the island to find *Melitea cinxia* L. in profusion. There was even one on the roadside at the bus

stop. Several other butterfly species were seen in the same locality, including *C. minimus, A. agestis, P. icarus, P. megera, E. tages* and the first *Ochlodes venata* Br. & Grey.

On June 3rd, I started operations at Portsdown where *C. minimus* was common and still quite fresh in the main and accompanied by *Coenonympha pamphilus* L., a few *P. icarus* and the first *Maniola jurtina* L. A wood near Fareham was visited in the afternoon. I knew one part of this wood well but decided to explore a different sector and was gratified to find a strong colony of *Boloria selene* D. & S. and a single worn female *aurinia.* This locality used to be renowned for the latter butterfly but it declined disastrously in the mid-60's and a lone male I saw in 1973 in another area of the wood was the first after a gap of several years. Hopefully the Marsh Fritillary is making a comeback here.

Two days later my wife, our youngest son and I set off for East Cornwall. We had continuous trouble with the car and at Dorchester found we had left behind some essential items of luggage and had to retrace our steps. We finally arrived at our destination at 10.30 that evening. June 6th was dull and grey and we did nothing but sit around recovering from our traumatic journey of the previous day.

By the next morning the fine weather had returned and we lost no time in getting to a haunt of *Mellicta athalia* Rott. situated in a beautiful secluded Cornish valley. As we parked the car beside the road, *athalia* fluttering over the bonnet seemed a good omen and we found the butterfly in plenty all along the valley. Females were just emerging and the males still in excellent condition, but variation was virtually non-existent. Flying in company with *athalia* were numerous *selene* and one or two *euphrosyne* and *aurinia*; single examples of *cardamines, tages* and *malvae* were also noted in this rich area. I was pleased to renew acquaintance with Captain Peter Gainsford whom I met by chance.

After driving through superb countryside to the edge of Dartmoor on June 8th, I set off on the longish walk to another *athalia* site which I had last visited in 1972. Disappointment awaited me, for the former flourishing colony was sadly reduced in numbers—about six males and three females were seen in the prime site, but a short distance away the butterfly seemed to have spread thinly over quite a wide area. I visited the "athalia valley" later on that day and again three days later but could find nothing more than two underside vars. One of these deposited a large batch of ova and I am hopeful of something impressive in the F2 generation.

Unsettled weather prevailed for a few days around mid-June and then the torrid weather started in earnest. Many of my captive stock of *Apatura iris* L. were out well before the end of the month and on the last day of June my wife and I visited the woods south of Salisbury to look for this fine insect. Within minutes of our entering the wood, two *iris* were seen settling on a patch of slightly damp ground and *Limenitis*

camilla L. and *Argynnis paphia* L. were out in profusion. The intense heat caused problems with our car again and while we waited for it to cool off in the shade, *iris* males flashed by at regular intervals. A large female floated down to the dusty track and walked around insinuating her proboscis under small pebbles in a search for moisture. After a while she flew on to a low bush in the shade and sat with outspread wings. She was still there when we were finally able to restart the car five minutes later.

Back in Southampton that afternoon, while we were being plied with much-needed drinks on a neighbour's lawn, a *T. quercus* consented to join the gathering. We have many oak trees in our area of Southampton, but though I have regularly scanned them for this butterfly I have never seen one in the city before.

TRESHNISH ISLES. — The Treshnish Isles are a group of eight terraced tertiary basalt islands with numerous small rocks situated approximately four miles off the north-west corner of Mull. The basalt is weathered into terraces giving the islands their characteristic outlines.

Lunga, the largest island, is 170 acres in area, a mile and a quarter long by 500 yards wide at the extremes, with a highest point of 337 feet at the northern end. The island is generally a grassy plateau with raised areas of basalt surrounded by sheer cliffs and a number of steep gullies with vegetated slopes and boulder scree.

Since 1970 four visits have been made to Lunga by a small party, mainly to ring the nesting seabirds. All the visits have been in June and the party have also recorded other wildlife seen. I have extracted the entomological portion of these notes. It is a privately owned island and special permission was obtained by the ringing group. It must be stressed that visitors are not allowed during the breeding season when great damage or disturbance could be inflicted on the seabird colonies.

Two species of butterfly were recorded — a Painted Lady (*Cynthia cardui* L.) and a few Common Blues (*Polyommatus icarus* Rott.). In addition the following insects, etc., were noted: Yellow dung-fly (*Scatophaga stercoraria*), Snipe-fly (*Rhagio scolopacea*), Caddis fly (*Leptocerus aterrimus*), the beetles *Ocypus olens, Dascillus cervinus* and *Pterostichus melanarius* and the spider (*Aranea diadema*). Click Beetle, Woodlouse, Earwig, Green aphid, Bumblebee and Harvestman sp. were also seen but not specifically identified. Red mites were common on the rocks.

My thanks are due to Geoff Ward who prepared the original report and to Geoff Cope for the loan of his copy and additional information. — G. SUMMERS, 23 West Close, Stafford, ST16 3TG.

New Forest Mercury Vapour Light Records for 1976

By L. W. SIGGS*

The year was remarkable for the drought which lasted through most of June, July and August, but was followed by a wet autumn. Some of the possible effects of the unusual weather are noted below, but it will be more interesting to see what effects show themselves in 1977.

Details of the catch of macrolepidoptera in the Robinson trap at Minstead are as follows: —

	Nights	*Specimens*		*Species*
		Total	*Average*	*Average*
March ...	31	605	20	4
April ...	30	995	33	7
May ...	31	863	29	13
June ...	30	7,848	262	38
July ...	31	10,481	338	52
August ...	31	5,534	179	33
September ...	30	1,712	57	13
October ...	28	1,335	48	10
November ...	9	223	25	5

Overall this was not a peak year, but it was noticeable that many species were earlier than usual, a fact which accounts for the high figure for June, a fairly good one (but by no means a record) for July, but a poor one for August. The list below which shows record catches for the year is longer than usual. It contains only one abundant species and most such species were well below average. The list of those species which are occasional is also longer than usual.

There were three additions to the Minstead list: *Apoda avellana* L., *Spilosoma urticae* Esp. and *Callimorpha dominula* L. This record consisted of the two forewings left on the trap collar, presumably by a predatory bird who had not learnt about protective coloration; but, of course, he had no previous opportunity of learning about *dominula* so far away from its riverside haunts.

The total number of species taken in 1976 was 340.

There were record catches in the following species; the figures in brackets show the previous best since 1961: *Drepana cultraria* Fab. 56 (14); *Scopula imitaria* Hübn. 15 (4); *Chloroclysta rectangulata* L. 18 (13); *Peribotodes rhomboidaria* D. & S. 275 (229); *Euxoa tritici* L. 13 (4); *Agrotis segetum* D. & S. 108 (74); *A. exclamationis* L. 9,366 (7,244); *A. puta* Hübn. 1,342 (814); *Paradiarsia glareosa* Esp. 68 (55); *Hada nana* Hufn. 14 (4); *Mythimna pallens* L. 850 (473); *M. comma* L. 119 (83); *Lithophane leautieri* Bois. 59 (34); *Conistra vaccinii* L. 1,016 (815); *Parastichtis suspecta* Hübn. 26 (13); *Xanthia aurago* D. & S. 27 (10); *Amphipyra pyramidea* L. 29 (16); *A. berbera* Rungs. 92 (58); *Oligia versicolor* Borkh. 79

* Sungate, Football Green, Minstead, Lyndhurst, Hampshire.

(17); *Luperina testacea* D. & S. 229 (62); *Hoplodrina ambigua* D. & S. 155 (12); *Caradrina clavipalpis* Scop. 41 (17); *Colocasia coryli* L. 58 (41); *Laspeyria flexula* D. & S. 111 (68).

The following species are occasional here and were welcome in 1976: *Idaea seriata* Schrank.; *Mesoleuca albicillata* L.; *Eulithis mellinata* Fab.; *Colostigia multistrigaria* Haw.; *Perizoma albulata* D. & S.; *P. flavofasciata* Thunb.; *Eupithecia succenturiata* L.; *Plagodis pulveraria* L.; *Cerapteryx graminis* L.; *Orthosia opima* Hübn.; *Mythimna favicolor* Barr.; *M. obsoleta* Hübn.; *Aporophila lutulenta* D. & S.; *Conistra rubiginea* D. & S.; *Acronicta megacephala* D. & S.; *Mormo maura* L.; *Cosmia pyralina* D. & S.; *Mesoligia furuncula* D. & S.; *Oria musculosa* Hübn.; *Stilbia anomala* Haw.; *Elaphria venustula* Hübn.

Migrants

Not a good year for migrants, but it was pleasant to see *M. vitellina* again: *Plutella xylostella* L. (*maculipennis* Curt.) (9); *Udea ferrugalis* Hübn. (1); *Nomophila noctuella* D. & S. (40); *Lithosia quadra* L. (13); *Agrotis ipsilon* Hufn. (147); *Peridroma saucia* Hübn. (*porphyrea* sensu Edelsten) (7); *Mythimna vitellina* Hübn. (1); *Autographa gamma* L. (133).

Polymorphism

Biston betularia L.		*Idaea aversata* L.	
typical	21 (78%)	*remutata*	138 (75%)
carbonaria	3 (11%)	*aversata*	47 (25%)
insularia	3 (11%)		

This year I also used an assembly trap in woodland nearby, "baited" with female *Biston betularia* and attracted the following males: typical 69 (84%), *carbonaria* 2 (2%), *insularia* 11 (13%).

Hydromena furcata Thunb.	Type 50, ab. *obscura* Prout 1.
Epirrita dilutata D. & S.	Type 64, ab. *melana* Prout 2.
Ennomos erosaria D. & S.	Pale form 25, dark form 4.
Alcis repandata L.	Type 65, f. *consonaria* Hübn. 2.
Ectropis bistortata Goeze.	Type 14, melanic 1.
Eilema griseola Hübn.	Type 9, ab. *flava* 2.
Eilema deplana Esp.	Type nil, vars. 16.
Diarsia mendica Fab.	Type 54, ab. *primulae* Esp. 1.
Atethmia centrago Haw.	Type 3, ab. *unicolor* Stdgr. 1.
Xanthia icteritia Hufn.	Type 126, ab. *imperfecta* Tutt, 1. ab. *flavescens* Esp. 1.
Luperina testacea D. & S.	Type 228,ab. *nigrescens* Tutt, 1.
Charanyca trigrammica Hufn.	Type 32, ab. *obscura* Tutt, 1. ab. *pallida-linea* Tutt, 1.

The Drought

Mr. E. H. Wild raised some interesting points in his article in *Ent. Rec.*, **88**: 260, regarding second broods in 1976. He says that *Agrotis exclamationis* L. "occasionally throws up a small second brood". At Minstead there has been a second brood of this species between August and October each year since 1958 without exception. In 1976, there were 9,075 in the first brood to 27th July. The second brood started on 1st August, reached a peak of 39 on the 12th August and finished

on 23rd September with a total of 291.

It was a rather poor year for *Laothoë populi* L., only 17, finishing on 12th August.

There were 165 *Leucania pallens* L. from 4th June to 18th July and 685 from 29th July to 23rd September.

We had no late brood of *O. sambucaria* L., *E. pulchellata* Steph., *C. morpheus* Hufn., and no *P. moneta* F. which is very occasional here. I found no species with an unexpected second brood.

C. nupta L. is only occasional and turned up on 12th August and 3rd September — nothing exceptional, but *A. pyramidea* L. began on 13th July which was early and numbers were up, *A. berbera* Rungs. began on 12th July which was early and numbers were high. *A. tragopogonis* L. was also early on 12th July. *C. lutea* Ström. was normal on 16th September. Other early emergences of autumn species were *Atethmia xerampelina* Hübn. (20th August), *Agrochola macilenta* Hübn. (26th August — very early as it usually waits till October), *Dichonia aprilina* L. (24th September), *Agrochola lota* Cl. (27th September), and *Colotois pennaria* L. (27th September).

I had 55 species in which the last cepture was considerably later than usual. Presumably the drought conditions inhibited any desire to remain in the pupa. Will this result in an early emergence season next year or will the hard winter adjust the cycle?

One wonders what will be the effect of the drought on next year's numbers. Most birch trees were in yellow leaf by the end of August, and although there was subsequently a fresh growth when the rain came, many birch feeding larvae must have died. Beech suffered similarly. Lichens were particularly dried up. I had hoped to breed some *Eilema deplana* Esp. because I have never taken a type male at Minstead and only two type females. Two females (vars.) obliged with a few ova but I was unable to find fresh lichen which the larvae were able to eat. Perhaps, too, there is some significance in the fact that bluetits have been noticeably scarcer this winter. Could this be due to shortage of larvae during the drought?

PARECTOPA ONONIDIS ZELL. IN S.E. LONDON. — On 7th July, 1976 my first specimen of the above moth made its appearance at m.v. light here. This very local and somewhat elusive Gracillariid is not included in "Woolwich Surveys" (1909) — the early list of the fauna of this district. Though so small and narrow, the gleaming silver-white marks on a dark ground give it an exceedingly neat and bright aspect in a good light. About 15 years ago, on a visit to Riddlesdown, Surrey, with the late lamented Stanley Wakely, we searched for the mines or spinnings of *P. ononidis* on clover at a spot where he had previously found them, but in vain. — A. A. ALLEN, 49 Montcalm Road, Charlton, London, SE7 8QG.

Oxycera trilineata (L.) (Diptera) New to Cumbria

By C. F. Cowan*

Mr. A. Brindle's survey (Vol. **88**: 256-259) of the Stratiomyid flies of north England spurs me to report this belated record.

On 30.vii.1961, a brilliantly hot day, I explored the sand dunes and slacks of Sandscale Haws (10 km. square 34/17, tetrad NE; v.-c. 69), about 5 km. north of Barrow in Furness. This is a fine area of dune slacks in the Duddon Estuary, with some very interesting flora which I set out to photograph. There being no shade, I left unwanted equipment on a dry spot covered by my pac-a-mac, and took my camera with a wide-angle lens. An hour later I returned and saw this superb green fly basking on my mackintosh and serenely preening her pink legs. I secured successively closer photographs to within about 5 cm., this last giving an image about life-size on the colour transparency.

Identification from the fine figure of a male in colour by Colyer & Hammond (1951: 94, pl. 14) was easy. My female had the eyes well separated as normal, with the vertex and frons green and three frontal black lines running down from a black collar; antennae deep rusty red.

The BMNH quite reasonably declined to confirm identity from a colour print without a corpse to compare with their series of browned specimens, and I required someone who knew the living animal to see it before reporting. Mr. Brindle has now seen the photograph and positively confirms that the fly is *Oxycera trilineata.*

Colyer & Hammond give the distribution as "the southern half of the country", but Oldroyd (1969: 25, 26) gives "marshes; frequent and widespread" throughout the British Isles. An old note of my own, made I think in 1962 when seeing the BMNH series, makes this an estuarine insect of S.E. and S. England, and S. Wales. The favoured Duddon Estuary, washed by a tentacle of the Gulf Stream, is a compatible locality. Oldroyd notes "found on vegetation"; Brindle adds *in litt.* "prefers a pac-a-mac", a useful tip for collectors perhaps, but anathema to photographers!

Both Colyer & Hammond and Oldroyd attributed the name to Fabricius, but Fabricius himself invariably (e.g. 1775: 760, no. 7) cited Linnaeus, who proposed it in *Musca,* and the correct name is *Oxycera trilineata* (L., 1767).

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Stigmella repentiella (Wolff, 1955) (Lep.: Nepticulidae): A Species New to Britain

By A. M. EMMET*

Summary

After the discovery of a hitherto misidentified specimen in the Wakely Collection, *Stigmella repentiella* has been found to be established as a breeding species on the coast of Kent. Its life history is described.

Narrative

On the 29th March, 1976, I paid a visit to the Department of Zoology, Cambridge University, in order to extract records for Volume 2 of *The Moths and Butterflies of Great Britain and Ireland* from the collections housed in the Insect Room. I was helped in my task by Paul Johnson. When we had finished working through the families in which I was interested, and while I was completing my notes, Paul went off to look at the Nepticulidae in the Wakely collection. I soon heard him exclaim: "This one is wrongly identified: it is labelled *Ectoedemia intimella,* but it certainly isn't that species. The data label reads "Sandwich, Kent. Bred from *Salix repens,* 7.viii.57". "In that case," I replied, "it is *Stigmella repentiella* Wolff, and it is new to Britain. Let's have a look." We arranged to borrow the specimen, which was a male, and I took it up to the British Museum (Natural History) where Dr. J. D. Bradley dissected the genitalia. This established the identification beyond question as *S. repentiella.*

The next task was to find out whether the moth still occurred in the Sandwich area. I am a member of the Kent Trust for Nature Conservation, so I appealed to that organisation for help in locating the foodplant. Mr. K. A. Chapman, Warden of the Sandwich Bay Reserve, told me of a damp hollow where it occurred, and on the 19th of July my wife and I, accompanied by Paul Johnson, made the long journey to investigate. We soon confirmed that the insect was present, but the mines seemed scarce and were certainly difficult to find. At the end of a three-hour search, our total collective "bag" was about 24 mines, only two of which were tenanted. Both surfaces of the leaves of the foodplant are covered in silky hairs which tend to hide the mine. The course of the gallery often follows the leaf-margin rendering it even less conspicuous. However, old mines tend to go black, a discoloration which sometimes starts to show while the larva is still feeding; these blackened leaves are rather easier to find. The two tenanted mines produced adults on the 6th and 12th of August. The species is sexually dimorphic, and, luckily, there was one of each sex.

While the main credit for this addition to our lepidopterous fauna must go to Wakely, who found the first larva and reared it successfully, his specimen would not yet have been recognised had Paul Johnson not noticed Wakely's mis-

* Labrey Cottage, Victoria Gardens, Saffron Walden, Essex.

identification. It is surprising that an entomologist of Wakely's calibre should have been guilty of such an error, but, as he would have been the first to admit, his knowledge of the Nepticulidae was meagre in comparison with that of the other microlepidoptera. He exhibited the moth as *"Nepticula intimella* Zeller" at the annual exhibition of the South London Entomological and Natural History Society in 1957 and no one at that time seems to have challenged the determination. It is a tribute to Paul's keen young eye and rapidly expanding knowledge of the microlepidoptera that he exposed at a glance a mistake which was accepted without demur by the entomological cognoscenti of 1957. I was able to write to Wakely confirming this identification of his specimen just a few days before his death, and his daughter tells me that the news gave him great pleasure.

Help continued to come from the K.T.N.C. Mr. E. Philp, who is in charge of the Regional Data Bank at Maidstone Museum, wrote giving me three other stands of the foodplant along the coast of Kent, and, furthermore, told me that what had been regarded as *Salix repens* ssp. *argentea* (see Clapham, Tutin & Warberg, 1962) was now considered to have specific rank under the name *Salix arenaria* (see Tutin, 1972-76). I have since learned from Dr. Niels Wolff and others that the status of the sandhill creeping willow is an old and still unresolved, botanical crux on which it would be improper for me to pronounce; however, for my own convenience, I shall refer to it here as *Salix arenaria.* It seems that *S. repentiella* feeds exclusively on *S. arenaria* and not on *S. repens.* Dr. Wolff, the species' nomenclator, tells me that he has found it only on the former: I have examined the mines in the Hering herbarium, which he collected at the type locality (Asserbo, Denmark) and they are exactly like those from Sandwich Bay. Hering (1951: 152) discusses the influence that leaf-mining insects can have on the classification of plants; the fact that *S. repentiella* seems to accept only *S. arenaria* lends some measure of support to those botanists who prefer to regard it as a species distinct from *S. repens.*

My wife and I visited the Sandwich district again on the 3rd of September. We began by searching one of the additional sites given us by Mr. Philp; it lies on the sandhills just north of Deal. Though it is only a mile or so from the Sandwich locality, there was no trace of *S. repentiella.* We then went on to the site at Sandwich, where we found that the discoloration of the mines was making them easier to find than in July; all, however, were empty.

Our third and final visit to Sandwich was on the 3rd of October. On this date, the second generation of larvae was feeding and we managed to secure a score of tenanted mines. From these we have a number of cocoons, some of which may produce adults in the spring.

Dr. F. H. Perring, of the Institute of Terrestrial Ecology at Monks Wood, kindly supplied me with a map showing the

distribution of *Salix arenaria* in the British Isles. Most of the sites are on coastal sandhills. Perhaps the most extensive stand is along the dunes on the Lancashire coast near Southport, and we had the opportunity to reconnoitre these on the 15th of September. Though we searched assiduously, we found no evidence of *S. repentiella.* Another locality given for the foodplant is the coast of West Galway, south of Slyne Head, and we were staying precisely there in mid-October. We investigated two localities, one on boulder-clay and the other on granite-based sand, both close to the sea. There was no sign of *S. repentiella,* but the species of *Salix* appeared to us to be *repens* rather than *arenaria*; we may have been looking in the wrong place.

Thus, the only known site for *S. repentiella* is the small hollow near Sandwich. The locality has already been designated as an SSSI for other reasons and is not under human threat; however, it narrowly escaped being destroyed by fire during the hot summer of 1976. The mines of *S. repentiella* are so desperately difficult to find that there is little danger of its being the victim of overcollection.

Description

STIGMELLA REPENTIELLA (Wolff).
Nepticula repentiella Wolff, 1955, *Ent. Meddr.*, **27**: 82.

Type locality: Denmark; Asserbo.

Imago. Wingspan 4-5 mm. *Male.* Head ochreous yellow, collar white; antennae fuscous, 3/5 length of forewings; eyecaps white. Forewing shining fuscous-grey; an indistinct rather narrow fascia of colourless scales beyond middle, extending slightly towards base on costa and, more noticeably, along dorsum; apical area beyond fascia slightly darker than base; cilia grey. Hindwing and cilia grey. *Female.* Antennae slightly shorter than in male. Forewing yellowish fuscous; fascia broad and distinct. Otherwise as male.

Ovum. Laid on the underside of a leaf of sandhill creeping-willow (*Salix arenaria*), usually beside the midrib or on the leaf margin.

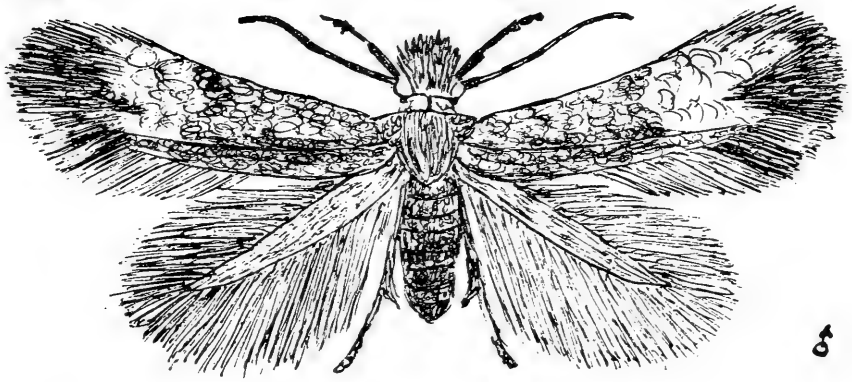
Larva. Yellow.

Mine. A gallery, sooner or later reaching the leaf margin, which it then follows for some distance; finally, the larva turns inwards and excavates a blotch which may occupy the whole of a small leaflet. The mine quickly turns blackish brown, this frequently becoming the colour of the early mine before the larva has finished feeding. The small veins of the leaf are not eaten; consequently the mine has a reticulate appearance if held up to the light.

Cocoon. Yellow brown to dark brown.

Life history. Bivoltine. The imagines fly in May and August and the larvae feed in July and September-October.

Distribution. Hitherto recorded in Britain only from the coastal sandhills of east Kent. Abroad it is found on the coasts of north-west Germany, Denmark, Poland and Finland; in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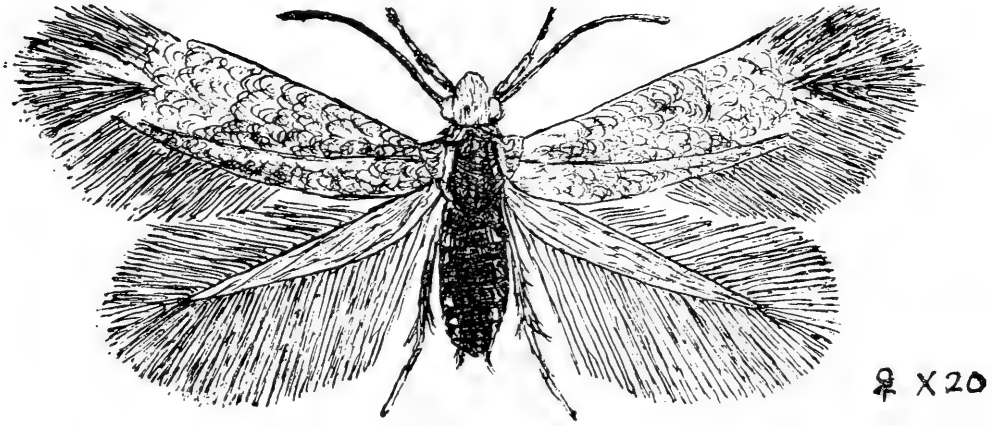
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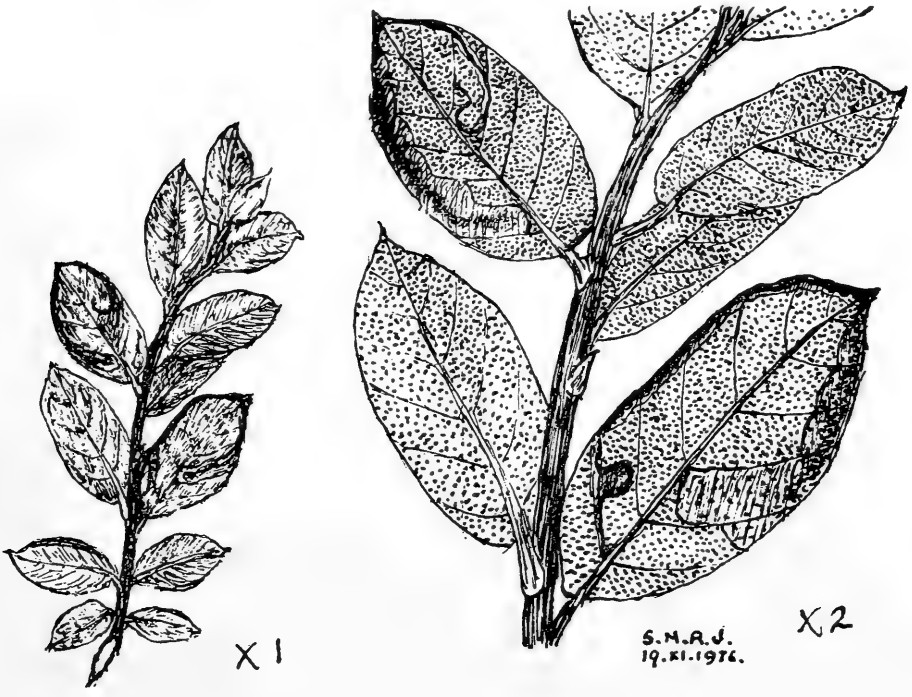
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Sweden it is replaced by a related species, *Stigmella benanderella* (Wolff, 1955).

Acknowledgments

I wish to extend thanks to Dr. W. A. Foster for permission to inspect the collections at Cambridge University and to borrow the original specimen of *S. repentiella* for study; to Dr. J. D. Bradley who confirmed the determination by dissection; to the officers of the Kent Trust for Nature Conservation for information about the foodplant in Kent; to Dr. F. H. Perring for a map showing its distribution in the British Isles; to Dr. Neils L. Wolff for information about the foodplant and status of the insect in Denmark and elsewhere on the Continent; to Mr. S. N. A. Jacobs for excellent drawings of the imago and larval mine; and particularly to the Sandwich Bay bird-watchers who not only uncomplainingly tolerated entomologists who intruded on their preserves and impeded their activities, but have also cleared away some of the intrusive sea buckthorn (*Hippophaë rhamnoides*) to give the creeping willow a better chance to flourish.

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POLYDRUSUS SERICEUS SCHALL. (COL.: CURCULIONIDAE) IN SUSSEX. — Whilst working for the new British weevil *Magdalis memnonia* Gyll. in company with its discoverer, Mr. P. J. Hodge, in Friston Forest, East Sussex, on 15th June, 1974 (cf. Allen, 1975, *Ent. mon. Mag.*, **111**: 96), I took a single example of this middle-sized green *Polydrusus* by sweeping in a ride. Mr. Hodge had never before seen the insect, but the following year found it in profusion at the same place on young oaks, etc.; and likewise in 1976 but less abundantly. *P. sericeus* is a particularly local weevil in this country, with its headquarters in North Hants.: Kimpton, Thruxton, Andover, Harewood Forest — all four places being in the same area. At the first two it was taken last century; at the third, by the late Philip Harwood, and one by myself in 1933 in a wood on the downs; at the fourth, by Joy and Tomlin in numbers and as lately as 1974, still in plenty, by Mr. D. Appleton. There are, besides, a few other scattered southern records. In Kent it must be excessively local, its sole station known to me being a cherry tree in the late Dr. Massee's garden at East Malling; possibly he may have met with it elsewhere in the district, but I never heard that he did. — A. A. ALLEN.

The History and Present Status of *Luperina nickerlii gueneei* Doubleday in Britain

By H. N. Michaelis*

The earliest known specimens were two found near the ferry at Rhyl, Clwyd in 1860 or 1861 by T. Porter and these were purchased by the Lancashire collector, J. B. Hodgkinson of Preston. They were eventually sent via the Rev'd. H. Burney to H. Doubleday and Doubleday described the moth under *Luperina gueneei* H. Dbl. n.sp. in the *Entomologist's* Annual of 1864, p. 123, contained in an article by H. Guard Knaggs; Knaggs here refers to three specimens taken in Wales in 1862 and it seems certain that these were the specimens purchased by Hodgkinson, for he writes in the *Entomologist* 1885, p.45 that he purchased a third specimen taken in north Wales in 1862 by H. Stephenson. Hodgkinson sent this to Miss H. Sulivan of Fulham "where I suppose it remains". Perhaps after 23 years, one may imagine a thought of unrequited love from this last remark.

The moth next appeared on the sandhills of St. Annes-on-Sea, Lancashire taken by Baxter in 1889 and later in conjunction with H. Yates. I was given specimens bearing the Baxter label for 1911 and 1914 by one of his descendants and understand that the locality was destroyed by building development between 1917-1918. There was some confusion as to whether or not the St. Annes specimens were but a form of *Luperina testacea* (D. & S.), but in 1909 Richard South described these as *L. gueneei* var. *baxteri* in the *Entomologist,* xlii, p. 289, and figured genitalia drawn and described by F. N. Pierce showing the differences between the new species and *L. testacea.* Later much print was devoted to this by H. J. Turner in *Ent. Record* 1911, v. 23, pp. 53, 89, 171, 201 and F. N. Pierce, ibid. p. 269.

The next specimen was found by me at Deganwy, Caernarvonshire, now Gwynedd, at the edge of the sandhills on 26th August, 1926. This was pale grey with a faint yellowish tinge when found which over the years discoloured to pale ochreous and then resembled my specimens from Baxter. The locality was destroyed by sea erosion in the 1930's, and the growth of the foodplant *Agropyron junceiforme* Löve is now much reduced. In 1929, the late R. E. Vaughan Roberts found a moth at Prestatyn, Clwyd. This specimen is noted in the rehash of South's "Moths of the British Isles" 1961, though my Caernarvonshire earlier specimen is omitted although shown in S. Gordon Smith's "Butterflies and Moths of Cheshire, Flintshire, Denbighshire, Caernarvonshire, Anglesey and Merionethshire" 1948, p. 126; clearly, someone had not done their homework on distribution.

In 1974, a student from the Nature Conservancy brought me a ♀ for identification from the Clwyd coast taken in early September. This was exhibited at the 1974 British Entomo-

* 5 Glan-y-Mor, Glan Conwy, Colwyn Bay.

logical Society Exhibition but was by mischance missed from the list of published exhibits, but this was later remedied with sincere apologies. My efforts to record this species are indeed subject to ill fortune. On 26th August, 1975, together with Mr. and Mrs. J M. Brummitt, I visited the locality and found a number of ♀s resting on leaves and stems of *A. junceiforme* (sea couch grass) and on the sand nearby, and no ♂s were seen. On 2nd August, 1976, I found a few ♂s at the Point of Air, Clwyd and on their own initiative, B. Goater and B. Skinner found it common there on 13th August. On 5th August we again visited the original locality for a short time and saw a dozen resting mainly on the foodplant; we examined flowers of marram, lymegrass, yarrow, etc., and though other moths were present, we did not see *nickerlii.* Some days later, I found a weak colony further west.

B. Goater and B. Skinner called on me on 14th August on their way to Anglesey where they found the moth that evening on the south-west coast. A few days later, I saw six in half an hour to the east of their spot. In conclusion, I luckily found a crippled ♀ near Conwy, Gwynedd on a weak growth of *Agropyron* while examining a yet unidentified *Scrobipalpa* (*Gelechiidae*). Thus we have had five localities on the mainland—one extinct—and two almost approximated on Anglesey.

The larva feeds at night, possibly on or below the surface of the sand, and pupates below the surface in a silk cocoon or web. A description of the early stages is given in "Text Book of British Butterflies and Moths" by L. W. Newman and H. A. Leeds 1913, p. 67, under Guenee's Luperina. The moth appears from early August to late September and occurs on flat drifts of sand dunes where the *Agropyron* is the first dune-binder for we found none on the higher marram bound dunes. In all localities, I noticed that the foodplant had been covered at some time by the high spring and winter tides. It is not attracted by mercury vapour light, though admittedly this was never tried later than 12.30 p.m. *L. testacea* was particularly abundant in 1976 and swarmed at my garden light from 9-9.30 onwards. Like *testacea,* it is not attracted to flowers or "sugar" and does not fly readily for only two were netted at dusk.

I have remarked that the forewings (upperside) tend to discolour with age from pale grey or grey, slightly tinged with yellow, to a pale ochreous; this happened to my Deganwy specimen now in Manchester Museum. The specimens of *gueneei* figured on a fine plate with an article by Barry Goater, *Ent. Gazette,* v. 27, p. 141, are clearly old specimens with fw. ochreous and do not approximate to the colour of fresh specimens. It is hoped that the figures on plates for the forthcoming volume of "The Butterflies and Moths of Great Britain and Ireland" do not repeat this discoloration. Doubleday's description of 1864 fits the species well, though I cannot agree with his "anterior wings pale testaceous" for I have always thought testaceous means brick-red, which is confirmed by a

recent Chamber's 20th Century Dictionary; possibly the meaning of the word has changed over the past hundred years, or perhaps the specimens described in 1864 had been exposed to light for two years. In any case I cannot visualise the forewing colour as pale brick red. As regards the similarity to *L. testacea,* a quick field identification would be: if cilia of hindwings is a clear white you will find you have *nickerlii,* while cilia of ochreous grey or grey would indicate *testacea.*

Luperina nickerlii gueneei is found only on the seaside edge of sandhills where *A. junceiforme* and *A. pungens* grow, i.e. under sea salt conditions; so it appears is *leechi* subsp. nov. *Luperina nickerlii nickerlii* Freyer is found in Bohemia where such ecological conditions do not occur. Has anyone with adequate facilities carefully compared the Bohemian species with the two British and one Irish subspecies, or considered if it were worth so doing?

Conservation: though apparently well spread in small colonies, the main dangers are from sea erosion and holiday development with chalet and caravan sites on the landward side of the dunes on an overworked holiday coast, especially from mid-July to early September. The dunes are less disturbed in the earlier and later months when the larvae are feeding. It is also expected there will be some collecting pressure and it is hoped that moderation will be exercised both in north Wales and in Cornwall.

TRYPOPHLOEUS ASPERATUS GYLL. (COL.: SCOLYTIDAE) IN S.E. LONDON. — A specimen of this extremely local bark-beetle (=*Cryphalus binodulus* Ratz.) came to my m.v. lamp here at Charlton on the night of 26.vi.76. The rather few British records are scattered and mainly not south-eastern, the only such being quite old: Highgate (Janson) and Forest Hill (Champion) in Fowler, 1891, *Col. Brit. Isl.*, **5**: 431. The writer published what appeared to be the first for Kent in 1958, *Ent. mon. Mag.*, **94**: 216, on a specimen from Darenth Wood. The present capture seems to be only the second for the county and the first modern one for the London suburbs. The beetle may have come from a Lombardy poplar nearby, or from white poplars not far off. The nearest aspens (the usual host in Britain) are in the Shooters Hill woods, barely two miles distant; willows, too, occur locally in some plenty, but require confirmation as a host of *T. asperatus* in this country. Besides this, I can add only one to the handful of records given under the above references, *viz.* Hartlebury, Worcs. (G. H. Ashe). Perhaps if various species of *Populus* recently dead or bearing dead twigs or boughs were to be carefully worked, this little rarity might be more often encountered. Several closely related species occur abroad on trees of this genus; one of them, *T. granulatus* Ratz., has been taken once in Britain (cf. Fowler, *l.c.*), but seems doubtfully native. — A. A. ALLEN, 49 Montcalm Road, Charlton, London, SE7 8QG.

Immigrant Species of Lepidoptera at the Light Trap in West Surrey in 1976

By R. F. BRETHERTON, C.B., M.A., F.R.E.S.

One of the outstanding features of moth trap attendances at Bramley, Surrey, in 1976 was an assortment of the scarcer immigrant species which is unusually large for an inland locality. The trap was operated nightly until well into November, the only significant gaps being from 7th to 28th July and 29th to 31st August. The dates given below are those of the night beginning on the day mentioned.

Spodoptera exigua Hübner. 4th July, one fresh male.

Oria musculosa Hübner. 4th July, one female, very small and so pale that the usual white streaks on the forewings are hardly distinguishable from the ground colour. At the time I thought that the very early date for this species was due to the hot summer, and that this specimen was an internal wanderer, perhaps from an unknown colony in Surrey; but after comparing it with a similar one taken on the same night by Mr. Siggs in the New Forest, I conclude that they were both primary immigrants, like my own *S. exigua* and several other immigrant species which have since been reported on or about that date elsewhere.

Syngrapha interrogationis L. 10th August, one male of a Continental form—*vide Ent. Rec.*, **88**: 255.

Rhodometra sacraria L. 30th September, one male, tattered and rubbed.

Cyclophora puppillaria Hübner. 10th October, one male, slightly worn.

Mythimna vitellina Hübner. 13th October, one female f. *pallida* Warren. After four days of refusal this laid 150 eggs compactly under a sheath of grass. Kept in a living room at 60°/70°F., these hatched about 28th October, and the resultant moths began to emerge on 20th December.

Heterographis oblitella Zell. I am uncertain how much, if anything, this year's abundance of this species owed to immigration; but I certainly had my share of it: 30th June, one; 11th August, one; 26th August, two; 25th September, two—all in good condition. I have not seen it here before; but the dates suggest that in this year, at least, it was breeding nearby.

This list of relative rarities is the more surprising because the numbers of the regular immigrant species were not outstanding:

Autographa gamma L. began on 26th May and ended on 25th October; but on no night were as many as 10 in the trap, and the total, 103, is less than half the average for the previous twelve years.

Agrotis ipsilon Hufnagel began with one on 9th June and four more singles about the end of the month. In August it became fairly regular, with a maximum of seven on 17th; it

* Folly Hill, Birtley Green, Bramley, Guildford, Surrey, GU5 0LE.

continued to appear on many nights through September and until 30th October, but mostly singly. Except in mid-August there was little sign of any migratory influx, and local breeding from the June immigrants probably accounted for many of the August and later specimens. The year's total of 190 was little above the average.

Peridroma saucia Hübner gave only four singles, on 6th July and 6th, 8th and 22nd September.

Nomophila noctuella D. & S. also gave only four—one on 6th July, two on 4th August, and one on 15th August.

Udea martialis Hübner was not seen at all.

In summary, it appears that during the prolonged anticyclonic period, when winds were mainly from the north or east, there were few immigrants to Surrey, except for the single big influx around 4th July. Arrivals from the east were disappointing, apart from my own *S. interrogationis* and, among the butterflies, half a dozen *Nymphalis antiopa* L., which I was not fortunate enough to see myself. But we had more than our usual share of stragglers from the south western immigrants which became numerous on the south coast from late August onwards. The last half of October and early November were, however, disappointing here, perhaps because of the almost continuous rain and the low day temperatures which ushered in a gloomy and sunless autumn to off-set the brilliance of the summer.

Notes and Observations

SYMBIOTES LATUS REDT. (COL.: ENDOMYCHIDAE) IN EAST AND WEST KENT. — The sole published Kent record of this uncommon beetle appears to be of one specimen under bark of a rotten log at Bexley (K. C. Side, 1957). I took a few under bark of a dead fallen or felled poplar at Abbey Wood in 1964-65, but it seemed very scarce. Both localities are in the north of West Kent, and I can also report the species from the eastern vice-county — my friend Mr. G. Shephard having taken at least three or four examples from an old ash tree in Napchester Wood, near Dover (vii.70). I only once came across *S. latus* in any numbers (Whitewebbs Wood, Enfield, Middx., in a section of log or post forming one of the supports of a rustic seat, v.42). In Windsor Forest I have met with it but twice, singly, both times associated with beech. — A. A. ALLEN.

THE PINE BEAUTY (PANOLIS FLAMMEA D. & S.) IN EASTBOURNE IN 1977. — On the night of the 12th of April this year, I was pleased to find a perfect specimen of this moth in an actinic light trap at Friston Forest. This is the first ever record of this moth being taken in Eastbourne. Adkin (1930) does not list this species, and I am not aware of any other record for the area. — MARK HADLEY, 7 Beverington Close, Eastbourne, Sussex.

SOME LESS COMMON MACROLEPIDOPTERA TAKEN AT LIGHT AT ASHURST, HAMPSHIRE FROM JULY TO DECEMBER 1976. — I have recently moved to Ashurst, and since July 1976 have been running a m.v. trap there almost nightly. Mr. L. W. Siggs confirmed the determinations of the species taken and suggested the rarer ones might be worth publishing. In the following list, where only one or two were taken, this is stated.

Trichiura crataegi (L.), *Drepana cultraria* (F.) (2), *Idaea emarginata* (L.) (1), *Scotopteryx chenopodiata* (L.), *Horisme vitalbata* (D. & S.) (1), *Eupithecia phoeniceata* (Rambur) (1), *Ligdia adustata* (D. & S.), *Eilema deplana* (Esp.), *Spaelotis ravida* (D. & S.), *Eurois occulta* (L.) (1), *Mythimna albipuncta* (D. & S.) (1), *Cucullia asteris* (D. & S.) (1), *Aporophyla lutulenta* (D. & S.), *Lithophane semibrunnea* (Haw.) (1), *L. socia* (Hufn.) (1), *L. leautieri* (Boisd.), *Xylena vetusta* (Hbn.) (1), *Dryobotodes eremita* (F.), *Xanthia aurago* (D. & S.), *Apamea ophiogramma* (Esp.) (1), *Eremobia ochroleuca* (D. & S.), *Hydraecia petasitis* (Doubl.) (2), *Celaena leucostigma* (Hbn.) (1), *Stilbia anomala* (Haw.) (1), *Abrostola trigemina* (Wern.) (1), *Catocala promissa* (D. & S.). — Dr. J. C. A. CRAIK, Dept. of Oceanography, The University, Southampton.

A SECOND GENERATION OF THE BROAD-BORDERED BEE HAWK-MOTH (HEMARIS FUCIFORMIS L.). — I observed this moth, sometimes three or four simultaneously, on several days in early August 1976 feeding at the flowers of buddleia in Ashurst, Hants., and took a specimen for my collection. — Dr. J. C. A. CRAIK, Dept. of Oceanography, The University, Southampton. [This notable record is the first to our knowledge of a second generation of this moth in Britain, though the species is regularly double brooded on the continent. — Editor.]

BEROSUS SPINOSUS STEV. (COL.: HYDROPHILIDAE) NEW TO WEST KENT. — A specimen of this very local water-beetle most unexpectedly visited my m.v. lamp here on 3rd July, 1976. As a denizen of brackish marshes with a south-easterly distribution, it is remarkable that there appears to be no previous record for West Kent, a well-worked vice-county in the north of which suitable habitats must have abounded along the tidal reaches of the Thames eastward to the estuary. My beetle must of course have been a wanderer, and cannot be positively asserted to have originated in West Kent; the nearest known localities are, or were, on the coasts of South Essex and East Kent. On the other hand, the species could perhaps have recently established itself in some brackish ditch that may, conceivably, remain in the general area of the old Greenwich Marshes, only a short distance from here; especially as a number of marsh-land species were attracted about the same time. The very limited range of *B. spinosus* in our islands may be seen from Map 23 in Balfour-Browne, 1958, *British Water Beetles*, **3**: 73. — A. A. ALLEN.

L. temerata Denis & Schiffermüller : Clouded Silver.

Native. Woods, bushy places; on hawthorn, wych elm, wild plum, wild cherry, apple, aspen. Found in all divisions, except 2, 15; few records for 4, 9, 16. Fairly frequent though apparently never very plentiful. D. R. M. Long recorded a total of 70 *temerata* at light at Bromley in 1964, but his maximum total for any one night was in 1961 with nine on May 24th. In 1965, the same observer first recorded the moth at Bromley on May 14th, and in the same year at that locality as late as August 8th, but whether the latter was one of a partial second generation is questionable.

Machin (*Zoologist*, 6030) records breeding the moth from a larva that he found in September 1856 in Joydens Wood on wild cherry; and P. Cue has found the larva at Ashford on apple. R. G. Chatelain took several larvae at Petts Wood on aspen; and D. R. M. Long has taken it on hawthorn at Lullingstone, High Elms and Shoreham, on wild plum at Westerham Hill, and on wych elm at High Elms.

4. Ickham, 1954-59 (D. G. Marsh).

9. Near Monkton, one, June 27th 1912 (J. W. C. Hunt).

16. Folkestone Town, June 22nd 1953 (A. M. Morley).

VARIATION. — In RCK are the following named aberrations: *pauper* Hoffm., Dover, 1884; trans ad *pauper* Hoffm., Westerham; *sericeata* Hörhammer, Woolwich Wood, Dover, 1888.

FIRST RECORD, 1841: Harrietsham (Stephens, *Entomologist*, **1**: 200).

Aleucis distinctata Herrich-Schaffer : **pictaria** sensu Curtis : Sloe Carpet.

Native. Rough commons, bushy places, thickets; on sloe.

Nowadays no colony of this species is known to survive in Kent, and the moth seems to have become extinct in all its old localities. Yet, the odd captures within the past 20 years suggest that this very local insect may still persist in the county. In 1952, L. T. Ford and I searched for it assiduously on Dartford Heath but failed to find it, and in that year I also looked for it unsuccessfully at Chattenden. Perhaps the secret of its extreme localism may be found in E. G. Baldwin's remark of 1858 concerning the larvae (in *Ent. week. Int.*, **4**: 102) that "they seem very particular, as they will eat no other blackthorn than what comes from Dartford Heath, unless starved of it"; and of Stainton's note (*loc. cit.*) that the "remarkably stunted growth of the sloe bushes there, adds I suppose, to the flavour of the leaves".

1. Between Eltham and Birch Wood, two taken in the spring of two successive years (Stephens, *Haust.*, **3**: 184). Dartford Heath, one, April 17th 1820, two, May 1st 1826, taken by Jos. Standish; another taken mid April by Thomas Marshall (Curtis, *Br. Ent.* (1833), 447); one taken by B. Standish (1845) (Douglas, *Zoologist*, 1042); three, 1846 (Stevens, *Zoologist*, 1347); near Dartford, one, 1852 (Harding, *Zoologist*, 3532); taken annually 1855-59 (*Ent. Ann.*, **1856**: 48; *Zoologist*, 5209, 6104; *Ent. week. Int.*, **1**: 43, 46, **2**: 36, **4**: 36, 44, 59, 102, **6**: 27); in 1858, Newman (*Zoologist*, 6104) records that he alone knew of 128 specimens taken on Dartford Heath that year; and the same observer (*Entomologist*, **5**: 382) states that the larva when a fortnight old "may be beaten . . . from the dwarf blackthorn . . . at Dartford Heath . . . "; two moths taken by A. H. Jones, April 1874 (Fenn, *Diary*); one taken by L. T. Ford on a sloe bush c. 1913, apparently the last to be seen on Dartford Heath (C.-H.).

2. Belvedere, two taken by W. Marshall "sometime ago" at Belvedere, on the road from the Leather Bottle to the marshes (Fenn, *Diary*, 28.vii.1883).

6. Gravesend*, one in H. D. Stockwell coll. labelled "Gravesend" [c. 1880] (C.-H.).

6a. Chattenden, not uncommon, c. 1908 (H. C. Huggins).

9. Haine, Margate, two taken by H. G. Gomm, April 7th 1920, in H. G. Gomm coll.† (C.-H.).

11. Maidstone Town, one on a gas lamp, c. 1896 (F. T. Grant). Ulcombe, one taken in a light trap by R. Knight, in his garden, 1975 (I. A. Watkinson).

12. Charing*, one by Thomas Marshall (Curtis, *loc. cit.*). Near Ashford*, one, April 23rd 1900 (Chittenden, *Entomologist,* **33**: 307).

13. Tunbridge Wells district* (R. H. Rattray in Knipe, 1916); scarce (M. M. Phipps in Knipe, 1916). Goudhurst, one, April 6th 1960 (W. V. D. Bolt).

First Record, 1831: Stephens, *Haust.,* **3**: 184.

Theria rupicapraria Denis & Schiffermüller : Early Moth.

Native. Hedgerows, thickets, scrub; on hawthorn, sloe. Found in all divisions; once only in 15.

The moth normally appears in February and March, but in 1949 it was reported as having been seen in Kent on January 5th (*Proc. S. Lond. ent. nat. Hist. Soc.,* **1949-50**: 2); and in 1957, W. L. Rudland noted it at light at Wye on January 9th. Chaney (1884-87) gave its time of appearance in the Rochester neighbourhood as from December to April; and Wells (*Ent. Rec.,* **2**: 87) records one from West Wickham Wood on April 14th (in 1891).

Many observers have recorded finding the larva on both sloe and hawthorn. For example, plentifully at Dartford on hawthorn, June 10th 1924 (A. R. Kidner, *Diary*); and D. R. M. Long found it on sloe at Shoreham and Eynsford.

15. Dungeness, one, February 24th 1971 (R. E. Scott).

First Record, 1859: Tenterden, abundant (Stainton, *Man.,* **2**: 70).

Campaea margaritata L. : Light Emerald.

Native. Woods, bushy places, orchards; on hawthorn, hazel, *Ligustrum vulgare,* beech, birch, ash, apple. Recorded from all divisions; few records for 2, 4, 15. "Generally common" (*V.C.H.,* 1908).

There appears to be a partial second generation some years, e.g. Strood, August 31st 1889 (Tutt, *Ent. Rec.,* **1**: 19); Sevenscore, September 3rd (1), 10th (1) 1926 (J. W. C. Hunt); Folkestone, September 2nd 1953 (Morley, *Proc. S. Lond. ent. nat. Hist. Soc.,* **1953-54**: 38); Ham Street, September 8th 1950 (R. W. Parfitt); Broad Oak, September 21st 1951 (Chalmers-Hunt, *Ent. Rec.,* **64**: 54); Margate, September 28th 1921 (H. G. Gomm); Folkestone Warren, September 25th 1956 (W. L. Rudland); Bexley Woods, a living male exhibited at Ent. Soc. Lond. by L. W. Newman which was taken at rest (Wheeler, *Entomologist,* **46**: 21).

The larva has been found by E. A. Sadler at Sevenoaks Weald on wild privet and hazel; by M. Singleton at Willesborough on hawthorn; and by D. R. M. Long at High Elms on birch and ash, and at Lullingstone on beech and hawthorn. Massee (*Rpt. E. Malling Res. Stn.,* **1939**: 71) records finding larvae on apple in an orchard at Rainham in March 1939.

2. Royal Oak, Sheppey, June 3rd 1868 (J. J. Walker MS.).

4. Ickham, occasionally, 1954-59 (D. G. Marsh).

15. Dungeness, June 30th-July 3rd 1954 (R. F. Bretherton).

First Record, 1858: Pembury (Stainton, *Man.,* **2**: 10).

Hylaea fasciaria L. : **prosapiaria** L. : Barred Red.

Resident, perhaps native. Woods; on *Pinus sylvestris, Picea abies, Pseudotsuga taxifolia.* "In most of the fir woods in the county" (*V.C.H.,* 1908).

1. Birch Wood, occasionally taken (Stephens, *Haust.,* **3**: 177). Plumstead (Courtney, *Entomologist,* **1**: 227). Dartford Heath (Bedell, *Zoologist,* 1007). West Wickham, larva, April 6th 1861 (Fenn, *Ent. week. Int.,* **10**: 195); larva on Scotch fir, imago bred 1864 (Meek, *Ent. mon. Mag.,* **1**: 190); one, June 10th 1912, in J. P. Barrett coll. (C.-H.). Bostall Wood (C. Fenn in *Wool. Surv.,* 1909). Keston, Farnborough (W. Barnes in *Wool. Surv.,* 1909). Keston, two larvae, May 19th 1921 (A. R. Kidner, *Diary*); a larva beaten from pine, April 1949 (W. A. Cope). Bromley, 1959 (3), 1960 (8), 1961 (8), 1962 (17), 1963 (9), 1964 (25), 1965 (8), 1966 (16), earliest date June 6th 1960, latest date August 23rd 1965, maximum daily total (4) on August 2nd 1962 (D. R. M. Long). Bexley, ♂, July 26th 1967 (D. O'Keefe). Lee, one, June 23rd 1959 (C. G. Bruce).

3. Thornden Wood, one, July 12th 1922 (H. G. Gomm, *Diary*).

West Blean Wood, a larva beaten from pine, April 18th 1939; female on pine trunk, July 6th 1946 (C.-H.).

5. Downe (W. Barnes in *Wool. Surv.*, 1909).

6. Greenhithe, in light trap (A. B. Farn MS.). Cuxton, pre. 1890 (see under *Variation*). Otford, 1955 (W. B. L. Manley in de Worms, *Lond. Nat.*, **1957**: 153).

7. Darland Hill, one (Chaney, 1884-87). Sharsted (H. C. Huggins). Westwell (Scott, 1936).

8. Folkestone* (Ullyett, 1880). Betteshanger (A. M. Morley *teste* E. & Y., 1949). Chillenden, one, July 17th 1955 (W. D. Bowden). West Wood, ♂, June 12th 1949 (Morley, *Trans. Folkestone nat. Hist. Soc.*, **1949-50**: 18); three, June 29th 1957 (A. M. Morley).

10. Westerham (see *First Record*); July 5th 1913 (Adkin, *Proc. S. Lond. ent. nat. Hist. Soc.*, **1913-14**: 117); (R. C. Edwards). Seal Chart (Carrington, *Entomologist*, **13**: 79); one, July 20th 1888 (Fenn, *Diary*); larvae (Adkin, *Proc. S. Lond. ent. nat. Hist. Soc.*, **1905-06**: 41). Hosey Common, larva, September 1912, reared (Gillett, *Diary*). Brasted (R. M. Prideaux). Sevenoaks, two, June 15th 1919 (Gillett, *Diary*); 1939 (F. D. Greenwood). Goodly Stock, ♀, July 6th 1956 (C.-H.).

11. Harrietsham (Stephens, *Entomologist*, **1**: 200). Wateringbury, one bred 1910, in E. Goodwin coll. (C.-H.). Shipborne, one, 1912, in P. A. & D. J. A. Buxton coll. (C.-H.). Aylesford, at light, 1952 (1), 1953 (4), 1955 (G. A. N. Davis).

12. Ham Street (Scott, 1936); Orlestone Woods, one, July 15th 1962 (G. Haggett); and others since, including green abs. (see under *Variation*). Ashford, in garden, July 13th 1955, June 10th 1956, July 1961 (P. Cue MS.). Willesborough, two, July 20th-21st 1956 (W. L. Rudland). Orlestone Woods, April 11th 1977, one larva on *Picea abies*, two larvae on *P. taxifolia* (B. Skinner and C.-H.).

13. Pembury (Stainton, *Man.*, **2**: 11). Tunbridge Wells, fairly frequent (Knipe, 1916). Groombridge (Bull, *Proc. S. Lond. ent. nat. Hist. Soc.*, **1931-32**: 59). Goudhurst, one at light, 1950 (W. F. Hodge).

VARIATION. — Davis (*Bull. Kent Fld. Cl.*, **1**: 6) states that at Aylesford in 1955, the species was "represented by both the pale and dark brown forms". I have one of his "dark brown forms" from there dated July 7th 1955, and it appears referable to ab. *grisearia* Fuchs. (C.-H.).

Ab. *prasinaria* D. & S.: The first example of this green form was taken by T. Jones in the Eltham neighbourhood on June 15th 1861 (Jones, *Entomologist*, **3**: 228) (locality given as Charlton in *Wool. Surv.*, 1909). C. Fenn (*Diary*, 30.xii.1890) states that J. W. Tutt took one at Cuxton "some years ago"; a *prasinaria* in RCK labelled "Cuxton 1894 J. W. Tutt" may be this specimen despite the date. No more *prasinaria* were noted in Kent until 1974, when on July 8th, D. W. H. Ffennell took one at light in Long Rope, Orlestone Woods which was recorded by Emmet (in *Proc. Brit. ent. nat. Hist. Soc.*, **7** (4), 113); and on September 14th at the same locality, B. Skinner took a ♂ at light. None was seen in 1975 to my knowledge, but in 1976 at least 21 *prasinaria* were taken at light in Orlestone Woods, of which B. Skinner got a ♂ in Long Rope on June 24th and 10 ♂ ♂, 2 ♀ ♀ in Birchett amongst some 20 typical examples and four ♂ ♂ of an "orange form". The rest were taken by P. J. Rogers (3 ♂ ♂, June 26th); B. K. West (♂, June 29th); R. F. McCormick (1); R. G. Chatelain (2 ♀ ♀, July); and P. J. Renshaw (♂, July 24th). In 1943, Heydemann (*Iris*, **56**: 165-166), in a paper on the genetics of *prasinaria*, recorded the green form as recessive, the red-brown dominant.

In RCK are the following named abs.: *ochrearia* Joannis, Westerham, bred June 1897; *cinereostrigaria* Klem., Sevenoaks, bred 1919; *grisearia* Fuchs, Cuxton, 1894, J. W. Tutt; *approximata* Lempke, Westerham, bred; *prasinaria* D. & S., Cuxton, 1894, J. W. Tutt.

FIRST RECORD, 1809: "Apud Westerham in Cantio, mares olim cepi volantes" (Haworth, *Lep. Brit.*, **2**: 301).

Gnophos obscuratus Denis & Schiffermüller : Annulet.

Native. Downs, rough chalky places, heaths, sandpits, peaty banks; on *Poterium sanguisorba, Lotus corniculatus.*

1. Brockley (W. West in *Wool. Surv.*, 1909). Bromley, one in a sandpit, 1950 (W. A. Cope). Dartford Heath, fairly common annually on heather bloom at night (B. K. West). Petts Wood, several annually, common 1947-48 (E. Evans); one, 1950, five, 1951, in A. M. & F. A. Swain coll. (C.-H.). Orpington, "one dark grey example in trap", September 10th 1963 (R. G. Chatelain).

2. Higham, one taken on rough ground by the Uralite Works, August 9th 1959 (Trundell, *Proc. S. Lond. ent. nat. Hist. Soc.*, **1959**: 89).

6. Greenhithe (A. B. Farn MS.). Shoreham, one, July 24th 1886 (Fenn, *Diary*). Otford (*V.C.H.*, 1908); July 27th 1912 (Adkin, *Proc. S. Lond. ent. nat. Hist. Soc.*, **1912-13**: 98). Birling, August 15th, September 2nd 1910, August 11th 1916 (F. T. Grant); (H. C. Huggins). Wrotham, twenty, August 1906, in E. Goodwin coll. (C.-H.); several in W. A. Cope coll. (C.-H.); (B. K. West). Pinden, one, August 20th 1945 (E. J. Hare). Stone, September 1st 1949, August 13th 1956, common on flowers of *Clematis vitalba* (G. Law).

7. Burham Downs, not uncommon (Chaney, 1884-87). Boxley (Reid, *S.E. Nat.*, **1904**: 53); one August 1906 in E. Goodwin coll. (C.-H.). Detling (G. V. Bull). Westwell, August 17th 1939 (A. J. L. Bowes); 1946 (Bull, *Proc. S. Lond. ent. nat. Hist. Soc.*, **1946-47**: 169); several, August 9th 1955 (C.-H.). Bearsted (E. J. Hare). Godmersham, one, c. 1948 (A. G. Maconochie).

8. Dover (see *First Record*); on stony chalk (Dale, *Ent. Mag.*, **1**: 515); not uncommon on the cliffs (E. & Y., 1949). Kingsdown to St. Margaret's Bay, August (1883), occasionally common but local (Shepherd, *Entomologist,* **17**: 136). St. Margaret's Bay, 1890 (Fenn, *Diary*). Kingsdown, 1867 (Fenn, *Diary*). Near Deal (Harding, *Ent. week. Int.*, **1**: 163). Deal, under the cliffs, 1864 (Gill, *Ent. mon. Mag.*, **1**: 243). Dover, undercliff, one, August 19th 1895 (H. D. Stockwell, *Diary*). Folkestone — 1858 (H. Tomkins, *Diary*), 1860 (Fereday, *Ent. week. Int.*, **9**: 139); common, 1864 (Meek, *Ent. mon. Mag.*, **1**: 190); Warren, common (Knaggs, 1870); larvae below Capel, April 5th 1938, on *L. corniculatus* and *P. sanguisorba* at night, bred, moths abundant below Lower Crete Road and Sugar Loaf Hill, August 5th 1950 (C.-H.); Caesar Camp, a few worn, September 4th 1949 (R. F. Bretherton). Near Canterbury* (Parry, *Entomologist,* **5**: 395). Canterbury, one at light in the Dover Road, c. 1946 (J. Parry). Wye Crown, one, August 19th 1924 (H. G. Gomm, *Diary*). Brook; Wye (C. A. W. Duffield). Brook, one, 1959 (D. Youngs).

9. Margate, common in old chalk cuttings, 1929-30 (H. C. Huggins).

11. Holt Wood, Aylesford, one annually at m.v. light trap, 1951-53 (G. A. N. Davis).

12. Willesborough, ♀ in m.v. trap, August 19th 1962 (M. Singleton).

13. Broadwater Forest, abundant on forest-land, resting on peaty banks at the sides of the roads (Knipe, 1916; Given, 1946); Tunbridge Wells (E. D. Morgan).

16. Hythe, six, August 9th 1905, in E. Goodwin coll. (C.-H.); one, 1951 (C.-H.). Folkestone Town, one or two (A. M. Morley).

VARIATION. — Throughout its range on the chalk, the moth is generally greyish finely speckled with black, the ground colour tending to become rather more dark to the west of the country. In East Kent, the normal form is referable to ab. *woodiata* Prout, and about Folkestone and Dover approximately one in fifteen conforms to ab. *fasciata* Prout. Off the chalk the form can be very different, and two of Dr. Davis's three Holt Wood, Aylesford specimens which I possess are transitional to examples of ab. *obscuriorata* Prout from the New Forest (C.-H.).

In RCK are the following named aberrations: *woodiata* Prout, Folkestone (numerous), Dover, Wrotham; *fasciata* Prout, Folkestone and Dover (68); *argillacearia* Stgr. + *fasciata* Prout, Folkestone, Cooper's Sale, 8.vii.1896 (1).

FIRST RECORD, 1831: "Abundant behind the Castle at Dover in August" (Stephens, *Haust.*, 3: 267).

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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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CONTENTS

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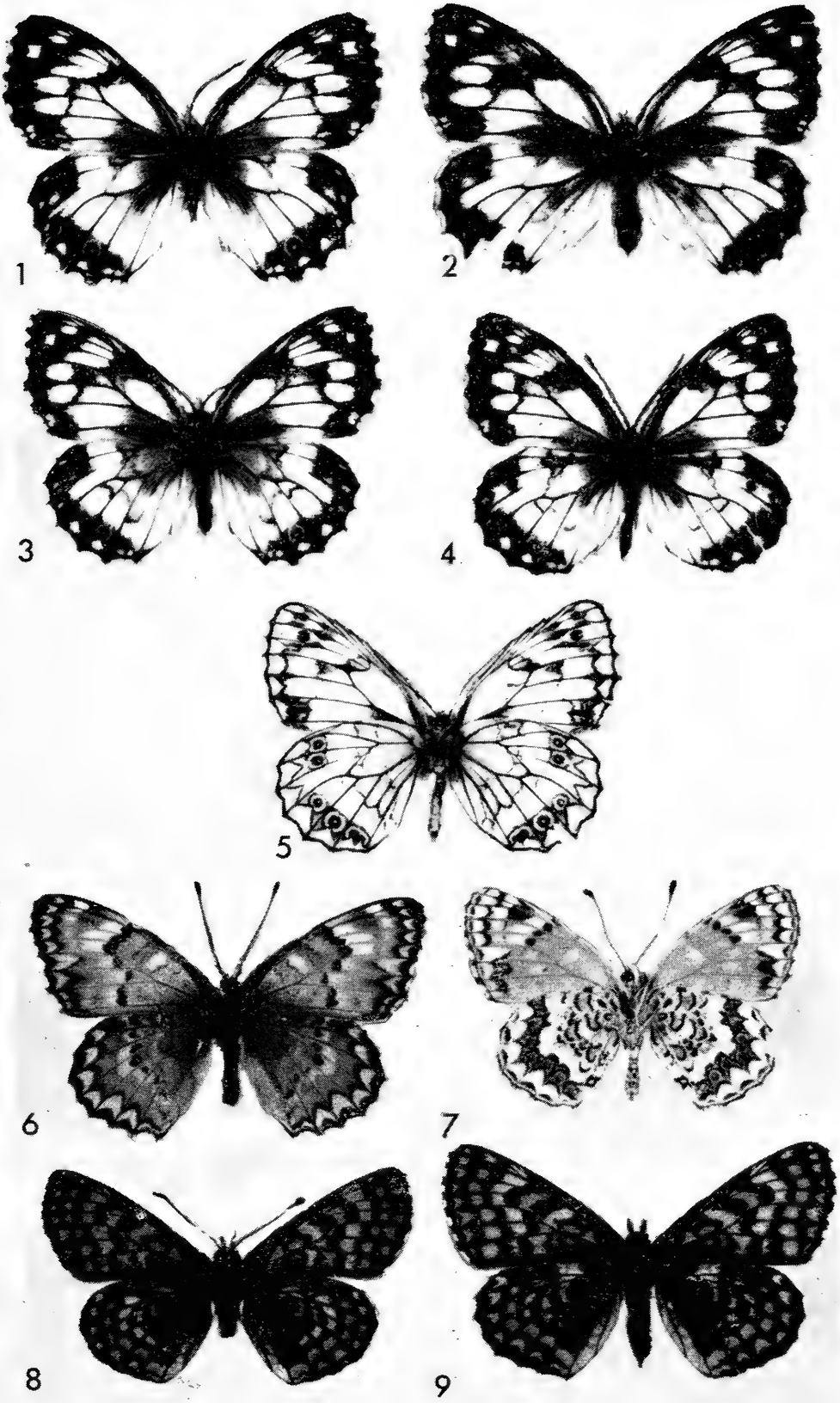

1
2
3
4
5
6
7
8
9

New Palaearctic Butterflies

By Dr. L. G. Higgins*

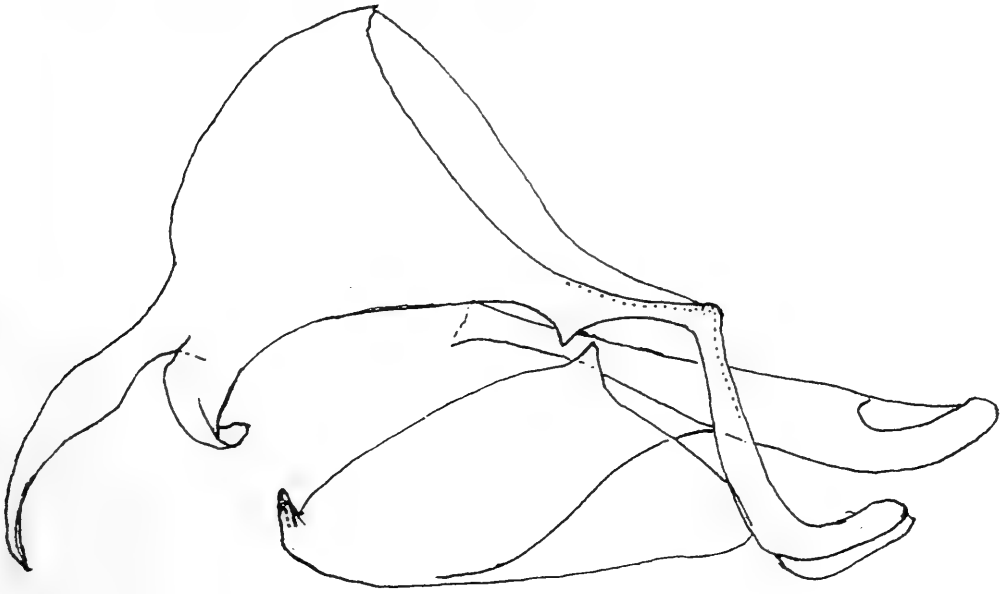
A new subspecies of *Melanargia galathea* L., the spring brood of *Mellicta deione* Geyer and the female of *Melitaea sarvistana* Wiltshire, hitherto unknown, are described and figured.

Melanargia galathea **origo** subsp. nov. (figures 1-5)

♂ forewing costa 24-25 mm., like *M.g. lachesis* of the small form *alta* Oberthur, upperside white areas extensive, veins lined black, forewing cell-space elongate, black discoidal markings variable, often greatly reduced; hindwing upperside black basal and discal markings vestigial if present; underside veins firmly lined black, forewing black discoidal markings reduced or vestigial, hindwing underside ground-colour faintly yellowish, discal band complete in outline, filled grey in some specimens.

♀ forewing costa 27 mm., upperside similar, ground-colour faintly yellowish, discal band dark grey.

Male genitalia (text figure), like *M.g. lucasi,* in side view brachia shorter and wider, tegumen more steeply domed, vinculum sharply angled at junction with peduncle, valve rather narrow, terminal tooth single.



M. galathea origo ♂ genitalia × 50

Distribution. All specimens were taken by Douglas Cotrill in a single colony in N.E. Iran, about 80 miles east of Gorgan, on June 21st, 1973, altitude 800 m.

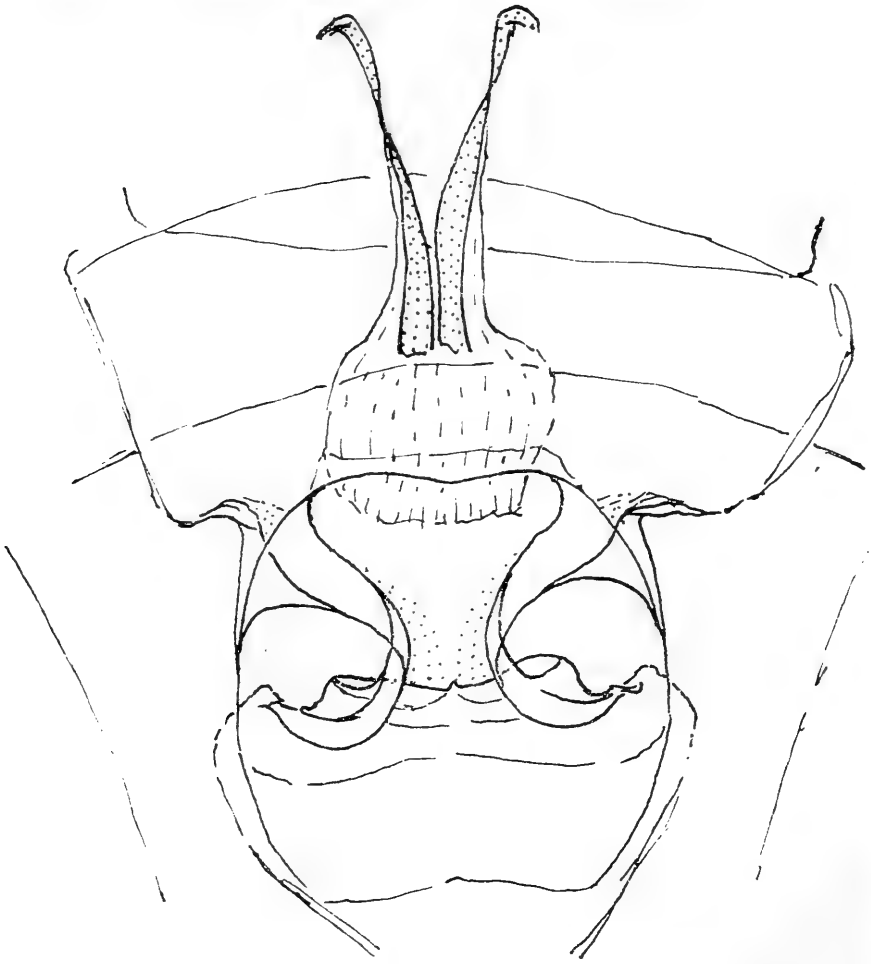
♂ holotype (fig. 1) and ♀ allotype (fig. 2) are now in coll. British Museum (N.H.). Three ♂♂ paratypes are figured are in the author's collection; ♂♂ and ♀♀ paratypes are in coll. D. C. Cottrill.

* Focklesbrook Farm, Chobham, Woking, Surrey.

Among the subspecies of *M. galathea* so far described, the firmly black-lined wing-veins and the ♂-genitalia of *origo* both recall *M.g. lucasi* Rambur, while on the upperside the elongate forewing cell suggests *M.g. lachesis* Hübner. This last feature is present in many specimens of *M.g elbursica* de Lesse, but this rather heavily marked form is much closer to *M.g. galathea* in most respects.

Melitaea sarvistana Wiltshire (figure 6, ♀, figure 7, ♂)

This species was discovered in S.W. Iran by E. P. Wiltshire, who described and figured the male in 1941. The female remained unknown until 1972, when specimens were collected by Douglas Cottrill some distance north of Shiraz. The example now illustrated was selected from four of these specimens now in my collection. On both surfaces these scarcely differ from males, with very little variation, but on the forewing upperside the pale postdiscal markings are some-



M. sarvistana ♀ genitalia × 50

times more prominent, pale yellow or white. The ♀-genitalia (text figure) confirm a close relationship with *M. phoebe* Denis & Schiffermüller. Ref.: Wiltshire, E. P., 1941. *J. Bombay Nat. Hist. Soc.*, **42**: 473 and figure.

Mellicta deione rosinae Rebel 1911 (figures 7, 8)

Description. Both sexes large, ♂ forewing 23 mm., upperside ground-colour dark fulvous, not unlike *M.d. berisalii* but larger and black markings notably heavier; hindwing upperside has a broad, black area in space 1c and space 2, marginal fulvous lunules well defined; hindwing underside discal and submarginal bands intense, fiery orange-red. ♀ forewing 25-26 mm., similar to ♂ but larger, forewing upperside post-discal band slightly yellowish in three specimens, but colour contrast little developed in this series, although sometimes present in females in another series from the same area. Described from 2 ♂♂, 6 ♀♀ taken by Mr. H. J. Henriksen (Denmark), on April 19th-27th, 1972 in the Serra da Monchique, Algarve, S. Portugal. These specimens represent the first generation; specimens of the second generation from this locality have not been seen. Because of their large size and dark appearance they are hard to recognise as a form of *M. deione,* and at first sight I thought they might deserve description as an undescribed subspecies. *M.d. rosinae* was described by Rebel from specimens bred from larvae found in April at Cintra, north of the Tagus; the butterflies emerged in July, i.e. second generation. Males are of average size, forewing 17-18 mm., upperside rather dark fulvous and heavily marked, but unlike the large specimens taken by Mr. Henriksen. Specimens of the first brood from Cintra have not been seen. I believe now that the large April specimens must represent the first generation of *M.d. rosinae.* These, with their striking characters so unlike all other known subspecies of *deione,* need this short description and illustration. Mr. Henriksen has kindly presented male and female specimens to the British Museum.

HELINA PROTUBERANS ZETT. (DIPT.: MUSCIDAE) NEW TO KENT AND S.E. ENGLAND. — A ♀ *Helina* of a species unfamiliar to me, taken at Sandwich Bay, E. Kent (8.vi.66), later turned out to belong to this local sandhill-frequenting species — a determination for which, among hundreds of others, I am indebted to the kindness of my friend Mr. E. A. Fonseca. The present capture would seem to constitute a new record not only for Kent but for south-east England as a whole, since the distribution given by Fonseca (1968, *Handb. Ident. Brit. Ins.,* **10** (4b): 45) includes no county nearer than Hants. and Norfolk. *H. protuberans* seems thus to have a strong western bias in the south, extending to Cornwall and Anglesey; its distribution is somewhat reminiscent of that of another insect with a similar habitat, namely the tiger-beetle *Cicindela maritima* Latr. & Dej., which also occurs nowhere else in Kent (or the whole south-east sector?) but at Sandwich Bay. — A. A. ALLEN, 49 Montcalm Road, Charlton, London, SE7 8QG.

The Scarcity of the Orange-tailed Clearwing (*Aegeria andrenaeformis* Laspeyres)

By M. R. Britton*

As during the last three winters searching for *Aegeria andrenaeformis* larva has hardly given the sort of results I expected from a study of what current literature I could muster, I thought my findings might be of interest to, or help to, other *andrenaeformis* sufferers. The literature I have used is AES Leaflet No. 18 "Collecting Clearwings" (1946), and "The Sesiidae of Fennoscandia and Denmark" by Fibiger and Kristensen (1974).

I first decided to search scarp slope localities on the Chilterns as these chalk downs are most local to me. In three separate localities I found a fair amount of Wayfaring Tree (*Virburnun lantana*) with numerous old, much enlarged, blackened exit holes, but nothing that looked at all recent. This was after about 60 hours of searching in the 1974/75 winter. Therefore, I concluded that either my eyesight was failing or it was NOT true that "old exit holes are a certain indication of the presence of the species in a locality". From all three winters I retired puzzled and defeated with only two or three twigs cut and these showing very little real hope of occupance by a larva as was born out the next summer, despite plenty of watering of the twigs which were standing upright in damp sand.

In the 1975/76 winter I started again even more determined but convinced that the tried localities were dead ducks. Mr. B. R. Baker of Reading suggested a different Chiltern locality, and here, sure enough, the exit holes looked fresher though the vast majority were the usual much enlarged and blackened, ancient ones. The fresh holes were uncapped with a few very symmetrical and clear cut in shape giving cause at last for real hope. However, the majority had coarse frass protruding from the exit hole in the uncapped area which I heard rumoured was a sure sign of a fine series of ichneumon flies. A visit with Paul Stirling and Danny Saunders to the North Downs showed fewer and smaller bushes than on the Chilterns and a large amount of hawthorn scrub. The usual old exit holes were found and then to my amazement a capped exit just where a bramble passed low down between a Y fork. The slight rupture at the edge of the cap showed yellowish frass (5), and the cap faced inwards in the Y fork.

Further visits to the Chilterns locality produced further uncapped holes, quite fresh looking. One such hole almost joined on to an ancient hole (2). Whilst cutting out a twig with just such a hole, I saw to my surprise and horror a perfect sunken cap at the top inch of the removed section (6). I had failed to see it because the tree was in a ditch and the capped side of the branch within a few inches of the edge of

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Figure 1

Figure 2

Figure 3

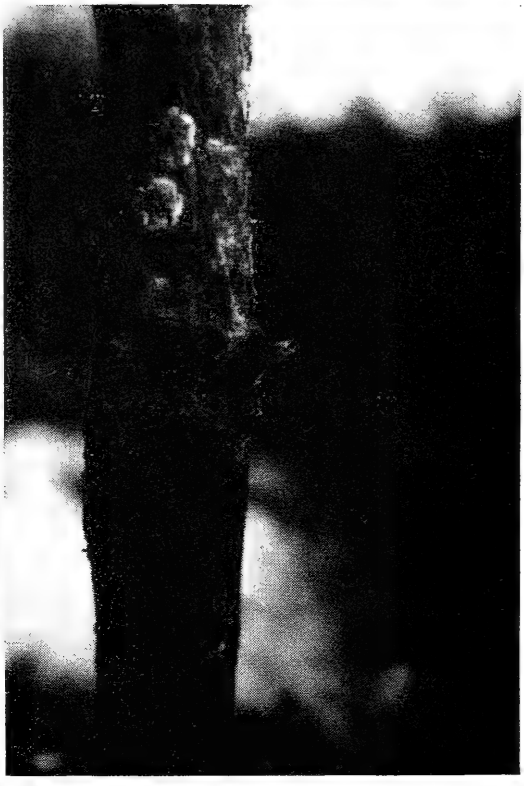

Figure 4

the ditch. As the exit hole is usually a few inches below the larval chamber, I cut the bottom section off the discarded stem, split it and was faced by an indignant *andrenaeformis* larva in its pupal chamber, so I promptly renewed his privacy by taping him up.

On a further visit I discovered no capped or uncapped holes but only three small ruptures in the bark that looked like small knife marks, tooth marks or scuffings. The edge of these marks was hard tapered bark and their shape almost random and quite assymetrical. Scratching with my finger nail showed a faint hole with a faint hint of frass but this was probably wishful thinking. There was no reddish or brownish edge of a hole as was usual with the fresh uncapped exit holes. I took these three scuffs because I found little else that visit, or I would certainly have ignored them. Two of the three scuffs each produced an *andrenaeformis* ! ! ! (3, 4).

On another visit I searched a likely looking, sheltered but sun-exposed bush and finding a newish uncapped hole cut the twig off and was about to discard the end of the twig when I was very surprised to spot a capped exit in a twig barely $\frac{1}{4}''$ in diameter and at a Y junction of two even smaller twigs (7). Later I climbed a large tree to examine the topmost branches and in the final terminal shoot spotted a large uncapped exit extruding much frass (1).

Now I had about six or seven clearly uncapped, fresh exit holes of which all but two had frass showing in a greater or lesser amount, and about four or five extremely dubious looking bark scuffings that could have been twig rubbings, rabbit nibblings or almost any abrasion. I also had in pride of place three capped exit holes that I was led to believe would produce moths.

The indignant larva separated from his capped exit hole was a problem; if I stood him the correct way up he would travel downwards and bump his head on the sand in which his twig was standing; if I inverted him, would he still try to go downwards and fail to find the exit? Well, he was a sensible fellow who wriggled upwards and protruded his pupal case from the centre of the cut and inverted stem. The three capped stems produced only this one moth! The uncapped stems produced two moths, one from a hole with frass. The irregular bark scuffings produced two moths. The moths ignored much of the perfect May weather and waited until I was in Scotland before emerging, so it was just as well that I covered them with towels to stop the sunlight exciting them until I returned home. I bred three types of parasitic flies yet to be identified.

The capped stems from the North Downs and the very narrow twig showed rather blackened tunnels when opened and no signs of larva, desiccated or otherwise. So perhaps the caps were covers of previous years' holes where the larva had died or been parasitised? As the twigs were well-watered and in a cool position, I doubt if they had dried out. With the

exception of the perfect looking cap (6) which, separated from the larval stem which produced a moth, it seemed from my small sample of collected twigs that the generalisation that unlikely and dubious looking scuffs or uncapped holes extruding frass are more likely to produce moths than the capped exit holes, is true. Perhaps we do not know as much about this moth as we think we do? If the data on the stems mentioned in the above account is of any help, here they are: —

	Capped/ Uncapped Exit Hole	*Frass*	*Cap Size*	*Stem Diameter*	*Height Above Ground*	*Position of Bush*	*Moth*
Fig. 1	Uncapped	Yellowish	$\frac{5}{16}$" x $\frac{3}{8}$"	$1\frac{1}{2}$"	18 ft.	Edge of thicket	Yes
Fig. 2	Uncapped	None	$\frac{5}{16}$" round	$\frac{3}{4}$"	2 ft.	Clearing	Yes
Fig. 3	Uncapped	Yellow	Shapeless	$\frac{3}{4}$"	3 ft.	Clearing	Yes
Fig. 4	Uncapped	None	Shapeless	$\frac{1}{2}$"	2 ft.	Clearing	Yes
Fig. 5	Capped	Yellow	$\frac{1}{4}$" round	$\frac{3}{4}$"	1 ft.	Clearing	No
Fig. 6	Capped	None	$\frac{5}{16}$" x $\frac{1}{4}$"	$1\frac{1}{4}$"	2 ft.	Ditch	Yes
Fig. 7	Capped	Orange	$\frac{1}{4}$" x $\frac{3}{16}$"	$\frac{3}{8}$"	6 ft.	Clearing	No

INFURCITINEA ARGENTIMACULELLA STAINTON (LEP.: TINEIDAE) IN KENT. — On the 8th of May, 1977 I paid a visit, in company with Mr. M. Newcombe, to Duncan Down, just outside Whitstable for the purpose of recording anything of interest. The Down is under some pressure for development by the Urban District Council which development is being resisted by local amenity and Natural History Societies.

The weather was not all that could be desired and created a dearth of insects. Several moths were taken including a specimen of *Eupithecia dodoneata* Guenee, but the most interesting thing was the discovery of larval tubes of *I. argentimaculella* Staint. amongst lichen on the lower trunks of some very large old willows growing by the edge of a stream in a valley on the down. I cut one larval tube away and, at home under the microscope, managed to open this and observe the larva, which is now feeding and extending the tube on to fresh lichen. — E. S. BRADFORD, 6 Maple Court, Drayton Road, Boreham Wood, Herts.

Figure 5

Figure 6

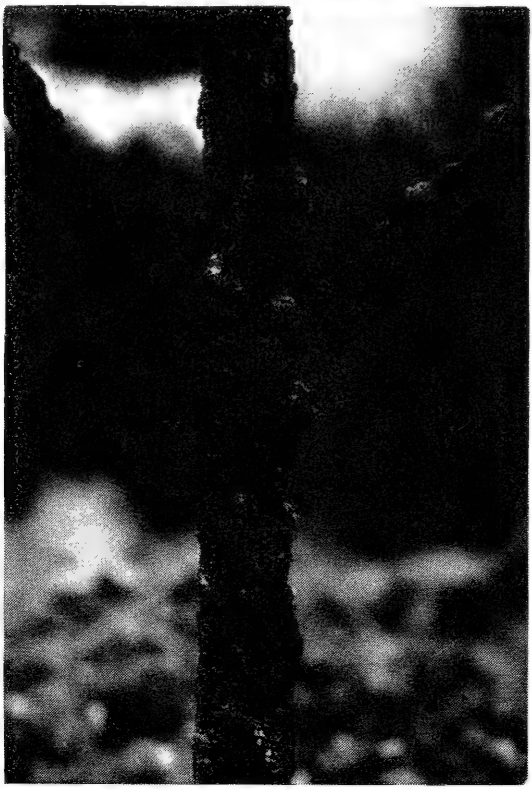

Figure 7

Coleoptera from Rothamsted light traps at Monks Wood National Nature Reserve, Cambridgeshire during 1976

By Dr. R. Colin Welch*

Although a wide variety of light traps are used extensively by Lepidopterists, comparatively little attention has been paid in the British Isles to the representatives of other orders which may be caught. Indeed, large Burying beetles of the genus *Necrophorus* and a number of Chafers and Dung beetles of the family Scarabaeidae are generally quickly discarded since they rapidly render delicate moths useless. Walsh & Dibb (1954) state "those species (of Coleoptera) recorded as coming to light in Britain are only common species", and they list only ten examples. This has been the long-held belief by many entomologists and goes some way to explaining the lack of information, and indeed interest in this method of collecting Coleoptera. A notable exception has proved to be *Odontaeus armiger* (Scop.) one of our rarer Scarabaeidae. Britton (1956) describes it as "very rare, S.E. England, flies in daylight and at dusk". Since then it has, to my knowledge, been taken six times in mercury vapour traps. Sir Eric Ansorge (1963) recorded it three times in Buckinghamshire; D. Tozer took three in June 1964, at Bedford Purlieus in the Soke of Peterborough (Vice County 32) (see Peterken & Welch, 1975), and J. N. Greatorex-Davies (*pers. comm.*) caught one female on 22nd July, 1955, near Llanstephen, Powys (Vice County 43).

Two standard Rothamsted traps (Williams, 1948) are operated throughout the year at Monks Wood. One is situated in the corner of the Meteorological enclosure in an open area just south of the station buildings (Site A), whilst the other is situated in Compartment 22a within Monks Wood N.N.R. (Site B). During 1976 Mr. Greatorex-Davies agreed to remove all Coleoptera when sorting the Lepidoptera catches. During the first four months 33 specimens of 14 species were collected, followed by 239 (31 spp.) in May and 712 individuals of 42 species in June. At this point, because of the volume of the catch and the pressure of other work, sampling stopped, although Site B was sampled on July 1st and Site A on August 12th. The July sample contained 39 specimens of 5 species recorded in June, whereas 4 of the 6 species (12 specimens) taken in August had not been recorded in the traps during the first half of the year.

In all 1,035 specimens of 76 species were collected during 183 trapping nights. 32 species were collected from Site A only, 28 spp. from Site B, with the remaining 16 spp. occurring at both sites. The two families Cantharidae (14 spp.) and Lagriidae (1 sp.) made up 87% of the catch, with *Lagria hirta* (23%) and *Malthinus flaveolus* (22%) the most abundant. 38 species were represented by single specimens equally divided between the two sites, although the Site B catch included two

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larvae; an unidentified *Dromius* sp. (Carabidae) and one *Exochomus quadripustulatus* (Coccinellidae).

It is well known that in some species of Coleoptera only the males are attracted to light, as in the sexually dimorphic *Lampyris noctiluca,* and species in which the males have larger eyes, e.g. *Lagria hirta* and *Denticollis linearis.* All specimens collected were sexed and this produced some interesting results among the Cantharidae where < 1% were females, and these were restricted to two species of *Malthinus.* In both cases the females were taken in the wooded Site B. Although no particularly rare species were collected, eight were previously unrecorded from the Reserve and two are probably new records for Vice County 31 (Huntingdonshire). Thus even in a well collected locality the results have been rewarding enough to repeat recording of Coleoptera in the light traps during 1977.

In the following complete list of species trapped, nomenclature follows Kloet & Hincks (1945) with some minor updating: —

CARABIDAE

Amara apricaria (Pk.), 12/8, 2 ♂♂, 3 ♀♀ (A). *Demetrias atricapillus* (L.), 27-28/2, 1 ♂ (B.). *Dromius quadrimaculatus* (L.), 26-28/3, 1 ♀ (B). *Dromius* sp., 21-23/5, 1 larva (B).

STAPHYLINIDAE

Anotylus sculpturatus (Gr.), 8/6, 1 ♀ (A), 1 ♀ (B); 15/6, 1 ♀ (A). *A. tetracarinatus* (Block), 18/5, 1 ♀ (A). *Platystethus nitens* Sahlb., 7-9/5, 1 ♂ (A). *Lathrobium fulvipenne* (Gr.), 21-23/5, 1 ♀ (A). *Xantholinus glabratus* (Gr.), 7-9/5, 1 ♂ (B). *Tachyporus chrysomelinus* (L.), 7-9/5, 1 ♀ (A), 18/5, 1 ♂ (A). *T. hypnorum* (F.), 14-16/5, 1 ♀ (A). *Leptusa fumida* Er., 16/3, 1 ♀ (B). *L.* (*Pachygluta*) *ruficollis* (Er.), 16/3, 1 ♀; 17/3, 1 ♂; 26-28/3, 1 ♀ (all B). *Autalia rivularis* (Gr.), 18-20/6, 1 ♂ (A). *Amischa analis* (Gr.), 11-13/6, 1 ♀ (A) *Atheta* (*Aloconota*) *gregaria* (Er.), single ♂♂ 7-9/5, 14-16/5 & 18/5; 2 ♂♂ 21-23/5; 2 ♀♀ 10-13/6 (all A). *A.* (*Tetropla*) *crassicornis* (F.), 2-4/4, 1 ♂; 6/5, 1 ♂; 7-9/5, 2 ♂♂ (all B); 12/8, 1 ♂ (A). *A.* (*Acrotona*) *fungi* (Gr.), 5/5, 2 ♀♀ (A). *Aleuonota rufotestaceus* (Kr.), 7-9/5, 1 ♀ (B). *Tinotus morion* Gr., 22/6, 1 ♀ (A). *Oxypoda brevicornis* (Steph.), 7-9/5, 1 ♀ (A). *Aleochara sparsa* Heer, 20-22/2, 1 ♂ (B). *A. stichai* Lik., 24 & 25-27/6, 2 ♀♀ (B).

SCARABAEIDAE

Aphodius rufipes (L.), 18/6-1/7, two single ♂♂ (B); single ♀♀, 1 (A) 3 (B).

ELATERIDAE

Melanotus rufipes Hbst., 21-23/5, 2 ♂♂; 27/5, 1 ♂ (all B). *Denticollis linearis* (L.), 21/5-14/6, 6 ♂♂ (all B). *Dalopius marginatus* (L.), 14/6, 1 ♂, 25-27/6, 1 ♀ (both B).

TRIXAGIDAE

Trixagus obtusus Curt., single specimens 30/4-3/5 (A) & 8/6 (B); six specimens 25-27/6 (A).

LAMPYRIDAE

Lampyris noctiluca (L.), 25-27/5, 1 ♂ (B).

CANTHARIDAE

Cantharis nigricans (Muell.), 21-23/5, 1 ♂ (B); 9/6, 1 ♂ (A). *C. livida* L., 21/5-23/6, 8 ♂♂ (6 A, 2 B); single specimens except 3 on 15/6. *C. rufa* L., 10/6, 1 ♂ (A). *C. fulvicollis* F., 25-27/6, 2 ♂♂ (A). *C. cryptica* Ashe, 24 & 25-27/6, single ♂♂ (both A). *C. decipiens* Baudi, single ♂♂ 18/5 & 7/6 (B) and 25-27/6 (A). *Rhagonycha lutea* (Muell.), 25-27/6, 1 ♂ (A). *R. fulva* Scop., 23-30/6, all males, 33 (A) 26 (B). *R. lignosa* (Muell.), 21/5-22/6, 191 ♂♂ (all B). *Malthinus flaveolus* (Pk.), 9/6-1/7, 227 ♂♂, 3 ♀♀ (25-27/6) (all B). *M. fasciatus* (Ol.), 21/6, 1 ♂ (B). *Malthodes marginatus* (Lat.), 5/5-7/6, 79 ♂♂ (B), 2 ♂♂ (18 & 24/5) (A). *M. guttifer* Kies., 21/6-1/7, 49 ♂♂ (B); 1 ♂ (24/6) (A). *M. minimus* (L.), 18/6-1/7, 12 ♂♂ (A); 9 ♂♂, 3 ♀♀ (B).

ANOBIIDAE

Dryophilus pusillus (Gyll.), 8/6, 1 ♂ (B).

MELYRIDAE

Dasytes aerosus Kies., 17/5-27/6, 3 ♂♂, 4 ♀♀, all single specimens (all B).

NITIDULIDAE

Meligethes aeneus (F.), 25-27/6, 1 ♀ (A). *M. nigrescens* Steph., 5/5, 1 ♂ (B). *Epuraea distincta* (Grim.), 6/5, 1 ♀ (B). *E. melanocephala* (Marsh.), 20/4, 1 ♀ (B); 7-9/5, 1 ♂ (A).

PHALACRIDAE

Stilbus testaceus (Pz.), 14/1, 1 ♂ (A); 28/6, 2 ♀♀ (A & B); 12/8, 1 ♂, 1 ♀ (A).

CRYPTOPHAGIDAE

Antherophagus nigricornis (F.), 30/6, 1 ♀ (B). *Atomaria apicalis* Er., 25-27/6, 1 ♂ (A). *A. linearis* Steph., 10/5-22/6, 5 single ♀♀ (all A).

COCCINELLIDAE

Adalia bipunctata (L.), 18/3, 1 ♂; 6/4, 1 ♀ (both A). *A. decempunctata* (L.), 23/6, 1 ♂; 25-27/6, 1 ♀ (both A). *Coccinella septempunctata* L., 11-13/6, 1 ♀ (A). *C. undecimpunctata* (L.), 13-15/2 & 5/5, single ♀♀ (both A). *Calvia quattuordecimguttata* (L.), 9/6, 1 ♂ (B). *Exochomus quadripustulatus* (L.), 30/6, 1 larva (B).

LATHRIDIIDAE

Enicmus histrio Joy, 7-9/5, 1 ♀ (B).

CISIDAE

Cis bilamellatus Fowl., 7-9/5, 1 ♀; 21-23/5; 4/6, 2 ♀♀ (all B). *Rhopalondontus fronticornis* Pz., 12/8, 1 ♂, 1 ♀ (A).

MYCETOPHAGIDAE

Mycetophagus atomarius F., 7-9/5, 1 ♀ (A). *Typhaea stercorea* (L.), 25-27/6, 1 ♀ (A).

LAGRIIDAE

Lagria hirta (L.), 24/6-1/7, all ♂♂, 240 (B), 3 (A).

MELANDRYIDAE

Orchesia minor Walk., 7-9/5, 1 ♂ (B). *Conopalpus testaceus* (Ol.), 25-27/6, 1 ♂ (A).

SCRAPTIIDAE

Anaspis maculata Geoff. in Fourc., 26/5, 1 ♂ (B).

ANTHICIDAE

Anthicus floralis (L.), 25-27/6, 1 ♂ (A).

BRUCHIDAE

Bruchus affinis Froeh., 12/8, 1 ♀ (A).

CHRYSOMELIDAE

Longitarsus luridus (Scop.), 5/1-31/3, 5 ♀♀ (all A). *L. suturellus* (Duft.), 12/8, 1 ♂ (A). *Psylliodes chrysocephala* L., 5/1-31/3, 5 ♂♂, 4 ♀♀ (B), 2 ♀♀ (A).

CURCULIONIDAE

Sitona lineatus (L.), 2-4/4, 1 ♂ (A); 8/4, 1 ♂ (A); 11/4, 1 ♀ (B). *S. suturalis* Steph., 26/2, 1 ♂ (A). *Dorytomus dejeani* Faust., 25-27/6, 1 ♀ (B). *Rhynchaenus quercus* (L.), 25-27/6 & 29/6, two single ♀♀ (both B).

Acknowledgments

It is a pleasure to thank J. N. Greatorex-Davies, without whose diligence in sorting the scale covered specimens from the non-lepidopterous debris in the light traps, this work would not have been possible.

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THE SPANISH FLY OR BLISTER BEETLE: LYTTA VESICATORIA L. (COL.: MELOIDAE). — Owing to its rarity and erratic appearance, many experienced coleopterists have never seen this fine brilliant green beetle, and it would be interesting to know the last time it was noticed in Britain. I once took the species more than 40 years ago and have never observed it on any other occasion. I failed to publish the record at the time, and as it may be of interest, do so now very belatedly. It was in the summer of 1935 or 1936 that I saw some 20-30 of these beetles. They were flying about in the warm sun and settling on the leaves of an ash growing in my garden at Broad Oak, near Canterbury. The insect used to be noted for its aphrodisian properties and it is from it that oil of cantharides is extracted. There is a good coloured illustration of the beetle in Hofmann, *The Young Beetle-Collector's Handbook* (1908), plate 12, fig. 29. — J. M. CHALMERS-HUNT.

Hymenia recurvalis (Fab.) and other Lepidoptera at Swanage, October 1976

By P. M. Stirling*

Swanage, Dorset, has provided many interesting lepidoptera in the autumn during previous years, and accordingly on the 8th October, 1976, with my wife and Jim Porter, we visited the well-known Durlston Head locality.

As this area is now part of the local National Park, we obtained permission from the warden to use light traps and placed these overlooking the steep cliffs. We also set up a Heath trap beneath some Holm Oaks by the car park.

The early part of the evening was fairly mild and produced a few of the more general autumn moths such as *Rhizedra lutosa* (Hübn.), *Omphaloscelis lunosa* (Haw.), *Allophyes oxyacanthae* (Linn.), *Noctua pronuba* (Linn.), *N. comes* (Hübn.) and *Agrochola lychnidis* (D. & S.), whilst the more interesting species were represented by *Leucochlaena oditis* (Hübn.), *Aporophyla australis* (Bois.), *N. nigra* (Haw.), *Mythimna l-album* (Linn.) and *Dasypolia templi* (Thunb.). We also noted a single specimen of *Lithophane leautieri* (Bois.). A fair amount of the ivy was in bloom and from this we took three *L. socia* (Hufn.), although surprisingly we were not able to record *Xylena vetusta* (Hübn.) from this blossom; a species which in my experience can readily be found at this locality during early October.

Quite late in the evening Jim Porter examined his Heath trap, and from the few moths it contained removed a rather striking brown and white marked pyrale. This he willingly gave to me not having any interest in the microlepidoptera himself. Another pyrale recorded at light and well known for its migratory habits was *Nomophila noctuella* (D. & S.). Of the larger migrant species we noted *Peridroma saucia* (Hübn.), *Agrotis ipsilon* (Hufn.) and *Autographa gamma* (Linn.).

It soon proved difficult to determine the brown and white pyrale, and it was eventually taken to the British Museum (N.H.) where it was recognised as *Hymenia recurvalis* (Fab.). This species is a rare migrant not only to the British Isles but to most of Europe, and in its more tropical haunts is a serious pest of root and cereal crops where it is known as the Beet Webworm, and can apparently complete its entire life cycle in four weeks. It has a more usual distribution in the Palaearctic region from Syria to Japan and the Oriental, Australasian and Ethiopian regions; it is also recorded from North, Central and South America and the West Indies. Recent studies, however, indicate that similar specimens are not all applicable to just the one species and that *recurvalis* is not such a cosmopolitan species as has previously been supposed.

Robin Mere was the first person to take the moth in England when he found a specimen in his garden light trap

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on 5.ix.1951, and another was recorded later that year at Swanage. Since then several more examples have been noted from the south of England.

This specimen is in the British Museum (N.H.).

My thanks are due to Mr. Michael Shaffer of the Natural History Museum for determination of the species, and Jim Porter for parting with the moth in the first place.

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Current Literature

Rhopalocera Directory, by **John R. Beattie.** Insecta Directory volume 1, [ii] + xiv + 365 pp., 1976. Published by J.B. Indexes, Berkeley, California. Paper covers, computer produced offset reproduction. $30.00 ($40.00 to libraries).

For anyone who has ever thumbed through endless volumes of the *Zoological Record* just in case it did ever pick up a second reference to *Sinarista,* or any other equally obscure butterfly name, the *Rhopalocera Directory* is a god-send. The *Directory* is based on the *Archiv für Naturgeschichte* 1834-7, the *Bericht über die wissenschaftlichen Leistungen im Gebiete der Entomologie* 1838-63, and the Systematic Index of the *Zoological Record* 1864-1971. The first 64 pages indicate the location of all generic name citations in the butterfly sections of these works, and pages 65-292 do the same for all trivial name citations. Pages 293-300 lists the allocation of generic names to family (as treated at various times in the *Bericht* and *Zoo. Rec.*), and pages 301-365 comprise a clever "inverse sort" of names, intended to help trace misspellings. The efficient thinking behind the project, and how to use the *Directory,* are briefly but clearly outlined in the 14-page introductory section.

Even though it is a "tertiary" source (as its author is at pains to point out), access to the *Directory* is a must for any butterfly specialist. It makes use of the *Zoological Record,* especially for rarely quoted species of genera, immeasurably quicker and more reliable—though I doubt it would ever become "fun" as Beattie suggests!

This is an extraordinary useful work, sensibly produced, and in general difficult to praise too highly. One of my few criticisms is that the opportunity has been lost to fully index W. F. Kirby's pioneering *Synonymic Catalogue of Diurnal Lepidoptera* (1871 and 1877) at the same time—this would have given some coverage to practically all butterfly names back to 1758. But the *Rhopalocera Directory* will rightly take its place alongside "Kirby", "Seitz", "Lep. Cat.", "Hemming", etc., as one of the first reference sources for any serious systematic treatment of butterflies. Entomologists in general should look forward to the publication of subsequent volumes covering other groups of the Insecta. — R. I. VANE-WRIGHT.

Further Notes on *Erebia* in the French Massif Central

By Geoffrey N. Burton, B.A.*

I sent off 60p for a specimen copy of *The Entomologist's Record* in November 1976 and received the October edition. I am sure that I would have sent a subscription anyway, but this copy ensured a swift response on my part, as it contained the first part of M. J. Perceval's article on *Erebia* in the Massif Central. This is an area in which I have spent most of my holidays in the last six years and which has really been responsible for my interest in Lepidoptera, which grew out of my efforts to photograph the butterflies I saw and then identify them. My active collecting is now four years old and the large majority of my material comes from this area. In view of the relative paucity of records, a full report of my observations may well be of interest, but at present it is my intention only to add my own comments on *Erebia* to those of M. J. Perceval.

It should be made clear that the area of which I have experience is, by and large, restricted to Cantal, especially around Murat, and including Le Lioran and Puy Mary. I have not visited the Mont Dore area and have not collected around the Gorge du Tarn.

Erebia ligea Linn.

This species has been present on Plomb du Cantal—East and West sides—and in quite large numbers in the forest above Chambeuil (between Murat and Laveissière) from 1,000 to 1,385 m. Specimens have been fresh in the first week in August. Average size 25.5 mm. I have encountered none elsewhere, especially not at Puy Mary.

Erebia euryale Esp.

Found in fresh condition in the first week in August at Puy Mary and above Chambeuil. The upperside markings are fairly consistent, with a well-defined band on the front wings and well-separated but bright spots on the hindwings. The underside is typical of ssp. *'antevortes'*, with almost complete absence of silver bands. Hindwing spots are often reduced. Average size 22 mm.

Erebia manto D. & S.

My series taken at Puy Mary and above Chambeuil in 1975 and 1976 (July-August), indicate an even more variable situation than that described by M. J. Perceval. The male uppersides are almost all entirely unmarked, as would be expected for ssp. *'constans'*, but I have several specimens with unmistakable red apical flush, similar to ssp. *'pyrrhula'*, although the hindwing markings are still completely absent. The undersides are even more variable and range from completely unmarked—which are really quite rare—to those with a quite extensive forewing flush and hindwing spots (blind). The normal apical spots are not clearly defined and merge

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with the flush. I have only one specimen with eyed apical spots.

The females all have upf. red markings (blind), and the unf. have a clearly defined post-discal band with a pale area extending basad. The unh. have a reddish flush and clearly defined yellow spots in S5 and S7 and sometimes, smaller yellow marks in S4, S6 and S8 (or some of these—S8 is commonest). The markings are not as yellow as in *'manto manto'*, nor as extensive, and there is no trace of the basal marks.

The males ranged between 19.0 mm. and 21.4 mm. and average 20.1 mm. The females average 21.1 mm. This is at variance with Mr. Perceval's findings and must surely support the view that some doubt remains about the status of f. *'gnathene'*.

Erebia epiphron Knoch

While I have taken this at Puy Mary, Plomb du Cantal and Chambeuil, I have not found it common in August and can add nothing to Mr. Perceval's detailed notes.

Erebia sudetica Stg.

I have found this common at Puy Mary and on the East side of Plomb du Cantal, but it does not seem to be present slightly further East at Chambeuil, nor have I taken it at its type location of Le Lioran, and the development of a ski resort here may well have destroyed it. Specimens taken at both locations in July-August 1975 were very fresh and at Puy Mary, it was the commonest butterfly, present in vast numbers, flying together with a much smaller number of *Erebia epiphron,* but in 1976 it was absent from Plomb du Cantal and scarce and worn at Puy Mary, due no doubt to the effects of the hot summer.

From my series, the upf. band usually extends from S1b-S6 and often contains no black points at all. Points are most common in S4 and S5 and are extremely rare in S6. The uph. usually have four regular red spots, with or without points. The average size of the males is 16.2 mm. and of the females 17.4 mm.

I would like to suggest, with some hesitation, that the specific status of *'lioranus'* remains open to doubt. One of the features which distinguish *'sudetica'* from *'melampus'*, the point in upf. S6, is extremely rare in my series of *'lioranus'*, although the regularity of the uph. series of spots is constant. Warren (1961) states that in *'sudetica'*, " all the spines (on the valves) are distinctly separated", whereas in *'melampus'*, " . . . the fine spines are mostly touching", and that, "all the spines in *'sudetica'* of whatever size, are of heavier build". In *lioranus'*, there appears to be quite a lot of variation and my slide preparations do not clearly or consistently exhibit these features. Higgins (1975) differentiates *'melampus'* and *'sudetica'* on the grounds of tooth size and, " . . . valve (of *'sudetica'*) even more slender with gentle curve". Again, my slides are not consistent, but seem to exhibit more often the shape of *'melampus'*.

I draw no conclusions and make no claims at present, as I wish to pursue the question much further. I hope to follow up these points at a later date, but in the meantime, I would be grateful for any comments.

Erebia aethiops Esp.

I have taken this species above Chambeuil in both 1975 and 1976. It was present in reasonable, but not large, numbers, in fresh condition from 1,100-1,300 m. This extends its range further South from Mr. Perceval's specimens taken near Condat and seems to indicate that, though local, it is a quite well-established species.

I cannot comment on its subspecific status, but my series agrees with Mr. Perceval's. The undersides are of both the silver and gold types, and the average male size is 23.3 mm. and female 23.8 mm.

Erebia meolans de Prun.

This butterfly has been present fairly commonly at Puy Mary and above Chambeuil in 1975 and 1976, though females have been quite rare.

The upf. bands are very variable, usually extending from S1b or S2 to S6, with white-pupilled ocelli in S4 and S5, and often a smaller one in S2. No specimens have additional ocelli and several have a much reduced one in S2; in some it is absent. Again, in some the post-discal band is much reduced. The uph. are much more faintly marked and the spots (with or without ocelli) are usually widely separated by brown.

All the above features seem to me to be well within the normal range of variation. The undersides, however, seem much more unusual. In none is the unf. very dark, and they have an overall reddish (russet) tinge, darkening towards the base. The post-discal band and ocelli largely match the upf. markings, although they are perhaps slightly wider. The unh. are even paler brown and have a distinct silvery post-discal band extending from S1b to S8. Sub-marginally and discally they are again darker, while the base is sometimes again paler. Ocelli are usually completely absent, although in one or two a minute point can be detected in S2.

The sizes range from 21.1 mm. to 22.8 mm. and the average is 22.0 mm.

This description may appear to be inconsistent with the female of ssp. *'meolans',* but the overall ground colour is much darker, and they are males. The overall patterning of the unh. is very close to that of *E. aethiops,* although there is no similarity of ground colour.

I have prepared genitalia slides, as I thought perhaps I was missing something obvious and making a simple error in identification, but they are clearly *E. meolans,* although the valves exhibit some differences from the type shown by L. G. Higgins (*op. cit.*).

What all this may mean, I do not know and at present I do not have sufficient comparative information to allow

me to draw conclusions, but is it possible that we have here a ssp. intermediate between *'meolans'* and *'stygne'*?

Postscript

It will be seen that, in the preceding notes, I have only referred to the years 1975 and 1976. My observations and records extend further back than this, but I have not used them as I do not consider them sufficiently accurate. Similarly, I have only referred to three or four locations, because my information from these is quite full, but is much reduced from other sites.

The summer of 1976 had, apparently, the same effects in France as in England. Everything was much earlier and *Erebia,* especially, were much scarcer than usual in August, presumably because they were mostly over.

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AGROTIS IPSILON HUFNAGEL IN MARCH. — On the night of the 26th March, 1977, I recorded here in my light trap a female example of the Dark Swordgrass, which I presumed was an immigrant. — A. E. C. ADAMS, Perrins Farm, Woods Green, Wadhurst, East Sussex, TN5 6QN.

LONGITARSUS REICHEI ALLARD (COL. CHRYSOMELIDAE) IN WEST SUSSEX ON YET ANOTHER PROBABLE FOODPLANT. — In a note on this little-known *Longitarsus* (1967, *Ent. mon. Mag.*, **103**: 154-5), I drew attention to the curious fact that all my four captures of it had been from different host-plants (one Composite, three Labiates) — though one of the latter was not certainly traced. I can now add a further Labiate to the list of its apparent foodplants, having taken a single female by sweeping along a marsh dike at Amberley, West Sussex (13.viii.70), where the marsh woundwort, *Stachys palustris* L., grew profusely. As no other plant at all likely to be a host of *L. reichei* appeared to be present, the probability of the beetle having come off the *Stachys* is very high. I had already taken the species in East Sussex (*l.c.*: 154), but the present record should be a new one for the western vice-county. — A. A. ALLEN, 49 Montcalm Road, Charlton, London, SE7 8QG.

Observations on Butterflies at Hilton, Derbyshire, 1970-1976, and a day in Devon

By A. Wm. Speed*

During the six years I have lived at Hilton in South West Derbyshire, 10 miles to the west of Derby, I have only encountered 14 species of butterfly several of which are locally scarce. Consequently the majority of my collecting has been of moths. Whilst reading the various entomological journals on winter evenings armed only with a glass of sherry, I have been transported to many remote and notable haunts in the company of some eminent field lepidopterists. It has occurred to me that on many such journeys the hunting of rarities appears to be of paramount importance. But what is rarity?

One morning during June 1976, I was offered an opportunity to find out. The telephone rang. It was a long-standing friend Bryan Thomas of Crewe whom I had introduced to the pursuit of butterflies and moths some three years earlier. He informed me that he would be spending a holiday during early July at Budleigh Salterton in Devon, and said that if while he was there I would care to join him for a day he would meet me at Exeter St. Davids Railway Station. The spot he had in mind to visit was a forest some few miles to the north of Exeter. July 6th was decided upon. The only concern was the weather since I would need to set off in the early morning and conditions could deteriorate, but in this summer of summers the fear was to be unfounded.

The period between making the arrangement and the day of the trip was filled with thoughts of fritillaries and hairstreaks, gatekeepers and ringlets, rarities indeed to a Derbyshire lad.

The day dawned cool and clear and the excitement mounted during the car ride to the station. The train departed at 7.04 right on time. A coffee from the buffet and settle back to drink in both the coffee and the scenery. Even at this hour Meadow browns (*Maniola jurtina* L.) and unidentified Pierids were up and about, but then this was a day to make the most of. A change of trains at Birmingham and on we sped into the South West.

As the journey proceeded I became aware of an eerie difference in the ever changing scene through the carriage window. It was some time before the awful truth dawned. It was the elms. The elms standing in hedgerows and small groups. The elms stark against the horizon. Dead, lifeless. I thought of the communities which must have perished with them. Whole cities, teeming masses all dead. I then consoled myself by thoughts of the abundant supply of wood which was available for the woodboring insects, but it was small consolation set against the loss of these majestic trees. I had, of course, read about the spread of this awful elm disease,

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but I was ill prepared for the scene now presented since the disease had not yet reached Derbyshire.

The train ran along with my thoughts and the scene changed. The motorway builders were at work extending the M.5 far into Devon. Thoughts of future journeys by road, but no, they would not afford the same time for relaxation and day-dreaming and such thoughts were quickly dispelled. The train arrived in Exeter at 11.27, the timetable had said it would.

Bryan was there looking well tanned from his holiday which had thus far been spent in the pursuit of Grey mullet (*Mugil chelo* Cuvier) along the river estuaries of South Devon and butterflies. I understand that the prerequisites of mullet fishing include tide tables, therefore, with an accurate watch, a car and a map of the area, the pleasure can be extended by chasing the tides around the coast since mullet come in from the sea on the rising tides.

It was immediately obvious that Bryan was bubbling with enthusiasm about something and after a brief exchange of pleasantries I was whisked off to a location which I later discovered was Stoke Woods to be given an introduction to my first hairstreak (*Strymonidia w-album* L.) the white letter. We had only just entered the wood when we came upon a patch of bramble around which was a myriad of insects which included a good number of white-letter hairstreaks along with a Comma (*Polygonia c-album* L.) my first encounter with the Comma since seeing one in the middle of the English Channel on a Dover-Boulogne ferry in 1969.

I later learned that Bryan having time to spare awaiting my arrival had "discovered" this particular spot. I was entranced, two new species. I was persuaded to leave and we motored further northwards to a spot which Bryan had visited during the previous year. As we approached the spot a butterfly was seen gliding very gracefully along in front of the car. It was a flight I had not witnessed before, but was obviously that of a Nymphalid. But which? The flight continued apace, long glides punctuated by an occasional wing beat, a most serene tranquil motion. The insect was identified as *camilla* and I was immediately reminded that the closely related European species *Neptis sappho* Pallas and *Neptis rivularis* Scopoli are called Gliders. Most appropriate, though White Admiral has more charm at least to me.

We stopped the car just off the road in the entrance to a clearing. The sight I beheld was astonishing, and it was some minutes before the whole spectacle registered. It was now midday and the sun was very high and hot. The air was still and there was a quiet transcending beauty. The hedgerow to my right was overgrown with layer on layer of bramble in full bloom. Bacchus himself would surely have approved the banquet. Numerous Silver-washed fritillaries (*Argynnis*

paphia L.) were in attendance, a feast both for them and for me. Another guest was the Gatekeeper (*Pyronia tithonus* L.) also in numbers, which appeared to wink each time they settled as the underside eyespots were momentarily visible before falling to hide under the hindwings.

The central area of the clearing was very dry and parched as a result of the drought we had experienced, but rising from the baked earth were many thistles and these too were the subject of much attention, this time by predominantly Marbled whites (*Melanargia galathea* L.) with often as many as four vying for the nectar of one bloom. Just then a White Admiral appeared over the hedge to the right followed quickly by a second. The effect of this speciousness was numbing. I feared to speak lest I disturb the tranquility which pervaded. Derbyshire is never like this.

It was decided to take lunch before any excursion into the area of woodland surrounding the clearing was undertaken, so we made ourselves comfortable on a handy log and dined on cold chicken salad and dry cider. A gourmet's delight! Well, the butterflies appeared to be suitably impressed since several endeavoured to share our meal, unless of course it was mere curiosity as to the nature of the two intruders into their world.

Bryan suggested he take me along a path leading from the clearing to a spot where had seen White Admirals on his previous visit. So off we set. It was difficult to follow the flight of a single insect as others passed in and out of vision so swiftly causing a constant distraction. Photography was also difficult not because of the lack of a subject willing to pose, but because others wanted to join in for family portraits. It was during this time that I met yet another newcomer the Ringlet (*Aphantopus hyperanthus* L.) again present in good numbers. The spot where the White Admirals were found was an idyllic place, almost magical. A deep cutting flanked by the ubiquitous brambles. Honeysuckle appeared to wind gently around everything. The trees on the far side of the gulley cast a welcoming shade and we took shelter from the fierce heat for a while and watched the grace of the *camillas* gliding on so effortlessly to and fro, in and out of the shade, never still. The contrast with the Skippers (*Ochlodes venata* Bremer and Grey) darting rapidly about in human fashion, with what seemed little purpose, was marked. If only we could conduct our affairs with the grace and pace of the Nymphalids.

With such peace and quiet the time was obviously racing by and in order to send me on my return journey fortified, Bryan returned to the car to prepare a snack, and I was left in solitude. On returning to the car two more species came to notice, singletons of both the Brimstone (*Gonepteryx rhamni* L.) and the Dark green fritillary (*Mesoacidalia aglaia* L.). Tea was taken and we departed feeling a strange mixture of pleasure and sadness.

On the train back to Derby I had plenty of time to pause and reflect. An exceptionally enjoyable day? Certainly. Rarities? Well, compared with my local list for Hilton, yes. And memories? Memories to last a lifetime. Days such as these are rare indeed.

Butterflies observed at Hilton, Derbyshire, 1970-1976

HESPERIDAE. *Ochlodes venata* (B. & G.). Several each year 1970-76, although appears to be becoming scarce throughout Derbyshire.

PIERIDAE. *Gonepteryx rhamni* (L.). 9.viii.75 (1), 20.iv.76 (1), 31.v.76 (1); becoming more widespread in Derbyshire. *Pieris brassicae* (L.). Common. *P. rapae* (L.). Very common. *P. napi* (L.). Very common. *Anthocharis cardamines* (L.). Common.

LYCAENIDAE. *Lycaena phlaeas* (L.). Common. *Polyommatus icarus* (Rottemburg). A strong colony at Hilton nature reserve.

NYMPHALIDAE. *Vanessa atalanta* (L.). Scarce most years; not recorded in 1974. *V. cardui* (L.). Rare. 15.viii.76 (2). *Aglais urticae* (L.). Very common. *Inachis io* (L.). Several seen most years.

SATYRIDAE. *Lasiommata megera* (L.). Common. *Maniola jurtina* (L.). Abundant.

LOZOPERA BEATRICELLA WALSINGHAM IN DERBYSHIRE AND YORKSHIRE IN 1976. — I was very interested in the letter concerning *Lozepera beatricella* Wals., in Vol. 89, No. 3 of *The Entomologist's Record,* for this species also turned up during 1976, for the first time so far as I am aware, in the counties of Derybshire and Yorkshire. A specimen was taken in a Rothamsted light-trap at Matlock, Derbyshire, on the 27th June, and the Yorkshire specimen was taken at a light-trap operated by Mr. H. E. Beaumont at West Melton, near Rotherham. Both of these specimens have been examined by Dr. J. D. Bradley who has confirmed their identity. It seems strange that such an attractive little moth should have escaped the attention of local entomologists in previous years and I suspect that this species may be a newcomer to the region.

Also taken in the Matlock trap on the 25th August, was a single specimen of *Agriphila latistria latistria* Haw. This species was discovered for the first time in Derbyshire during 1975 at Shipley Park, near Heanor, where it is reasonably well established to judge from the numbers attracted to light in both 1975 and 1976.

A number of colonies of *Stenoptilia saxifragae* Fletcher are now known to occur in Derbyshire. Two sites exist in gardens at Matlock, another in a garden at Starkholmes, near Matlock, and a colony in my own garden which was established in 1972 by introducing specimens from the first local colony discovered at Sheffield in 1971. — F. HARRISON, 24 Church Street, Holloway, nr. Matlock, Derbyshire.

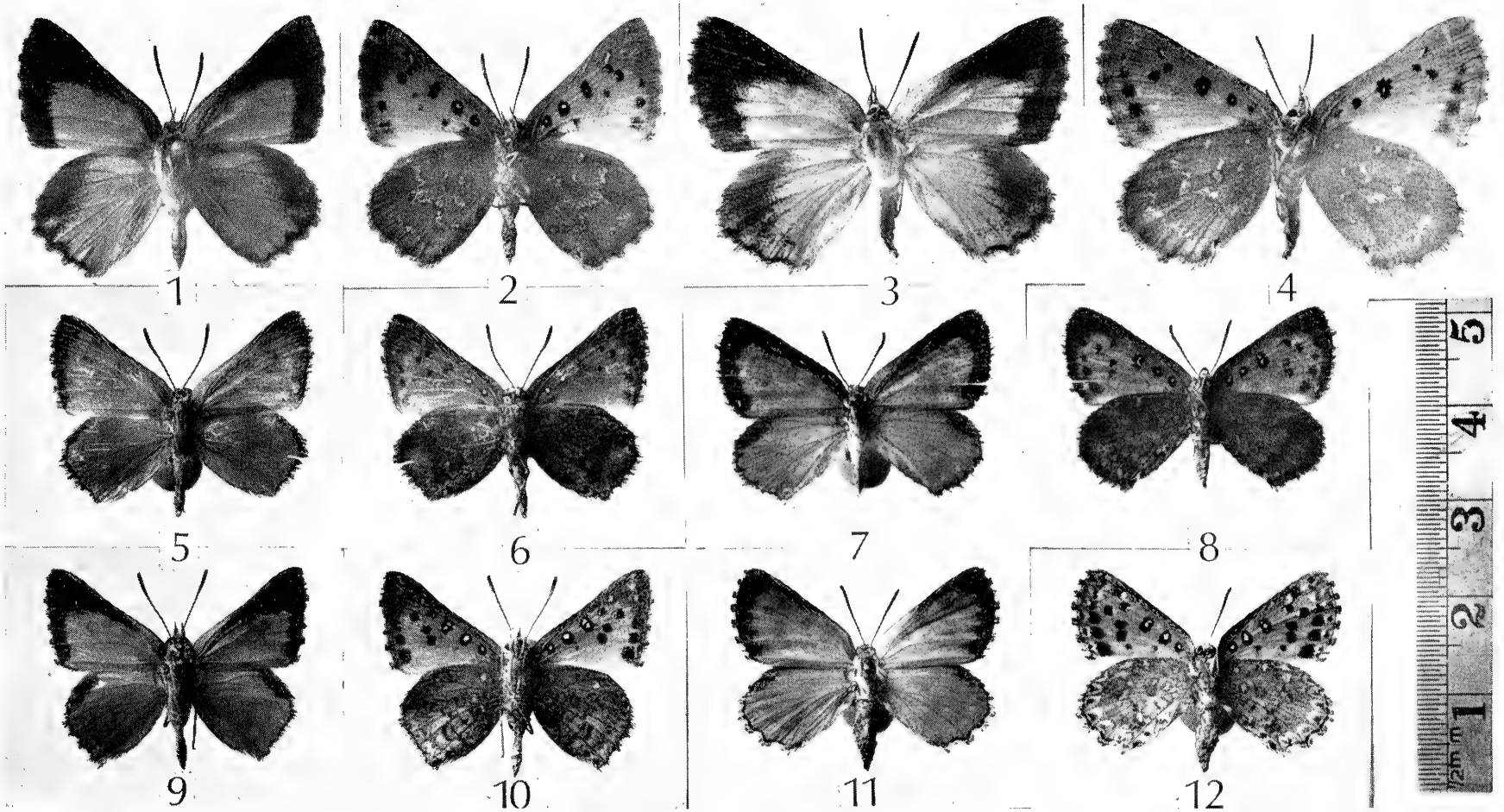

PLATE XVII

Figs. 1-12. — Some new *Aloeides*: (1) ♂ upperside, (2) ♂ underside, (3) ♀ upperside, (4) ♀ underside of *A. kaplani* sp. n.; (5-8) the same of *A. bamptoni* sp. n.; (9-12) the same of *A. nollothi* sp. n.

Further Notes on Species of the Genus *Aloeides* (Lepidoptera: Lycaenidae) No. 2

By G. E. Tite[1] and C. G. C. Dickson, M.Sc.[2]

A continuation of the paper (Tite and Dickson, 1976) has been rendered necessary by the good field work of Mr. I. Bampton and Dr. J. Kaplan. Full acknowledgments are made to them, and to Mr. W. H. Henning, his sons Stephen and Graham, and to the late K. M. Pennington. These gentlemen have not only lent specimens from their collections for study, but have most generously allowed the authors to retain the types and such paratypes as they deemed desirable, to be presented to the Hope Department of Entomology, University Museum, Oxford.

Aloeides **bamptoni** sp. n.

Pl. XVII, Figs. 5-8

Zeritis simplex Trimen, 1893: 136, partim.

As pointed out (Tite and Dickson, 1968: 377-378), Trimen's four syntypes of *Z. simplex* did show considerable differences, but at that time, the lack of other specimens did preclude specific separation; although, it was then deemed necessary to fix the larger narrow bordered insect from Damaraland (Tite and Dickson, 1968, pl. 3, Pls. 45 and 46) as the lectotype. Trimen's specimen labelled Port Nolloth is now seen to be a distinct species, exhibiting a general resemblance to *Z. simplex,* but being of smaller size, and the underside of the hindwing being of a duller more sandy hue. In the following description, comparisons are with that species unless otherwise stated. Mr. Bampton knows the area well, and has taken both this and the next species in numbers; he says that he has never found *bamptoni* at Port Nolloth, and that he considers the name to have been loosely applied to cover the general area, both in this case and in that of the similarly labelled specimens collected by the late Mr. Pennington. The precise locality was probably some miles inland from Port Nolloth and at a higher altitude. In a country where place-names are few and far between, it is inevitable that such inaccuracies will arise, unless exact distances from the nearest named point are included on labels, as Mr. Bampton has done with the material under consideration. The species is named with pleasure in recognition of the fine field work and helpful criticism of Mr. Ivan Bampton.

Length of forewing: ♂ 13-15 mm.; ♀ 14-16 mm.

Upperside ♂. The forewing ground colour is deeper tawny-orange, with only faint indication of the underside spotting showing through. Its blackish margins are wider and darker, being approximately 1 mm. in width at vein 3 and widening to over 3 mm. at the apex. The apical patch is narrow and tapers to about half the length of the costa,

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[2] Blencathra, Cambridge Avenue, St. Michael's Estate, Cape Town, 8001.

the lower half of which is covered with pale brownish scales. The hindwing is of the same colour as the forewing. Its dark margin is slightly wider than that of *A. simplex* but is narrower than that of the forewing, being in most examples slightly widened at the apex; in only a few individuals, is this widening definite enough to indicate an apical patch. The fringes are chequered black and greyish-white.

Underside ♂. The forewing is deep orange of a rather brickish tint; its margins are dingy brown, and rather wider. There is a definite black wedge shaped mark below the base of the median vein. All the black spots are small even in proportion to the size of the insect; those in the cell consist of a point of white ringed with black, the discoidal spot being similar but bipupilled. The median series are usually tiny, and in many individuals exhibit a tendency to obsolescence; there are no spots in area 1. Similarly, the submarginal series are small; those in areas 1 to 4 are usually clearly defined, but those in areas 5 to 7 are indistinguishable in the dusky apical area; they are not margined with white as in *simplex.* The marginal dots are present, but very obscure. In colour, the hindwing is dingy fuscous; its pattern of spotting is similar to that of *simplex,* but is so faintly marked as to be scarcely discernible in most examples. The fringes are not obviously chequered.

The female—apart from the usual difference in wing shape—is similar to the male.

Holotype ♂. CAPE PROVINCE: 22 km. NNE of Steinkopf, 29.xi.1974 (*I. Bampton*) (in U.M. Oxford).

Paratypes. CAPE PROVINCE: 22 km. NNE of Steinkopf, 9.xi.1974; (*I. Bampton*) 1 ♀ (Allotype in U.M. Oxford); Port Nolloth (sic), 26.ix.1967 (*K. M. Pennington*) 1 ♂, 1 ♀; Steinkopf, 16.ix.1967 (*K. M. Pennington*) (1 ♂, in U.M. Oxford); 22 km. NNE of Steinkopf, 29.xi.1974 (*I. Bampton*) 2 ♂♂, 1 ♀; same data, 4.xii.1974, 1 ♂, 1 ♀; 25 mls. N. of Steinkopf, 22.x.1974, 1 ♂; Steinkopf, 22.x.1974 (*I. Bampton*) 1♂; Springbok, 21.x.1974 (*I. Bampton*) 2 ♂♂, 1 ♀; 27 km. N. of Springbok, 30.xi.1974 (*I. Bampton*) 4 ♀♀; 17 mls. N. of Springbok, 21.x.1974 (*I. Bampton*) 1 ♂; 40 km. N. of Hondeklip Bay, 19.xii.1974 (*I. Bampton*) 2 ♂♂; near Kamaggas, 19.xii.1974 (*I. Bampton*) 1 ♀. (All in Henning Coll.)

Aloeides **nollothi** sp. n.

Pl. XVII, figs. 9-12

Very similar to the preceding species, this insect differs mainly in possessing a more acute apex to the forewing in the male, and a more definitely defined pattern on the more greyish underside of the hindwing in both sexes. Comparisons are made with *A. bamptoni* in the following description. It is a coastal insect, occurring in low lying sandy areas, whereas *bamptoni* is found in more inland rocky places. The species is named after Captain M. S. Nolloth of the Royal Navy, who surveyed the west coast of southern Africa in H.M.S. Frolic in the year 1853, and from whom Port Nolloth takes its name.

Length of forewing: ♂ 11-15 mm., ♀ 14-16.5 mm.

Upperside ♂. All wings are brighter tawny-orange, exhibiting a strong tendency for the underside pattern to show through. On the forewing, the somewhat wider distal band is more noticeably scalloped along its inner edge; this band grows wider as it approaches the apex where it forms a triangular apical patch, which extends to over half the length of the costa. The hindwing only differs in the greater development of the apical patch. On all wings, the fringes are more obviously chequered black and white.

Underside ♂. On the forewing the colour is deep tawny-orange. All the spots are larger and more prominent; those in the cell and the bipupilled discoidal spot are more heavily ringed with black; those of the median series are well defined, and in some individuals are accompanied by two spots in area 1 which are set well in towards the base; there is often an additional spot set basad again just below the origin of vein 2. The spots of the marginal series are larger than those of *bamptoni,* those in areas 5-7 being more obvious on the lighter ground. The hindwing is grey-fuscous; the dark ringed pale grey-brown spots are more obvious, those of the marginal series often exhibiting a bright yellowish tinge. The marginal dots are barely indicated. The fringes on all wings are chequered fuscous and white.

Apart from the normal difference in wing-shape, the female does not differ from the male.

Holotype ♂. CAPE PROVINCE: McDougall's Bay (near Port Nolloth) 1.xii.1974 (*I. Bampton*) (in U.M. Oxford).

Paratypes. CAPE PROVINCE: McDougall's Bay, 18.xii.1974 (*I. Bampton*) 1 ♀ (in U.M. Oxford); McDougall's Bay, 1-19.xii.1974 (*I. Bampton*) 2 ♂♂, 7 ♀♀; Hondeklip Bay, 6-19.xii1974 (*I. Bampton*) 20 ♂♂, 7 ♀♀; 18 km. E. of Hondeklip Bay, 15.xii.1974 (*I. Bampton*) 5 ♂♂, 6 ♀♀; (all in Henning Coll.). Port Nolloth, 26-28.ix.1975 (*Dr. J. Kaplan*) 1 ♂, 8 ♀♀; Hondeklip Bay, 24.ix.1975 (*Dr. J. Kaplan*) 1 ♂, 8 ♀♀; (in Kaplan Coll.). Port Nolloth, 26.ix.1967 (*K. M. Pennington*) 1 ♂ (in U.M. Oxford).

Aloeides **kaplani** sp. n.

Pl. XVII, figs. 1-4

This species was discovered flying at Vredehoek, on the Swaarweerberg on the farm of Mr. Esterhuyse at Sutherland in the Roggeveld Mountains area at an elevation of 5,100 feet by Dr. J. Kaplan. It is named in recognition of this, and of Dr. Kaplan's many other contributions to the study of South African butterflies. In general appearance and size, it is very similar to *Aloeides pallida grandis* (Tite and Dickson, 1968: 375) in both sexes, and in the description all comparisons are made with that insect.

Length of forewing: ♂ 17-19 mm., ♀ 18.5-22 mm.

Upperside ♂. The general colour is of the same tint of tawny-orange as in *grandis;* the dingy black distal band is approximately 3 mm. in width, extending in uniform width

from the tornus to vein 4, where it merges with the apical patch; its inner edge is straight. On the costa, the apical patch is produced into a black band which extends to the base of the wing, where it is brightened by a light scattering of long yellowish scales. On the hindwing, the apical patch is less quadrangular than that of *grandis,* and is inwardly very diffuse, black scales being scattered for some distance into the tawny-orange portion of the wing, especially on or near the veins. The black discoidal spot usually present in *grandis* is not to be seen in any of the specimens examined.

Underside ♂. The forewing is bright tawny-orange, with a wide yellowish area extending along the hind margin. The costa, apex, and distal margin vary in colour from pale earth-brown to crimson in different individuals; all the spots are small, and those of the median series in areas 1 to 3 tend to obsolescence, or are completely absent; the spot above vein 5 is definitely less far removed towards the base than is the case in *grandis.* The marginal dots are but faintly indicated. The hindwing varies individually from pale earth-brown to dusty crimson; its irregular markings are straw coloured, edged with brown, and are arranged much as in the last named taxon. The marginal dots are not visible.

♀. Like the male, but on the forewing upperside the black distal margin is wider, having a width of approximately 5 mm. at vein 2; its inner edge is scalloped in areas 1, 2 and 3.

Holotype ♂. CAPE PROVINCE: Sutherland, 9.x.1975 (*Dr. J. Kaplan*) (in U.M. Oxford).

Paratypes. CAPE PROVINCE: data as holotype, 2 ♂♂ (in Kaplan Coll.); as holotype, 21.x.1973, 1 ♀ (in Kaplan Coll.) and 1 ♀ (allotype in U.M. Oxford).

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AGRIOPIS MARGINARIA FAB. F. FUSCATA MOSLEY. — On 6th April, 1976 I found a specimen of the melanic f. *fuscata* Mosley of the Dotted Border in my M.V. trap in the garden here. This is the first time I have seen this form in Suffolk, but I found an example in a water butt at R.A.F. Kirkham, Lancashire in 1943. In his note in the *Record* of June 1976, Baron de Worms mentions a record from Surrey and suggests that it would be of interest to hear of other records from other southern counties. — H. E. CHIPPERFIELD, Walberswick, Suffolk.

Collecting Lepidoptera in Britain during 1976

By C. G. M. de Worms, M.A., Ph.D., F.R.E.S.*

Though the opening days of 1976 did not produce such a precocious rush of insects as those of 1975, nevertheless the start of January was once more very mild with daily temperatures in the low 50's for the first three weeks of the month after which a cold snap set in lasting almost to its end by which time all the early geometers were well out, especially *Phigalia pedaria* Fab. and even an occasional *Orthosia cruda* D. & S.

On January 29th I left for Malaysia, only returning just over a month later on February 29th. I apparently missed very little cold weather so that when I got back I found spring almost on the doorstep as the opening of March was quite congenial, bringing out most of the early noctuids about at their normal period. A short-lived cold snap in the second week of the month gave way to very spring-like conditions by the middle period when the sallows were already well in bloom. They were at their height when I travelled to Kent on the 19th, but in spite of fair sunshine little was on the wing either in the Folkestone area or near Rye where I paid a visit to Mr. Michael Tweedie on March 22nd. The final week of March warmed up considerably with the shade temperature rising above 60°F. on the 28th. Its last day spent with Dr. J. Holmes I saw *Archiearis parthenias* L. flying on Horsell Common.

The mild weather continued into the first days of April when the Orthosias were flooding into m.v. light together with a spate of *Xylocampa areola* L. and *Panolis flammea* D. & S. which lasted well into May. The second week of April saw me at Norwich for a conference starting on the 9th. Two days later, on a very sunny occasion, I went to stay with Tony Palmer near Saxthorpe. Several insects were attracted to his door light that night, including *Earophila badiata* D. & S. and *Erannis marginaria* Fab. My next journey took me to Dorset to stay with my relatives near Blandford for the Easter holiday, which proved one of the best in recent years for good weather. Good Friday, April 16th, was very fine and warm and I went over to see Mr. and Mrs. Hatton at Holt, near Wimborne. A few Brimstones were flying in my host's garden the next morning, together with the first *Pieris rapae* L. With the thermometer in the 60's I spent the earlier part of the day beating the very luxuriant growth of sloe blossom on Bulbarrow Down in the hope of dislodging larvae of *Chloroclystis chloërata* Mab., but without success. So far as I am aware, this species has not been recorded west of Salisbury where I first obtained it in 1944. On April 18th, again in very warm conditions, I made my way further westwards to Beer Common in South Devon to stay with Mr. and Mrs. G. Woollatt who had recently moved back there. En route I called on Mr. N. G. Wykes, near Bridport, where I saw in

* Three Oaks, Shores Road, Horsell, Woking, Surrey.

his garden *Pieris napi* L. and *Anthocharis cardamines* L. Both these insects were also on the wing at Beer where there was quite an assortment of visitors to Mr. Woollat's m.v. trap. Besides the commoner Orthosias, there were several *Cerastis rubricosa* D. & S., *X. areola* and *Orthosia gracilis* D. & S. On the 20th I made my way to Surrey via the New Forest which was alive with Brimstones in the bright and warm sunshine.

The next day, April 21st, saw me on the Surrey-Sussex border where the sloe blossom was a remarkable sight. One bank of it yielded several full-fed larvae of *C. chloërata* Mab. which pupated at once. The last ten days of April were somewhat cooler, but most of the early spring butterflies were now well on the wing, though not many were in evidence when I visited Durfold Wood on May 1st. That evening my light-trap attracted on the edge of Chobham Common a female of *Saturnia pavonia* L. and a fresh *Odontosia carmelita* Esp. It was a very different scene when I revisited the Chiddingfold area on May 9th with Dr. J. Holmes. An early heat wave had set in on the 6th and the temperature had soared to 82°F. in the shade. All the rides were alive with insects. We recorded no less than twelve species of butterflies. Possibly the most numerous was *Leptosia sinapis* L. with *A. cardamines* almost equally plentiful. There were also lots of *Pararge egeria* L. with a good showing of *Clossiana euphrosyne* L. Besides the common Whites, other spring butterflies seen included *Celastrina argiolus* L. and *Pyrgus malvae* L. I was again in Dr. Holmes's company when we went to Noar Hill, near Selborne, on the 19th and were delighted to see a good many *Hamearis lucina* L. flitting among the short herbage, but little was to be seen in a nearby wood that afternoon, in spite of the warmth. A further visit to the Durfold Wood area on May 22nd, this time in company with Mr. and Mrs. J. A. Greenwood and Mr. Anthony Valletta from Malta, provided quite a galaxy of lepidopterous life. Our overseas guest was delighted to see so many Wood Whites flying in every ride, together with the two Pearl-bordered Fritillaries in fair quantity as well. *Hemaris fuciformis* L. was also seen as well as a good many *Pyrgus malvae* L. and *Erynnis tages* L. We also found a full-fed larva of *Griposia aprilina* L. in a crevice of oak bark and several larvae of *Orthosia miniosa* D. & S. also on oak. In spite of continued heat little was on the wing the next day in Alice Holt Forest, or later again in the Chiddingfold area. However, another very warm day greeted Dr. Holmes and myself once more at Noar Hill on May 24th. This time the Rev. Anthony Harbottle had joined us and we were treated to a fine display of the little Duke of Burgundy, which was much more plentiful than on our previous visit. Orange-tips were in abundance with plenty of *Polyommatus icarus* Rott. and *C. euphrosyne* L. in most of the clearings in a neighbouring wood.

On the 29th I travelled to the New Forest to spend the spring holiday week-end with Rear-Admiral David Torlesse. Again Alice Holt Forest yielded little of note when I spent

an hour there en route, nor was there much moving in the vicinity of Brockenhurst by day in spite of fine conditions. However, my host's m.v. trap had quite an assortment of visitors on the subsequent couple of nights providing some 40 species, which included *Sphinx ligustri* L., *Laothoë populi* L., *Deilephila elpenor* L., *Stauropus fagi* L., *Pterostoma palpina* Clerck, *Notodonta trepida* Esp., *Pheosia gnoma* Fab., *Drymonia dodonaea* D. & S., *Cycnia mendica* Clerck, *Dasychira pudibunda* L., *Hippocrita jacobaeae* L., also the noctuids *Apatele psi* L., *A. rumicis* L., *Ceramica pisi* L., *Caradrina ambigua* D. & S., *Diarsia rubi* View., *D. mendica* Fab., *Apamea crenata* Hufn., and *Unca tripartita* Hufn. Among the geometers were *Thera obeliscata* Hübn., *Dysstroma truncata* Hufn., *Eupithecia pulchellata* Stephens, *E. exiguata* Hübn., *E. nanata* Hübn., *Gonodontis bidentata* Clerck, *Campaea margaritata* L. and *Pachys betularia* L. I was back in Surrey the last day of May which ended on a very warm note with June following suit for its opening week.

I was away in Provence in the south of France from June 3rd to 11th. On my return the thermometer was well into the 70's, with a rise of 83°F. on the 14th when I was again in the Durfold woods where Wood Whites were still in abundance with a number of *C. selene*. My sojourn in Surrey was short-lived as on June 18th I left on another long distance trip, this time to Orkney. Mr. and Mrs. Ian Lorimer had once more kindly invited me to sample the lepidoptera at a new time of year since my two previous visits had been in August 1969 and the same month in 1971. I reached Kirkwall by air via Aberdeen in the afternoon and we were soon at my hosts' residence at Orphir overlooking Scapa Flow where I had had such good collecting in the previous years. The next morning of the 19th dawned quite sunny when my host and I went over to the neighbourhood of Stromness where we found *Pieris napi* L. flying in plenty with the females very smoky on the upperside. A few Large Whites were also on the wing. That afternoon, walking over heather near Orphir, we flushed a number of *Eupithecia satyrata* Hübn., some approximating to f. *curzoni* Tutt. In the evening we ran an m.v. light on the moors at Hobbister, but the night proved cold. The only interesting visitor was a male *Dyscia fagaria* Thunb., a very northerly outpost for this fine geometer. The following day saw us at the Chair of Lyde, a short pass running west to east over the centre of the mainland. It had proved very fruitful on my earlier visits and this time provided a lot more *P. napi*. It was quite warm on June 21st when we went to the moss at Yesnaby, but it did not provide any new species until just after I had left Orkney when it was alive with *Coenonympha tullia* Mull. On June 22nd we thought we would try the islands to the south which are reached by a large causeway built in the War. We reached Ronaldsay in the late afternoon and penetrated Hoxa Moss with a lot of cotton grass on it. It was not long before my host netted a small Pug skimming fast over the damp herbarge and when we examined it closely in

a box, it was undoubtedly *Eupithecia pygmaeata* Hübn., never before recorded so far north in the British Isles. A wet morning greeted us on June 23rd, but it cleared later when we once more visited the Chair of Lyde, where we saw *Saturnia pavonia* L. flying with many *P. napi.* We found *E. satyrata* flying freely later on Glyn Moss, with a few *Gymnoscelis pumilata* Hübn. in a very bright form. Our last afternoon on the 24th was once more spent at Hoxa marsh where we netted a few more *E. pygmaeata* at their customary time of flight about 5 p.m. There were also a few *Perizoma albulata* D. & S., *Epirrhoë alternata* Mull. and *Xanthorhoë montanata* D. & S.

During the week Ian Lorimer had been running his m.v. trap nightly at his house, Scorradale, with quite interesting results. Among 24 species of the macros and 172 individuals seen on the six nights, the greatest surprise came on June 19th when the first *Spilosoma lubricipeda* L. (White Ermine) seen on Orkney appeared with a few more on subsequent nights. Among the noctuids, by far the commonest was *Hada nana* Hufn. in many forms. There was also quite a visitation of *Apamea crenata* Hufn., together with several *Hadena bicruris* Hufn., *H. cucubali* D. & S., *Diarsia florida* Schmidt, *Eumichtis adusta* Esp., *Caradrina clavipalpis* Scop., also *Lycophotia varia* Vill., *Unca tripartita* Hufn., *Plusia pulchrina* Haworth, *P. chrysitis* L. and *P. gamma* L. By far the most numerous geometer was *Xanthorhoë montanata* L. in a variety of forms, as well as *Perizoma alchemillata* L., *P. albulata* D. & S. and some dark *Xanthorhoë fluctuata* L. We also saw two Swifts, females of *Hepialus humuli* L. and *H. velleda* Hübn. The bird life also much engaged our attention, what with a galaxy of sea birds, skuas, many young curlews, nesting redshanks, fulmers, etc. The sight of the grand blue-grey male of the Hen Harrier "stooping" on occasion just in front of Scorradale, was most exciting.

I flew south again on the afternoon of June 25th. On reaching Heathrow I was met by a rush of hot air which reminded me of landing earlier in the year at Kuala Lumpur, for the current London temperature was 92°F. in the shade. It was the start of the phenomenal heat wave which lasted at least two weeks and was possibly the longest in continuity of the century. It brought out insects several weeks ahead of normal and produced huge catches of moths at m.v. light, measured often in thousands a night. One June 26th the thermometer stood at 96°F. and remained at this tropical height for several days running. The next day *Plebeius argus* L. was swarming on the edge of Chobham Common. In the afternoon I joined Mr. J. Messenger in King's Park Wood, near Chiddingfold, where *Argynnis paphia* L. was already well on the wing with many *Limenitis camilla* L., a prelude to better things to come. June ended on a very warm note with 87°F. in the shade on the 30th.

In scorching conditions with the temperature in the high 80's, I joined Dr. John Holmes on July 1st in a part of Alice Holt Forest not often frequented. One of the more southern

enclosures was our venue where *Argynnis paphia* was not yet reaching its climax at this early date. Many pairs were to be seen flying *in cop.* White Admirals were also in plenty and we saw one *Apatura iris* L. flit past us. *Thymelicus sylvestris* Poda was swarming, while Meadow Browns were also in great numbers. About midday we went on to another wood a few miles further south on the edge of Woolmer Forest, where during our picnic lunch under a large shady oak we were treated to a fine display of Purple Emperors sailing high up and sometimes diving down almost touching our shoulders. This fine insect had already been on the wing for at least a week, possibly a record early date for its appearance. Here again the White Admirals were in abundance and we also saw *Argynnis aglaia* L., *Polygonia c-album* L. and *Aglais urticae* L.

The tropical weather went on unabated and it was 90°F. in the shade when the Rev. Anthony Harbottle picked me up on the afternoon of July 4th. We were soon speeding up the M1 and M6 reaching Heaves Hotel just south of Kendal by 6 p.m. That evening we ran a Heath light among yew trees near Lindale where I had taken *Perizoma taeniata* Stephens in the 1930's but, though none of this small geometer was forthcoming, quite a few other species were attracted, including many *Nudaria mundana* L., also *Polia nebulosa* Hufn., *Alcis repandata* L., *Cidaria fulvata* Forst., *Apeira syringaria* L. and *Hepialus humuli* L. females. The next morning back in the hotel garden we found a huge concourse in our m.v. static trap, quite 600 individuals, the most noteworthy of which was a fresh example of *Plusia gracilis* Lempke. Again *N. mundana* was in plenty, together with *Drepana binaria* Hufn., *Plusia iota* L., and many geometers, especially *Sterrha aversata* L., *Campaea margaritata* L. and *Alcis repandata* L. There was also a host of *Agrotis exclamationis* L. and *A. clavis* Hufn.

We were soon on the road again on July 5th under clear skies and a scorching sun. Passing through Windermere we travelled on past Thirlmere to Keswick, then south past Derwentwater to the famous Honister Pass where we parked our car on the summit. Then we undertook the tedious climb up the fairly new rough gravel road to the quarry on the plateau, where we soon found *Erebia epiphron* Knoch flying vigorously but well past its best at this early date. After descending for lunch at Rosthwaite, we motored south again to Arnside Knott arriving about 4 p.m. to find the fine bright form of *Argynnis adippe* L. just starting to appear with some late *Clossiana selene* L. and early *Eumenis semele* L. The following morning we set out northwards, via Carlisle and the Lowlands. After a break at Callander for lunch, we went on via Killin and along the north shore of Loch Tay, then up the steep road to the escarpment to the foot of Ben Lawers where we once more found *Erebia epiphron* on the wing in better condition than the Lake District form. But even so, some were already worn and they were far from easy to catch in the strong breeze. We saw a single late *Hemaris tityus* L. and a *Epirrhoë tristata* L. in poor condition. Descending again to

Loch Tay, we proceeded via Tummel Bridge to the Trinafour-Struan road where we halted near a patch of rockrose. To our surprise it was not long before *Aricia artaxerxes* Fab. appeared with several fine large *Polyommatus icarus* Rott. We then made our way via Dalwhinnie and Kingussie to the Lynwilg Hotel, just south of Aviemore. This had been our haven also in April 1975. The sky had been cloudless all day and the heat intense for these northerly parts. Our m.v. trap plugged in at the hotel did not attract very much, though a few mixed species, including *Dasychira fascelina* L., *Polia tincta* Brahm, *Apamea crenata* Hufn., *Eumichtis adusta* Hübn. and *Campaea margaritata* L. The next morning at just over 80°F. in the shade we set out for the summit of the Drumnoichter Pass where we had briefly halted the previous afternoon. My companion had taken a couple of *Coenonympha tullia* Müll. on the large moss, and we found both sexes flying in plenty and very fresh. A notable capture was a female *Parasemia plantaginis* L. from which Mr. Harbottle obtained a batch of ova. These soon hatched and he bred out a series in the autumn. The afternoon we spent on Granish Moor where it was too hot for much to fly, though we saw *C. selene* and a few *P. icarus.* Later we walked up the mountain road at Kinrara. The lower slopes produced several *Gnophos myrtillata* Thunb. which we flushed from a heather bank, also a *Plusia interrogationis* L. on the wing. Early on July 8th we turned south again under very warm conditions. We stopped once more at the top of the Drumnoichter Pass where *C. tullia* was really abundant. Our next halt was the start of the Struan road where on a grassy bank was growing plenty of *Helianthemum.* Soon afterwards a number of *A. artaxerxes* were to be seen flitting over it and also on a grassy patch on the opposite side of the road. To our surprise a couple of *E. epiphron* appeared at this comparatively low altitude, possibly blown from higher ground. We saw too a solitary female *C. selene* and several fine *P. icarus.*

Travelling south that afternoon via Aberfeldy and Crieff then on to the Lowlands dual track highway to Gretna where we halted for a meal, we once more made Heaves Hotel by 9 p.m. However, after the heat in the Highlands it was refreshing to meet cooler air on the morning of July 9th when we revisited Arnside Knott. It was just sunny enough for insects to fly. On this occasion *A. adippe* was in fair plenty in both sexes and for the most part in very good order. The only other species of note was the local form of the Brown Argus. The weather broke in the afternoon and we had to negotiate heavy rainstorms in the Midlands before reaching Surrey by 8 p.m. after what had proved a most rewarding few days in the northern regions.

The heat wave was still in full swing when I accompanied Mr. J. Messenger to the Durfold area on July 11th. A few days before he had seen a number of Purple Emperors there and was almost certain they included the melanic form ab. *iole,*

but they were not so forthcoming on this occasion and we only caught sight of one *iris* sailing high about midday. However, the quantity of *Argynnis paphia* was quite phenomenal. We counted as many as a dozen on a single thistle head all jostling for position and mostly females. The second brood of Wood Whites was already on the wing. The afternoon was spent in another part of this wooded region where there is a shaded valley. Here a lot of White Admirals were settled on bramble with a few *A. aglaia* and *Thecla quercus* L. which was very plentiful generally. In all, we counted up to no less than 21 species of butterfly seen that day which also included Brimstones, Graylings, Gatekeepers, Ringlets and Commas.

On the morning of July 13th Dr. J. Holmes and I once more joined forces in Alice Holt Forest, but after the 80's of the previous week it was much cooler and dull so that we saw little moving that morning. The afternoon I went over to Weston Common, near Odiham, only to see a number of *Melanargia galatea* L. already past their best. Many *Maniola tithonus* were flying but not the galaxy of insects Dr. Holmes had seen there a few days previously, including Purple Emperors and all the usual woodland butterflies.

On the afternoon of July 15th I went by train to Thorpe-le-Soken in Essex to revisit Mr. Ben Fisher. It was a very sultry night when we placed our m.v. light on a sea wall near Beaumont-cum-Moze. Insects soon came flocking in and by just after midnight we had recorded 66 species of the macros. A feature was the simultaneous arrival on the sheet of females of both species of Lackey (*Malacosoma castrensis* L. and *M. neustria* L.). Though we only saw one Sphingid, *Deilephila elpenor* L., there was plenty else to keep us busy. A late arrival was *Pterostoma palpina* L. with a lot of *Philudoria potatoria* L. Among the early visitors were *Phragmatobia fuliginosa* L., *Eilema complana* L., *E. lurideola* Zinck. and *Drepana binaria* Hufn. The most interesting noctuids included *Euxoa nigricans* L., *Eremobia ochroleuca* D. & S., *Procus furuncula* D. & S., *Leucania straminea* Treits., *Coenobia rufa* Haworth, *Arenostola phragmitidis* Hübn., *Nonagria dissoluta* Treits., *Cerapteryx graminis* L. and *Plusia iota* L. Among the geometers were an *Eupithecia succenturiata* L., with *E. centaureata* D. & S., *Abraxas grossulariata* L., *Plemyria bicolorata* Hufn., *Deuteronomos erosaria* D. & S., *Crocallis elinguaria* L. and *Aspitates ochrearia* Rossi. There was quite a concourse of insects in my host's static trap run at his house. Species which we had not seen earlier included a good many *Arctia caja* L., *Leucania conigera* D. & S., *Sterrha biselata* Hufn. and *Selenia bilunaria* L. Later that night a heavy thunderstorm broke with torrential rain, the first for several weeks, which helped to bring out more lepidoptera earlier than usual.

But the thermometer rose once more to above 80°F. when I revisited Alice Holt Forest on the morning of July 18th, but no Purple Emperors were apparent, though several had been seen at an earlier hour that day, some quite low down. *A. paphia* was still much in evidence. I went on to the

Witley area and during the afternoon accompanied Mr. Messenger to Ebernoe, near Petworth, where we again saw many *A. paphia* also *L. sinapis* in Durfold Wood.

I flew to Catalonia in Northern Spain on July 20th. On my return ten days later on the 30th, conditions were a good deal cooler, especially when Mr. Messenger joined me on Horsell Common the last day of the month. Several *Eumenis semele* were flying with *P. icarus* and a single female *Celastrina argiolus* L. was seen and a very melanic *Ematura atomaria* L. taken by my companion. The temperature once more crept back into the 70's the first week of August, but little came to a Heath light on the borders of Chobham Common on the 1st. The following afternoon I met Mr. R. Bretherton on Pewley Down, near Guildford, where *Lysandra coridon* Poda was already getting worn, having been on the wing there since late June, possibly a record early date for its appearance. The second brood of *P. icarus* was well out, and I went over to King's Park Wood on the 4th when there was still a good concourse, mainly *L. sinapis.* Many *G. rhamni* were flying, with a few late *A. paphia* and a host of *M. tithonus.* The next afternoon in intense heat I revisited White Down, near Gomshall. Here *Hesperia comma* L. was flying in plenty with *L. coridon* and *P. napi.*

(*to be continued*)

Notes and Observations

EVIDENCE CONCERNING THE DEATH OF ELEAZAR ALBIN. — Previously nothing has been known of the birth and death dates of Eleazar Albin, who, in addition to his contributions to other areas of British natural history, was the author of the first really extensive colour-plate work on English entomology, *A Natural History of English Insects* (London, 1720 and subsequent editions). In his discussion of Albin in *A Bibliography of British Lepidoptera, 1608-1799* (London, 1960), A. A. Lisney was only able to give the naturalist's dates as "fl. 1713-1759". More information about Eleazar Albin was provided by my "English Entomological Methods in the Seventeenth and Eighteenth Centuries, I: to 1720", *Entomologist's Rec. J. Var.,* **78** (1966), 143-151; W. S. Bristowe's "The Life and Work of a Great English Naturalist, Joseph Dandridge, 1664-1746", *Entomologist's Gazette,* 18 (1967), 73-89; and Dr. Bristowe's "More about Joseph Dandridge and his Friends James Petiver and Eleazar Albin", *Entomologist's Gazette,* **18** (1967), 197-201. It now appears that Albin was born before 1690, and a notice in the London *Daily Advertiser* for 22nd February, 1741/2, provides an approximate date of death which is surprisingly earlier than previous estimates:

"*This Day is publish'd,* Bibliotheca Curiosa: or, A Catalogue of scarce and uncommon Books, in most Languages and Faculties: Being the Collection of Mr. ELEAZER ALBIN, (the curious Drawer of Birds, Insects, &c.) lately deceased, and of two private Gentlemen gone abroad. Which will begin selling this Day, at a most reasonable Rate, the lowest Price being fix'd to each Book in the Catalogue, and will continue selling till all are sold, By JOHN ROBINSON, *At his Shop in Southampton-Street, Covent-Garden*; Where Catalogues are given gratis; likewise at Mount's Coffee-House, Grosvenor-Street; at Mr. Brindley's, Bookseller, in New Bond-Street; at Mr. Davis's, Bookseller, the Corner of Sackville-Street, Piccadilly; at the Smyrna Coffee-House, Pall-Mall; at the Exchequer Coffee-House, Westminster-Hall; at Brown's Coffee-House, Mitre-Court, Fleet-Street; at Mr. Withers's, Bookseller, near Temple-Bar; at Mr. Osborn's, Bookseller, in Pater-noster-Row; and at Mrs. Nutt's, at the Royal Exchange."

Thus Eleazar Albin was "lately deceased" in February, 1741/2 (1742 new style), and perhaps a further search in contemporary records will establish a more precise date. I have not yet located a copy of the sale catalogue; it should certainly be of great interest. — Dr. RONALD S. WILKINSON, The Library of Congress, Washington, D.C. 20540; The American Museum of Natural History, New York, New York 10024.

GEOMYZA BREVISETA CZ. AND G. VENUSTA MG. (DIPT.: OPOMYZIDAE) IN WEST KENT, THE LATTER CONFIRMED AS BRITISH. — When in 1967 (*Ent. mon. Mag.,* **103**: 172) I recorded the former of these species from Oxon., there were only a few British specimens known from single localities in Suffolk, Hants., and Somerset. Recently, however, J. W. Ismay (1974, *ibid.,* **110**: 103) has recorded it from Egham, Surrey (in numbers), East Kent, and Dorset, and from four localities in Norfolk. I can now report that *G. breviseta* occurs in the London suburbs. Between 16.vi and 5.vii.72 I took four of these flies, on different days, about the base of a poplar stump and on the grass around it in a lane beyond the end of my former garden at Blackheath; another while grubbing for beetles, etc., on short turf in a heathy spot at Charlton (30.iv.74); and finally one at rest on a young willow sapling in a park in the same area (14.vii.76). The fact that the species has in general to be sought at the roots of grasses, thus seldom finding its way into the dipterist's net, doubtless accounts for its apparent rarity.

Of still more interest is the capture of a ♀ *Geomyza venusta* Mg. by general sweeping on "Darwin's Bank" — a chalky hillside at Downe, West Kent — on 8th July, 1973. Though Collin (1945, *Ent. Rec.,* **57**: 15) had not seen a British specimen, he included it in his key to our species as one which had been misrecorded but which could well occur here, and

I have seen no further reference to it. I feel confident that my specimen is correctly determined, since it runs straight to *venusta* in the key and cannot be made to fit any other species included. I thank my friend Mr. J. M. Chalmers-Hunt for the opportunity of collecting at the above attractive spot. — A. A. ALLEN.

THE HAZARDS OF MOTH HUNTING. — It was a cool, deceptively clear night on the 22nd of February when Mr. Parsons and I converged upon Abbot's Wood for one of the most bizarre collecting trips in my experience.

In the fading light of that February evening we assembled two actinic traps on the outskirts of the wood. One was sited in an exposed position, and the other was afforded a little shelter by some denuded bushes. The lights had just been switched on when a shower of rain persuaded us to retire hurriedly beneath a hedge. A few minutes later the rain ceased and we began the evening by taking numerous *Theria rupicapraria* D. & S. and countless examples of *Erannis marginaria* Fabr. showing marked variation. After a good collecting session in the wood, we emerged and noticed several car headlamps in the vicinity of our traps. Not wishing to invite the attention of the public at large, we decided to rescue them. As we neared the site of all the activity we were confronted by a nervous young constable and three members of the farming fraternity. He was under the mistaken impression that we were poaching, and was sadly disappointed when examination of our suspiciously bulging bags revealed sundry mothing impedimentia and the writer's vacuum flask.

It later transpired that our lights had been reported to the police station as a "Martian Invasion" by a score of distraught motorists! The constable had been on the point of calling for reinforcements when we appeared and concluded that chapter of local history. — MARK HADLEY, 7 Beverington Close, Eastbourne, Sussex.

SCYTHRIS FLETCHERELLA MEYRICK IN KENT. — On the 14th May, 1977 Mr. Chalmers-Hunt and I visited a well-known locality on the downs in Kent and found larvae of the seldom recorded *Scythris fletcherella.* I first found the larvae at the same locality in 1973 and have done so on several occasions since, e.g. 1.v.76 and 17.v.76. The species is probably more widespread than records suggest but the larval habits are not well-known. The larva spins a loose web on *Helianthemum nummularium* and this web eventually extends over the lower leaves of several shoots. A tube is formed down into the moss and debris and the larva can withdraw rapidly into the tube when disturbed. The larva eats the upper surface of the leaves which gives the eaten leaves a whitish appearance. Foodplant growing over moss is preferred. — J. ROCHE, 16 Frimley Court, Sidcup Hill, Sidcup, Kent.

PLATE XVIII

H. C. Huggins

OBITUARY

HENRY CHARLES HUGGINS, F.R.E.S.
1891-1977

It is with deep regret that we have to record the passing of Henry Huggins, one of the foremost British lepidopterists of the twentieth century, who died at Westcliff-on-Sea, Essex on 14th April, 1977 in his 86th year.

H. C. Huggins was born at Gravesend, Kent, on 17th May, 1891, the elder son of Henry Huggins, J.P., and began collecting at the age of eight with a *Mimas tiliae* L. larva which the following year, 1899, produced a one-spot ab. In 1900, he met the Rev. C. R. N. Burrows who assisted and coached him in the macros; and in 1910, B. A. Bower, who grounded him in the micros. He was alsc helped in his youth by the celebrated A. B. Farn (a second cousin of his grandmother, Mrs. Louisa Huggins née Farn). For the first forty years or so, much of his collecting was done in Kent while residing at Gravesend and later at Sittingbourne, Margate and Faversham, and in 1901 he took the third British specimen of *Conopia anthraciniformis* Esp. (=*andrenaeformis* Laspeyres), mentioned in Tutt's *Practical Hints.*

For a time he collected British land and freshwater mollusca, publishing a paper on "The Limnaeae of the Alpine Lakes of the Glengarriff District, West Cork" in the *Irish Naturalist* for 1918, and in which he suppressed two so-called species, *L. involuta* Thomp. and *L. praetenuis* Bowell. He always regarded this early paper as his best work, and although it was adversely criticised at the time, in the 1930's A. E. Boycott, F.R.S. went over the results again, checking by breeding and dissection, and entirely endorsed them.

He began this molluscan work in 1914, in which year he also took the first Irish example of *Eupithecia pulchellata* ab. *hebudium* Sheldon. Ireland got a grip on him which was never relaxed and except during the "troubles" and Second World War he made almost annual visits there (36 in all), the last in 1973 in the company of the writer.

After 1922, Huggins concentrated on micros with some success but much difficulty owing to the absence at that time of qualified people at the B.M. to identify them. However, he did add *Cydia conicolana* Heylaerts to the British list. He was also the first to establish the specific identity of *Eucosma heringiana* Jäckh, though Meyrick unfortunately identified this as ab. *rubescana* Const., so H. described it specifically as such and the identification being incorrect it was redescribed 15 years later as *heringiana.* Meyrick, moreover, misidentified two *Cydia prunivorana* Rag. that H. took at Sittingbourne in 1922 as stunted *Enarmonia formosana* Scop. (=*woeberiana* D. & S.), thereby postponing its introduction to the British list for over 40 years.

In 1924, the B.M. pronounced his specimens of *Leioptilus bowesi* Whalley as "the well-known Kentish form of *osteodactylus* Z." H. said this caused his one published bloomer,

as he supplied Dr. Beirne with the description of the larva of *bowesi,* which he had bred, as that of *osteodactylus.*

Harry Huggins was a most interesting and entertaining companion with a wide knowledge and an incredible fund of anecdote, much of it entomological reaching back to the early 1900's. Possessed of a phenomenal memory he could recall details of past exploits and encounters with many entomologists long since dead, among them J. W. Tutt, Charles Fenn, Richard South, Sir John Fryer, the Rev. Metcalfe, J. W. Corder and W. G. Sheldon to mention but a few of those with whom he was acquainted or who were his friends. He was also an excellent correspondent, and to receive one of his letters so full of information and that characteristic racy humour of his was enjoyable indeed.

An inveterate reader and prolific writer, he contributed hundreds of notes to this magazine (including the series "Notes on the Microlepidoptera") and to the *Entomologist,* many of them on new subspecies and aberrations, especially those from Ireland noted over the past 60 years. He was also one of the authors of the recently published *A Guide to the Butterflies and Larger Moths of Essex.* He was a member of the editorial panel of the *Entomologist's Record* from 1962 until his death; he joined the (then) South London Entomological and Natural History Society in 1934; and was elected F.R.E.S. in 1936. Except for the Tineoidea (which group he did not collect owing to a physical disability in his hands which prevented him from handling such small insects), I believe his was the most complete private collection of British lepidoptera in existence.[1] Fortunately the whole of this splendid collection has been presented to the British Museum (Nat. Hist.).

In 1918, he married Ethel Ada Grist of Erith, who until her death in 1963 was a great help in his collecting, and caught the first *Cryphia muralis* ab. *nigra* Huggins and *Euphyia bilineata* ab. *ethelae* Huggins. They had one son, who like his father, became a manager of a branch of Westminster Bank, and to whom we offer our sincerest sympathy. — J.M.C.-H.

[1] Among the highlights of his collection are specimens of *Arctornis l-nigrum* O. F. Müller, *Leucodonta bicoloria* D. & S., *Oxyptilus pilosellae* Z., *Gibberifera simplana* F.v.R.; also, series of *Costaconvexa polygrammata* Bork., *Archips betulana* Hbn. (*decretana* Tr.) and *Choristoneura lafauryana* Ragonot, which three species are probably now only represented in museum collections.

AN EARLY APPEARANCE OF ACHERONTIA ATROPOS L. — A specimen of *A. atropos* came to my light-trap here on the night of April 27th/28th last. Believing the moth to be a female, I kept it alive in a large container supplied with food and suitable vegetation in the hope that it might lay. The moth which was in quite good condition apart from the loss of one of its antennae, survived until the night of May 13th/14th having hardly moved, apparently not fed and certainly not laid any eggs. — J. L. MESSENGER, Stonehaven, Wormley Hill, Whitley, Surrey.

Siona lineata Scopoli : **dealbata** L. : Black-veined Moth.

Native. Chalk downs and pits, open woods on clay, rough grassy fields on Kentish ragstone; [on *Brachypodium pinnatum*].

This strikingly marked moth has declined to the point of extinction in most of its localities in the county. In some, such as at Hollingbourne and Chattenden, the cause of this extinction is not clear, but at others it has been the direct result of man's interference. The delightful rough flowery grasslands at Goldwell, where the insect flourished until the early 1970's, are filled with refuse despite efforts to conserve the locality; and the downs at Chilham and Crundale, where this and other good species occurred, have been ploughed. The moth still persists very locally in div. 8 and 11, but nowhere else in Britain to my knowledge. I have thus purposely withheld details of its survival, since under no circumstances should this species be taken.

3. Faversham (Stainton, *Man.*, **2**: 63). Blean Woods (Chaney, 1884-87).

6a. Darenth Wood (see *First Record*). [Chattenden?], took twenty-two in Kent*, May-June 1859 (Allchin, *Ent. week. Int.*, **8**: 4). Chattenden, about 12, June 1863 (Morris, *Week. Ent.*, **3**: 286); thirty, June 8th 1889 (Fenn, *Diary*); formerly common in one portion of Chattenden Roughs and meadow adjoining, but now becoming very scarce (Chaney, 1884-87); near Strood [Chattenden], 1890 (Tyrer, *Ent. Rec.*, **1**: 207); about 30 taken by various collectors, June 30th 1891 (Fenn, *Diary*); 1895 (Battley, *Ent. Rec.*, **7**: 22) "Strood 6.vi.98" (1) [Chattenden] (C.-H. coll.); 1899 (James, *Ent. Rec.*, **12**: 102); "I took two at Chattenden in 1902 and one in 1903, I never heard of any there after that year" (H. C. Huggins); Chattenden, one, June 1906, in Hope Dept. (R. F. Bretherton).

7. Charing, "once abundantly" (T. Marshall, in Stephens, *Haust.*, **3**: 245). [Westwell?] 1861, over 100 taken by A. Russell and H. Foster, June 10th-11th, and over 50 more to June 18th by R. Down and Dowsett (Russell, *Ent. week. Int.*, **10**: 91). Westwell Downs, abundant (*V.C.H.*, 1908). Hollingbourne, one, 1919, four, 1923 (F. T. Grant); common, last seen 1937, not looked for since (H. C. Huggins) (I have, repeatedly, without seeing it — C.-H.) Soakham Downs (Scott, 1936); not seen since (E. Scott *personal communication*, iii.1956). Bearsted, one, June 14th 1948 in G. Law coll. (C.-H.).

8. Ashford district*, 1868, Mr. Jeffrey watched the female oviposit on *Brachypodium* (Newman, *Entomologist*, **4**: 100). Wye, 1894 (Richardson, *Entomologist*, **27**: 246). "Wye Downs, June 14th 1894, where they were in great abundance in long grass of downs and spinnies. Flying freely in sunshine" (S. Wacher MS.); Wye chalkpit, C. A. W. Duffield saw one in 1912, "it has been very scarce this year" (R. A. Jackson, *Diary*); plentiful 1939, 1953 (C.-H.); a few about May 12th 1960, none seen May 28th 1960 and presumed over (J. Cadbury *teste* A. L. Goodson). Wye downs, common, June 4th 1950; Brook, common, May 27th 1960 (R. F. Bretherton). "Locally common from Brabourne to Crundale on the Downs" (Scott, 1936). Brook, common, 1934 (A. J. L. Bowes); common, June 27th 1960 (R. F. Bretherton). Crundale, common 1935; Hastingsleigh, not uncommon 1937 (H. C. Huggins). Hastingsleigh, 1954, about 12 in one day (B. K. West). Chilham Downs, very plentiful 1922, 1923, 1924 (H. G. Gomm, *Diary*); not uncommon annually 1934-37 (C.-H.). Sole Street, 1932 (J. H. B. Lowe). Brook, 1961 (de Worms, *Entomologist*, **95**: 101). [Deal (5); Stanting Downs (5) bred 1891, all in Hope Dept. (R. F. Bretherton). Stanting Downs may have been a locality for *lineata* as it lies between Canterbury and Wye, but the species has never been recorded from the eastern (coastal) half of this division and I very much doubt if it has ever occurred at Deal. The specimens were probably from Parry of Canterbury. — C.-H.]

11. Near Wateringbury*, very local (*V.C.H.*, 1908). Goldwell Pit, 1955, several (Scott, *Bull. Kent. Fld. Cl.*, **1**: 10); seen annually since in these disused Kentish ragstone quarries until 1975, in which year I counted 12 there on June 9th, but by 1976 the locality had been obliterated and there was no sign of the insect (C.-H.). Hoads Wood, ♂, at m.v. light, June 10th 1966 (B. K. West).

12. Ham Street Woods, June 4th 1950, "one seen arriving at

paraffin lamp and caught" by R. Ellison (R. F. Bretherton). East Ashford, June 1957, June 7th 1958, June 3rd 1959, several seen each year, one only May 30th 1960 (M. Singleton and D. Youngs).

13. Tunbridge Wells (J. G. Children, in Stephens, *Haust.*, **3**: 245).

VARIATION. — The following are in RCK: ab. *fasciata* Hoffmann (underside ab.), "J. Parry/Kent 1891" (1); ab. "yellow tint", East Kent, June 1935, H. D. Smart.

FIRST RECORD, 1831: Darenth Wood, formerly (Stephens, *Haust.*, **3**: 245).

Aspitates gilvaria Denis and Schiffermüller : Straw Belle.

Native. Chalk downs and rough grassy places on the chalk, casually elsewhere; on *Pastinaca sativa.* The occurrence of this species in div. 10 suggests a temporary settlement. Curtis (*Br. Ent.*, 467) called it "The Dover Belle'.

1. Lee, singly (C. Fenn, in *Wool. Surv.*, 1909). Bexley district*, rare (L. W. Newman, in *Wool. Surv.*, 1909).

6. Paddlesworth (Chaney, 1884-87). Cuxton (Chaney, *loc. cit.*); 1893, July 6th (abundant), 22nd (Tutt, *Ent. Rec.*, **4**:275). Greenhithe, one in moth trap, 1899 (A. B. Farn MS.). Birling, singly, 1901, 1910 (Anquetil *teste* E. D. Morgan); September 2nd 1910, August 16th 1913 (22 ♂ ♂, 6 ♀ ♀), August 14th 1914 (17) (F. T. Grant); 1950 (H. C. Huggins). Halling, common (S. F. P. Blyth). Wrotham Down, 1915-16, in P. J. and D. J. A. Buxton coll. (C.-H.); 1923 (F. T. Grant). Shoreham, a few, July 21st 1912 (Fenn, *Diary*). Eynsford, numerous, August 3rd 1953, July 30th 1955, August 5th 1957 (R. G. Chatelain). Trottiscliffe, plentiful, August 12th 1961 (C.-H.); common, 1966-68 (D. O'Keeffe).

7. Rochester (Stephens, *Haust.*, **3**: 208). Nashenden Bottom; Burham (Chaney, *loc. cit.*). Common on the Boxley Hills above the Pilgrims' Road (Reid, *S.E. Nat.*, **1904**: 53). Boxley, 1904, numerous in E. Goodwin coll. (C.-H.). Detling (G .V. Bull). Burham, common, August 18th 1957 (E. Philp); one, July 31st 1960 (Skinner, *Proc. S. Lond. ent. nat. Hist. Soc.*, **1960**: 89).

8. In the utmost profusion in some grassy fields east of Dover Castle (Stephens, *loc. cit.*). Dover (Grant, *Zoologist,* 2583); 1860 (Fereday, *Ent. week. Int.*, **9**: 139); 1861 (Stonestreet, *Ent. week. Int.*, **10**: 187). Temple Ewell, very common, 1939; Fan Bay, not uncommon (A. J. L. Bowes). Coombe Hole, three, August 17th 1898; Kearsney, one, August 28th 1898; Dover Cliffs, 7 ♂ ♂, 1 ♀, August 18th 1895 (H. D. Stockwell, *Diary*). May be found often commonly on the Cliffs and Downs round Dover and between Dover and Deal (E. & Y., 1949). Deal, September 3rd, 7th 1860 (Fenn, *Lep. Data* MS.). Deal and St. Margaret's Bay, very common, August 18th-25th 1888 (Fenn, *Lep. Data* MS.); 1890-91 (Fenn, *Ent. Rec.*, **1**: 204, **2**: 203-4). Kingsdown, not scarce, August 15th-27th 1884 (Fenn, *Lep. Data* MS.); 1924, July 12th (2), 23rd (12) (H. G. Gomm, *Diary*). St. Margaret's Bay, 1925, 1927 (H. G. Gomm, *Diary*); fairly common, 1969 (T. W. Harman). Folkestone, July 24th-August 1st 1858 (H. Tompkins, *Diary*); 1860 (Fereday, *loc. cit.*); abundant, 1864 (Meek, *Ent. mon. Mag.*, **1**: 190). Folkestone Warren, abundant (Knaggs, 1870); frequent, 1892 (E. D. Morgan); 1932 (J. H. B. Lowe); one, July 30th 1949 (E. C. Pelham-Clinton); frequent annually; on July 14th 1963, I took a full-grown larva on *P. sativum* from which I reared a ♀ on August 7th 1963 (C.-H.). Sugar Loaf Hill, Folkestone, not scarce 1946, 1950, 1953, 1954, 1955, disturbed by day from coarse grass, always more males than females (C.-H.). Crundale Downs, a few, August 19th 1960 (C. R. Haxby and J. Briggs).

9. Ramsgate neighbourhod*, c. 1888 (Willson, *Entomologist,* **23**: 140).

10. Bitchett Common, Sevenoaks, 1951, about six in a small area of dried-up bracken (G. A. N. Davis); two of these specimens are in my coll. (C.-H.).[1]

[1] A most curious locality for this normally calcareous downland species: I can only suppose that a stray female alighted here and founded a colony.

11. Tunbridge Wells district*, apparently scarce (R. H. Rattray in Knipe, 1916).

15. Dungeness, one, September 7th 1936 (A. M. Morley).

16. Hythe, 1950 (A. M. Swain). Folkestone Town, one 1952, one 1953 (A. M. Morley).

VARIATION. — The following are in RCK: ab. *vittata* Cockayne, allotype ♀, Dover, Chatwin, 1884; ab. *suffusa* Cockayne (2 ♂ ♂ paratypes), S.E. Kent, 1897; Snodland, August 9th 1901, C. R. N. Burrows; ab. *conspersaria* Stgr., Folkestone (4), Dover (1); ab. "no discoidal spot", Folkestone, one, Folkesotne, L. B. Prout, 1910.

Vinall (*Entomologist,* **38**: 61) records a female, taken Folkestone Warren, July 25th 1904, which appears to conform to ab. *suffusa* Cockayne judging by the description.

FIRST RECORD, 1831: Stephens, *loc. cit.*

A. ochrearia Rossi : Yellow Belle.

Resident, perhaps native. Sea walls and waste places by the seashore, lucerne fields and rough grassy places on the coast; on *Daucus carota.* Recorded from all divisions except 10, 14. Common to abundant on the coast, becoming scarcer inland. Few records for 5, 7, 11; doubtfully for 13.

Vaughan (*Ent. Ann.,* **1868**: 119) records the larva at Herne Bay on wild carrot (*D. carota*).

5. Chelsfield, 1950 (A. M. Swain).

7. Westwell, one, October 1st 1962 (E. Scott).

11. Aylesford, 1951 (2), 1952 (1), 1953 (1), 1954 (3) (G. A. N. Davis).

[13. "Only one or two have been taken on Broadwater Forest" (Knipe, 1916); this may be Sussex (C.-H.).]

VARIATION. — The moth has two generations, the spring brood moths are referable to gen. *aestiva* Schaw. The following named aberrations are in RCK: *glabra* Lempke, Folkestone, Cuxton, Sheppey; *unipuncta* Lempke, Deal, 1898 (1); *obsoleta* Lempke, Isle of Sheppey (2), Romney Marsh (1); ab. with "transverse lines connected in centre", Deal, 1898 (1).

Cole (*Proc. S. Lond. ent. nat. Hist. Soc.,* **1955**: 22, plt. II, fig. 3) exhibited a curious "asymmetrical variety", caught at Deal, August 22nd 1955.

FIRST RECORD, 1809: "Habitat in Cantiae Agris, at infrequens" (Haworth, *Lep. Brit.,* **2**: 288).

Dyscia fagaria Thunberg : Grey Scalloped Bar.

Native, extinct. Heaths; on *Calluna vulgaris.*

1. West Wickham, several specimens bred June 1859 from larvae found feeding on heath (B[utton], *Ent. week. Int.,* **6**: 99); from larvae on heath, bred May 20th 1861 (Huckett, *Ent. week. Int.,* **10**: 117). Petts Wood, a larva, May 6th 1865 (Fenn, *Diary*) (Chislehurst (*V.C.H.,* 1908) probably refers; Paul's Cray Common (Fenn, in *Wool. Surv.,* 1909) certainly does).

6. Greenhithe* (*V.C.H.,* 1908).

FIRST RECORD, 1859: B[utton], *loc. cit.*

Perconia strigillaria Hübner : Grass Wave.

Native. Wood borders and clearings; [on *Calluna vulgaris*].

1. West Wickham (1858) (Barrett, *Ent. week. Int.,* **4**: 109). Petts Wood, a larva, May 6th 1865, imago reared (Fenn, *Diary*).

3. Thornden Wood, eight, June 10th 1865 (Fenn, *Diary*). East Blean Wood [and Thornden Wood], thirty-five, May 26th-June 2nd 1866 (Fenn, *Diary*). Church Wood, one, June 22nd 1913, in R. P. A. Hunt coll. (C.-H.). Near Herne, ♂, June 11th 1937 (P. F. Harris).

6a. Chattenden Roughs, 1869 (J. J. Walker MS.); common, June 12th 1884 (Fenn, *Diary*); (Chaney, 1884-87); common until 1918, not looked for since (H. C. Huggins); four, June 1st 1925 (F. T. Grant); ♂, June 4th 1958 (C.-H.).

8. East Downs, Folkestone (Knaggs, 1870).

[11. Wateringbury, 9 ♂ ♂, 2 ♀ ♀, in E. Goodwin coll. (C.-H.).

W. A. Cope, who knew both Goodwin and this locality intimately, told me he had never heared of *strigillaria* from there. The series bears printed labels, but no dates have been entered (C.-H.).]

13. Groombridge (Bull, *Proc. S. Lond. ent. nat. Hist. Soc.*, **1931-32**: 59). Tunbridge Wells, two or three in 1957 and 1958 (L. R. Tesch per C. A. Stace). [Abundant a few yards across the Sussex border from Tunbridge Wells (E. D. Morgan).]

14. Tenterden (Stainton, *Man.*, **2**: 64).

VARIATION. — Kentish woodland *strigillaria* are pale and lightly marked compared with those from the moors either in the north or south (Tutt, *Ent. Rec.*, **4**: 230, 233); they appear to conform to sub.sp. *fuscosignata* Lempke (C.-H.).

In RCK is ab. *diluta* Lempke, Chattenden.

FIRST RECORD, 1809: "Habitat apud nos Imago in Cantio valde infrequens" (Haworth, *Lep. Brit.*, **2**: 288).

HEPIALIDAE

Hepialus (Hepialus) humuli L. : Ghost Swift.

Native. Waste places, rough meadows, etc.; in roots of *Rumex obtusifolius*, hop, strawberry and exceptionally on apple fruit. Recorded from all divisions except 15 (probably present). "Generally common" (*V.C.H.*, 1908).

The moth is normally on the wing from the end of June, but in 1912, F. T. Grant took a ♀ at Darenth Wood on May 18th; and in 1953, W. L. Rudland one at Wye on August 14th.

D. F. Owen found larvae and pupae on a bombed site at Lewisham about 1946; and F. Gillett (*Diary*) bred the moth, June 25th 1917, from a pupa found at Chevening. A. A. Allen has occasionally found the larvae in turf about Charlton and Shooters Hill. On September 12th 1949, D. Lanktree took a larva at Lee that was feeding on the roots of *R. obtusifolius*; and according to Theobald (*J.S.E. Agric. Coll. Wye*, **1906** (15), 102), "Mr. Till of Eynsford sent a nearly mature larva found tunnelling up a dock (*Rumex*) stem in March". Massee (*Rpt. E. Malling Res. Stn.*, **1935**: 166) recorded the larva in Kent on the roots of hops and an attack in 1935 at Goudhurst on the roots of strawberries. He (idem, **1946**: 58) further noted an outbreak on strawberries in a strawberry field near Faversham in 1946; and (idem, **1955**: 131) at Marden, larvae feeding on the young fibrous roots of hop the beginning of June 1955. Massee also recorded (*Rpt. E. Malling Res. Stn.*, **1943**: 58) that at Barming in early May 1943, a number of Bramley's Seedling apples removed from a gas store were infested with the larvae.

VARIATION. — A ♀ that I took at Broad Oak, July 1st 1946, is a monster with alar expanse 76 mm.; it is probably referable to ab. *grandis* Pfitzner (C.-H.).

FIRST RECORD, 1858: [Chattenden] "I only met with one specimen (a female) of this very common species" (Crozier, *Nat. Hist. Rev.*, **5**: 128).

H. (Triodia) sylvina L. : Wood Swift.

Native. Waste land, gardens, heaths, etc.; on roots of dock, *Pteridium aquilinum, Echium vulgare*. Fairly frequent and found in all divisions.

The moth is normally on the wing from late July to throughout August and early September; in 1941, however, R. F. Birchenough took one at West Wickham on June 21st (Birchenough, *Ent. Rec.*, **63**: 12).

Knaggs (1870) records the larva in Folkestone Warren feeding on the roots of dock; and Purdey (*Entomologist*, **8**: 226) noted that [at Folkestone] the larva forms "a passage leading to the root of *Echium vulgare*, upon which it feeds . . . " In the spring of 1957, I took a larva in my garden at West Wickham which was feeding on the roots of bracken (*P. aquilinum*) and from which in due course I bred a ♀ (C.-H.).

VARIATION. — The following are in RCK: Ab. *crux* F., Herne Bay, one, 1905, L. B. Prout; Kent, two, 1912. Ab. *pallidus* Hormuz., Strood.

F. T. Grant had a specimen with five wings (three hindwings), Tankerton, August 15th 1912.

FIRST RECORD, 1828: Birch Wood (Stephens, *Haust.*, **2**: 8).

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AND JOURNAL OF VARIATION

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

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CONTENTS

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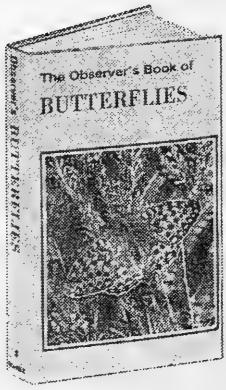

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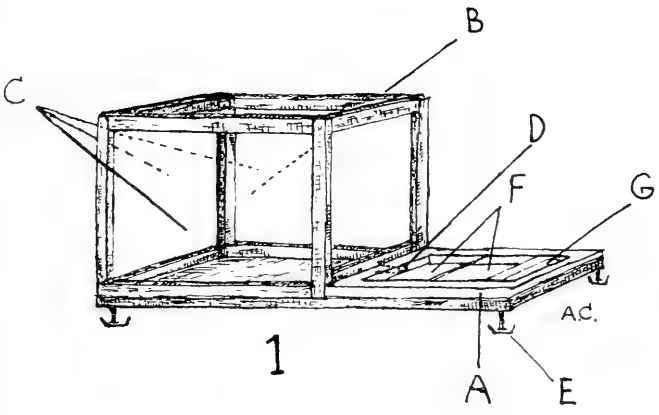

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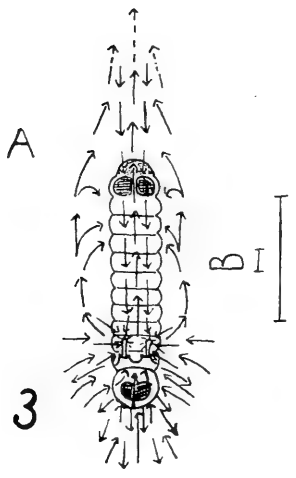

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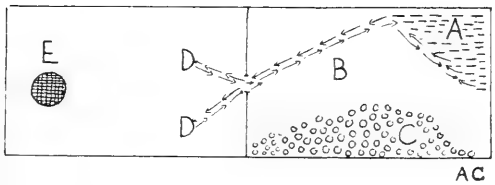

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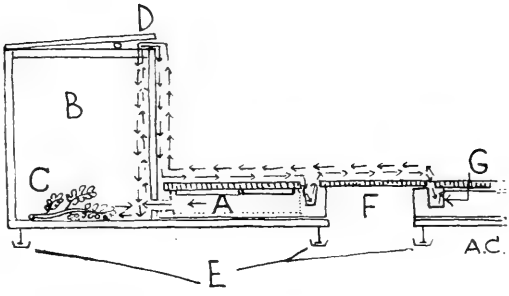

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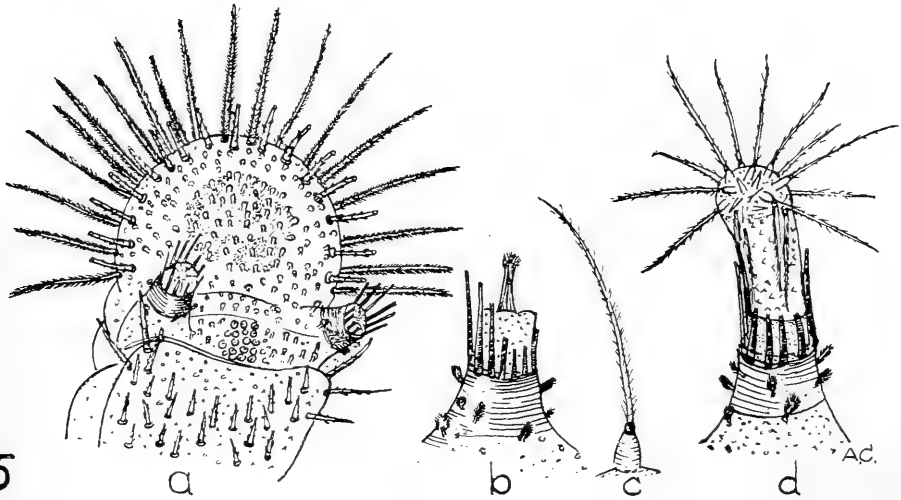

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A Study of the Myrmecophilous Behaviour of the Immature Stages of *Aloeides thyra* (L.) (Lep.: Lycaenidae) with Special Reference to the Function of the Retractile Tubercles and with Additional Notes on the General Biology of the Species

By A. J. M. Claassens, Ph.D.[1]

and C. G. C. Dickson, M.Sc.[2]

Introduction

Claassens and Dickson (1974) described the early stages of *Aloeides thyra* (L.) and gave notes on the association of the larvae with the small black sugar ant, *Acantholepis capensis* Mayr (Formicidae: Camponitinae). The same authors discussed the general ecology and the known distribution of this lycaenid. *Al. thyra* is a common and widely spread insect in the South Western Cape Province but finding the immature stages had always been regarded as no easy task. One of us was fortunate in finding the breeding ground of a fairly large colony of this butterfly on the slopes of Signal Hill, where the early stages were abundant and easy to collect.

This paper describes how some of the new material was used, both in the field and under artificial conditions, for a detailed study of the intimate relationship between the larvae and their "host" ants. The most gratifying result of our investigations was a better understanding of the function of the retractile tubercles of the larvae. It is now suggested that the tubercles secrete a volatile substance which alarms and disperses the ants imbibing an epidermal secretion of the larvae.

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PLATE XIX

Fig. 1. Formicarium. A. Nest. B. Arena. C. Mosquito wire-mesh. D. Connecting tunnel. E. Nail in dish containing DDT. F. Glass covers. G. Trough.

Fig. 2. Diagram showing movements of *Al. thyra* larvae and ants to and from arena. A. Area of nest occupied by larvae and ants during the day. B. Path travelled by ants and larvae during the night. C. Middens. D. Foodplant. E. Dish with sugar-water for ants.

Fig. 3. A. Diagramatic representation of the movements of the "host" ants in response to the action of the tubercles of the larvae. B. Actual size of a worker ant compared with the average size of a fully grown larva.

Fig. 4. Diagramatic representation of migration of the larvae and the ants in response to humidity requirements. A. Dry nest. B. Arena. C. Foodplant. D. Glass cover slightly tilted. E. Nails in DDT. F. Strip of cardboard between dry nest and moist nest. G. Trough of moist nest partly covered with cardboard.

Fig. 5. Tubercles of *Al. thyra* larva. A. Terminal segments showing the position of the tubercles. B. A tubercle partly extended. C. Hair-like process at the tip of a tubercle. D. Fully extended tubercle. (A-D highly magnified.)

It is further suggested that the dispersal of the ants ensures that they leave a scented trail between the nest and the foodplant, upon which the larvae travel at night when they desert the "host" ants' nests temporarily to feed. Our observations were also rewarding in that several aspects of the myrmecophilous behaviour of the larvae which had escaped our notice during previous investigations could be recorded.

Field observations

When on the 10th May, 1975, the breeding grounds of a colony of *Aloeides thyra* were discovered on the slopes of Signal Hill above Sea Point, Cape Town, it was surprising to see hundreds of larvae in several instars in nests under stones of the "host" ant *Acantholepis capensis.* In some instances more than 20 larvae were counted under one stone. They were usually situated near the edge of a stone, presumably near the exit of the ants' nest, and mostly attached in an upside-down position. The larvae were usually found in nests situated close to the foodplants or actually undearneath them. Occasionally the nearest foodplant was approximately as far as 60 cm. away or in a few cases even more, but the larvae never occurred under stones which did not cover an ants' nest. The foodplants used by the larvae in this area are *Aspalathus cymbiformis* DC and *A. acuminatus* Lam. ssp. *pungens* (Thunb.) R. Dahlgr. (Leguminoseae).

The first pupae were found on 14th July and the first imago was seen as early as 27th July. Tite and Dickson (1968) and Claassens and Dickson (1974) recorded the flight period to start during late August or early September. Due to cold weather during the winter months and spring of 1976 pupation in the field was delayed until the fourth week of July and fully grown larvae were seen until the end of September. Pupae, during this year, were found until the 10th October.

The ants and their "guest" larvae nearly always deserted their nests after the stones under which they were found were lifted. For that reason the lifting of stones was stopped in most of the breeding ground, after the first pupae, which could not follow the ants, were noticed.

Judging by the long drawn-out appearance of the imagines from late July until early May, it seems almost certain that the species is double-brooded. Imagines seen from February onwards are often, though not always, considerably smaller than those emerging during spring and early summer. This discrepancy in size is no doubt due to the leaves of the foodplants becoming very dry and small, though remaining alive, during the hot summer months. The average wing-span of specimens set in the conventional manner in the case of spring brood is approximately 30 mm. for males and 34 mm. for females. The corresponding measurements for imagines caught in April were 23 mm. and 25 mm. respectively. Specimens bred during spring and summer in captivity were also often considerably smaller than usual, the smaller size being certainly due to inadequate fresh food supply.

The search for larvae and pupae during the late summer months has been in vain. The ants and their "guests" stay deeper underground, which renders searching for them difficult and unrewarding. A two-hour search for larvae on 10th March, 1976 resulted in the discovery of one early instar larva and one later instar larva in an ants nest at a depth of approximately 10 cm. The soil at that depth was slightly damp. The weather remained dry until 16th April, when a considerable amount of rain fell over the area. On 19th April the breeding grounds were again visited by the authors in the company of Mr. P. Rogers, a keen lepidopterist from the United Kingdom on holiday in Cape Town. The ants had reappeared under several stones and under two stones situated under the same foodplant more than 20 *Al. thyra* larvae were counted.

The imagines were often seen to feed on flowers, but not on those of the foodplant of the larvae. In accordance with their habitual low flight which rarely exceeds a height of five feet, they visit flowers of short or trailing plants. On Signal Hill they showed an obvious partiality to the pink flowers of *Lampranthus elegans* (Jacq.) Schwant and the slightly larger pink flowers of *L. falciformis* (Haw.) N.E.Br. (Ficoideae). They also regularly visited the yellow flowers of *Leyssera gnaphalodes* L. (Compositae), a small shrublet of common occurrence on Signal Hill.

Observations on Al. thyra larvae in a formicarium

In order to study the behaviour of the ants and the "guest" larvae more closely, 20 *Al. thyra* larvae in various instars, together with a moderately sized colony of the "host" ant, were introduced into an artificial nest of the type described by Claassens (1974). The nest used during this study is depicted in Fig. 1. The arrangement consists of a plaster-of-paris nest (A) and an arena (B), the sides of which are covered with mosquito wire-mesh (C). Small basins (E) containing DDT confine the ants which can escape through the wire-mesh, to the artificial environment. The top of the arena is covered with a loose sheet of glass, but the nest compartment is covered with a tightly fitting piece of glass made out of two halves (F.) This cover preserves the humidity requirements, allows for viewing the ants and facilitates handling of material or part of it without upsetting the colony as a whole. When not under observation the nest compartment is covered with a piece of cardbroad to exclude light. A 4 mm. diameter tunnel made in the plaster-of-paris at (D) connects the nest to the arena. A trough (G) made in the plaster-of-paris allows for humidity adjustments in the nest. Water poured into this trough is readily absorbed.

The ants and the larvae were initially placed in the arena from where, first the ants and later the larvae, moved into the nest. The larvae were regularly provided with fresh twigs of one of the foodplants or of both, which were placed in the arena, sometimes in a small bottle containing water, sometimes

simply placed at the bottom of the arena. The movements of the ants and the larvae are shown in Fig. 2. The larvae congregated in the right-hand side corner (A) of the nest near the trough where the ants also assembled. The ants removed the frass produced by the larvae and placed it on the middens (C). The larvae were always accompanied by ants even during the day when the former remained most of the time motionless, although some movement of individual larvae took place. Towards sunset (on overcast days earlier) the larvae, sometimes three or four in procession and always accompanied by ants, followed the path indicated by the arrows (B) while travelling to from the foodplant in the arena. The same path was travelled by the ants during the day, presumably leaving a scented trail perceptible to the larvae, because they travelled along that same path for several weeks. While moving from the nest to the arena the larvae repeatedly extended their tubercles. When the tubercles were extended from their spiny casings, the ants which happened to be near them, whether on the larvae or in their proximity, became very excited. They rushed up to the tubercles which, when their long hair-like processes crowning their extremities were touched by the ants' antennae, retracted immediately and rapidly. The ants subsequently ran around wildly and seemingly excited. They were obviously aware of something in the air surrounding them, and, their antennae held high up, they groped in all directions as they ran about. When this behaviour was studied on a flat surface, the path travelled by the ants was approximately as depicted in Fig. 3. The number of ants participating in the "dance" varied as it depended upon the number of ants attending the larvae or that were close enough to the tubercles to perceive the secretion. The closer the ants happened to be to the protruded tubercles, the greater the excitement they caused among them. The "scent" of the secretion, possibly a pheromone, was often shared with other ants met on their way. This "sharing" was established by two ants touching each other's antennae. Thus the effectiveness of the tubercles was increased. However, the increased activity the secretion induced in the ants was of short duration, usually not exceeding two or three seconds.

The tubercles can be extruded at shorter or longer intervals and they are usually extended both at the same time. Their effect on the ants is greatest when they are fully extended and when their hair-like processes "dust" a maximum area. The tubercles and their position on the terminal segments are depicted in Fig. 5.

Several theories have been put forward with regard to the possible functions of the retractile tubercles in Lycaenidae (Claassens and Dickson, 1974). Misled by the assumption that *Al. thyra* larvae possess a honey-gland, we were originally in favour of Clark and Dickson's (1956) suggestion that the tubercles might deter ants from becoming too persistent in their efforts to obtain the secretion of the honey-gland. We

also thought it possible that the tubercles might deter insects other than ants from interfering with the honey-gland, but we are now convinced that the true function of the tubercles in *Al. thyra* larvae is a different one. Firstly, we have been unable to locate the honey-gland in the instars studied by us (we have not been able to find the first three instars). Secondly, the ants were never seen specifically to visit the area between the tenth and the eleventh segments, where the honey-gland should be situated if it were present. A collaboration between the honey-gland and the tubercles is thus excluded. In *Al. thyra* larvae the tubercles are only extruded when the larvae are active or when they are about to move. Their function appears to be to ensure the actual company of the ants while the larvae travel. The ants accompany the larvae to and from the foodplant leaving a scented trail, perhaps upon which the larvae may return to the safety of the nest after feeding. During actual feeding when the larvae are stationary, the tubercles are not repeatedly extended and the ants in contact with the larvae are not "disturbed". It is obvious that the larvae secrete an attractive substance, and although its origin and its nature could not be determined it is almost certainly an epidermal secretion, perhaps emanating from the lenticles. The activity of the ants on or close to the larvae is greater when the larvae are feeding than when they are at rest in the nest. It was therefore thought that the larvae produce their epidermal secretion more profusely when feeding and in doing so ensure the constant company of the ants, even though they are disturbed whenever the tubercles are extended.

The possibility remains that the secretion produced by the tubercles, and that presumably secreted by the epidermis, are in fact the same substances produced in different concentrations.

Further experimental evidence of the function of the tubercles

When the larvae were kept in a formicarium from which the ants had been removed, they did not occupy a definite area in the nest and after one or two days they did not return to the nest after feeding in the arena. Some stayed on the foodplant and others found shelter in a dark moist corner. When moving about they still extended their tubercles, but with no ants responding their movements became erratic.

Another observation proved once more that *Al. thyra* larvae are ant "followers". The nest containing eleven larvae and a number of ants was allowed to dry out, and another nest of which the trough was kept moist was placed nearby. This situation is depicted in Fig. 4. The ants soon found the moist trough and took their brood there. Some ants initially stayed with the larvae in the dry nest, but as conditions worsened they too, followed by the larvae, moved. Some larvae, repeatedly extending their tubercles, were seen to crawl up the wire-mesh of the arena and escape through a small opening left between the glass cover and the top edge. Accompanied by ants they reached the trough following the path

shown by arrows in Fig. 4. Eventually all larvae ended up in the moist trough from where they were seen to travel back at night to feed on the foodplant in the arena. The ants need not have followed the path chosen by the larvae because they could have taken a shorter path by moving through the wire-mesh at any place, but the larvae could only escape following the much longer path. It seemed then, that the ants found the larger opening which allowed the larvae to find a more suitable environment. When the moist trough was allowed to dry out and humidity requirements were restored in the original nest, the ants and the larvae returned.

We took into account the possibility that the function of the tubercles in *Al. thyra* larvae might be to render the ants aggressive so that they would attack insects or spiders when these approached the larvae. Small spiders, beetles, bugs, flies and other insects were individually placed in containers together with some larvae and the "host" ants. The ants reacted, upon the extension of the tubercles, in the usual way and did not show increased aggressiveness and they left the "intruders" alone. When the ants were removed from the containers and the larvae were left with their strange company which sometimes crawled over them, the tubercles were hardly ever extended. If they were extended the insects were perhaps aware of it, but they were not "upset" or frightened away.

Alate males and queens of the "host" ant did not respond to the action of the tubercles, nor did the black cocktail ants, *Crematogaster peringueyi* Emery (Myrmicinae). These ants are known to associate with several lycaenids in which the tubercles act in close collaboration with the honey-gland (Clark and Dickson, 1971). They were not interested in the larval secretion.

The behaviour of the "host" ants towards the pupae and emerging imagines

The ants visit the pupae of *Al. thyra* larvae, concentrating their activities on the areas around the spiracles which bear a limited number of dark-rimmed lenticles. If the lenticles have a secretory function, the substance they produce may be of a volatile nature as under high magnification no secretion could be noticed.

The emergence of imagines was observed on several occasions. The tiny ants, though not in any way assisting the emerging imagines, pulled on the broken pupal skin and on parts of the imago emerging from it. Once an imago had emerged it proceeded to walk around in the nest, apparently in search of the exit. After arriving in the arena it walked towards the side facing the light, and crawling up the wire-mesh, completed wing expansion. The imagines which were observed leaving the nest did not follow the path travelled by the ants and the "guest" larvae. Their movements were erratic, due perhaps to the nest being exposed to light during observation. More likely the random movement was due to the uniform

distance between the floor of the nest and its glass cover. Under natural conditions the imagines, no doubt, can only follow a definite path from the place where they emerge to the exit; that is, the path travelled by the larvae prior to pupation. Where several pupae were found under the same stone in the field, they were positioned with their anterior ends facing the exit of the nest.

The ants showed little interest in the discarded pupal shells. They visited them and scrutinised them, but their visits were of short duration and their attention mostly restricted to the external surface of the shells. This behaviour was much unlike that exhibited by certain *Camponotus* species which visit the pupal shells of *Lepidochrysops* species that associate with them, long after the imagines have emerged (Cottrell, 1965; Claassens, 1974, 1976).

Acknowledgements

The authors wish to thank Dr. J. P. Rourke, Director of the Compton Herbarium, National Botanic Gardens, Kirstenbosch, for identifying the foodplants of the larvae and the plants visited by the imagines of *Al. thyra.*

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ODONTAEUS ARMIGER SCOP. (COL.: SCARABIDAE) IN KENT. — While surveying a disused railway cutting near Kingston, Canterbury, Kent on the night of 28th June, 1977, a male specimen of this rare beetle was taken in a Heath light trap. — T. W. HARMAN, Warden, Field Study Centre, Ex Broadoak Sub-Station, Broadoak Road, Canterbury.

Collecting Lepidoptera in Britain during 1976

By C. G. M. DE WORMS, M.A., Ph.D., F.R.E.S.*

(*Concluded from p. 220*)

I was again in the Chiddingfold area on August 6th, this time en route to Kent, seeing there all the species of my previous visits with the addition of *Heodes phlaeas* L. My journey took me through Billingshurst to Haywards Heath and Mayfield, then on to Hawkhurst, then to Ashford where I put up at the well-appointed Spearpoint Hotel. My m.v. light that evening in the Orlestone woods attracted 30 species. Early arrivals included several *Harpyia furcula* Clerck. Five other Notodonts included *Pterostoma palpina* Clerck, *Lophopteryx capucina* L., *Pheosia gnoma* Fab., *P. tremula* and *Notodonta dromedarius* L. There were a good many *Drepana binaria* Hufn. and geometrids, especially *Semiothisa notata* L., *Deuteronomos alniaria* L., *D. erosaria* D. & S. and *Cleora rhomboidaria* D. & S. Mr. Dey who also ran an m.v. lamp nearby, saw in addition *Tethea or* D. & S., probably a second brood which is most unusual. The next day, the 7th, saw me at Hoads Wood, Dungeness, and Caesar's Camp, north of Folkestone, but nothing of note was moving, except a few *P. icarus.* That night at Ham Street again I had a fair number of visitors, this time at my Heath light, which as before included *H. furcula,* also *T. or, Sterrha subsericeata* Haworth, *Deuteronomos fuscantaria* Stephens, *Epirrhoë alternata* Müll. and *Agrotis puta* Hübn. Mr. Michael Tweedie's garden was my venue on August 8th, once more in very warm conditions with a number of Peacocks and many Pierids on his buddleia bushes. That night saw me for a third occasion at Ham Street when Mr. George Youden came over from Dover to join me, but we only saw some 20 species up until 11 p.m. Those not seen on the other nights were *Lymantria monacha* L., *Ligdia adustata* D. & S., *Ortholitha chenopodiata* L., and *Selenia bilunaria* L., *H. furcula, D. binaria* and *S. notata* all reappeared. I was back in Surrey on the 9th with a continuing heat wave and the thermometer in the upper 70's when I revisited Pewley Down on the 10th. *L. coridon* was nearly over, as was *P. icarus.* It was up to 82°F. in the shade when Prof. Sir John and Lady Dacie came to see me on August 12th. We had a walk on Horsell Common in the blazing sun without any wind, which seemed conducive for *Selidosema brunneata* D. & S. to be flushed in some numbers. Both sexes seemed very active and quite fresh. The thermometer remained in the lower 80's for the whole of the following week. On the 15th, Mr. Messenger came over but the Common proved much less productive than a few days before. We saw very few *S. brunneata* and only one late female Grayling. On August 21st I surveyed the downs at Ranmore where *Lysandra bellargus* Rott. had been abundant. There were still quite a lot flying

* Three Oaks, Shores Road, Horsell, Woking, Surrey.

of both sexes but not many in good condition. The second brood of *Scopula ornata* Scop. was quite numerous as was too *Aspitates gilvaria* D. & S. I was once more in King's Park Wood on the 22nd under a scorching sun. Brimstones and Meadow Browns were still plentiful and there were a few late Wood Whites and Common Blues.

The next morning, August 23rd, Mr. Messenger and I set out for the West Country and Cornwall, intending to spend the first night at Portland. But owing to a mishap to his car in the New Forest we had to return to Surrey. I picked him up the following day in my car and we travelled via Salisbury, Ilchester and Honiton to Exeter, then on via Okehampton to Tavistock where we stayed overnight. The next morning of the 25th we visited a locality where *Mellicta athalia* Rott. had been in abundance in June. The shade termperature was 84°F. which tempted out quite a lot of insects, and we recorded 11 species of butterflies which included Peacocks, Red Admirals and even Painted Ladies, with a few Small Coppers. We continued our journey via Liskeard to Truro and on to the Mullion Cove Hotel which had also been our haven in June 1974. En route we had seen a single male Clouded Yellow. The next morning of the 26th we explored the neighbourhood under still very summery conditions. Many Large Whites and Red Admirals were patronising the local buddleia bushes and were also present in numbers on valerian in the Poldhu and Gunwalloe Coves. The night was very sultry when we ran a Heath light alongside the marsh in Poldhu Cove. The chief feature was the early rush of *Hepialus sylvina* L. It was not long before a couple of dozen of this Swift were buzzling on the sheet. Another welcome visitor was a fresh *Nonagria geminipuncta* Haworth. Among a dozen other species we also saw *Thalpophila matura* Hufn., *Gortyna micacea* Esp., *Luperina testacea* D. & S., *Scopula promutata* Guen., *Lycometra ocellata* L. and the last arrival at 10.30 p.m. was a huge female *P. palpina.* That night we had inaugurated our static trap in the same site as in 1974, on the hotel lawn overlooking the high cliff. When we got back to view it, there was a seething concourse of moths flying around it. It was not long before we found a male *Herse convolvuli* L. on the wall of the swimming pool on which the m.v. light was shining. When we took our count the following morning, we estimated the number of individuals as at least 800, comprising some 40 species. There were five Convolvulus Hawks, all males, but the more interesting migrants were quite 20 *Leucania vitellina* D. & S., mostly of the cream form. There was a couple of males of the brown form of *Lasiocampa trifolii* D. & S. and a single *Leucania unipuncta* Haworth, together with several *Antitype xanthomista* Hübn., *Tholera popularis* Fab., *Peridroma porphyrea* D. & S., also some worn *Euxoa obelisca* D. & S. There was too a host of *Plusia gamma* L., at least 300. Among the geometers were a lot of *S. promutata, Epirrhoë galiata* D. & S., *Sterrha seriata* Schrank and a late *Hydriomena furcata* Thunb. We had certainly arrived at the time of a huge

immigration, as we heard later from other collectors on the Lizard. The subsequent six nights did not produce anything like the numbers of our phenomenal start, with only another 500 insects up to September 1st. There were many more *A. xanthomista* of both sexes and a single *Eupithecia phoeniceata* Rambur on August 27th. We saw in all ten *H. convolvuli,* which only included one female. When placed in a plastic container with some sea convolvulus she smothered it with some 70 ova. Most of them hatched on September 10th and young larvae were distributed among friends who, like myself, bred them up to their final instar in late October, resulting in some 35 pupae which have produced the first imagines in early December 1976 (*vide Ent. Rec.,* **88**: 336). Our exploits by day took us to the Lizard on August 27th where we counted 15 Red Admirals on a big buddleia, accompanied by three Painted Ladies, several *A. urticae* and two *Macroglossa stellatarum* L. Later on Kennack Sands the fleabane was well patronised by *P. icarus* and a few *Heodes phlaeas* L. We again saw most of these butterflies on a very warm morning at Hellford River on the 29th. The Bank Holiday on the 30th presaged a first real break in the heat spell with heavy rain before midday and an overcast afternoon, when we unearthed a full-grown larva of *Hadena barrettii* Doubleday from under a dead plant of *Silene maritima* in Poldhu Cove. The last day of the month we went over to Praa Sands beyond Helston, where again Red Admirals were in plenty on the valerian. We paid two further nocturnal visits to the marsh at Poldhu Cove. Little came to our Heath lamp on the 28th except a few more *H. sylvina* and a single *N. geminipuncta* Using the big portable m.v. light with generator there on the 31st, among 15 species were a female *Nonagria typhae* Thunb., also one of *Rhizedra lutosa* Hübn. together with *A. xanthomista, Agrotis vestigialis* Hufn., *Sterrha dimidiata* Hufn. and *Orthonama lignata* Hübn.

We set out early on September 2nd and making our way via the Saltash Bridge to Exeter and on via Lyme Regis to Dorchester and Wimborne, we reached the New Forest soon after 5 p.m. and made the Lyndhurst Park (formerly the Grand) Hotel our headquarters, but we did not venture out that night. It was still quite warm when we made a tour of the Forest via Beaulieu and were pleased to find that this area had not been ravaged by the recent heath fires. Later we called on Admiral Torlesse at Sway where a good many Whites were on the wing and a few Small Tortoiseshells. That afternoon we motored back to Surrey, first to Whitley where Mr. Messenger left me, and then on to Woking. The first few days of September were quite congenial with the temperature in the 70's during most of the first week. It was very sultry when I was in King's Park Wood on the 5th, but most of the summer butterflies had gone and only a few Speckled Woods and Commas were seen. Little too was flying when I visited Mr. Denzil ffennell at Martyr Worthy, near Winchester, on the 9th. It was distinctly cooler during the middle of September

with plenty of rain to compensate for the lack of it during the previous long spell of drought. But the temperature maintained itself in the upper 60's until the third week, when it rose to over 70°F. for several days with plenty of Pierids still flying and a good many Red Admirals about on September 26th. The following evening *Dasycampa rubiginea* D. & S. appeared on some ivy growing on a wall at Horsell. The feature of early October was the reappearance of Peacocks, chiefly attracted to michaelmas daisies and even occasionally to m.v. light-trap. There seems very definite evidence that these were the product of a second brood, since the summer emergence was already about the middle of July. These autumn weeks were very pleasant with no frost and fairly equable temperatures. On October 8th I motored to Winterbourne Stickland, near Blandford, to stay with my relatives, but little was moving there or the next day when I visited Mr. and Mrs. R. Hatton at Holt, near Wimborne, or later that day at Mr. N. G. Wykes at Uploders, near Bridport. However, *Macroglossa stellatarum* L. appeared in my relatives' garden on the 10th and there were quite a few Red Admirals on decaying fruit in the garden of Mr. G. Nixon and of Mr. D. Russwurm in the New Forest on the 11th. The congenial conditions persisted for nearly the whole of October. Peacocks were still about on the 24th, also when I accompanied the Rev. Harbottle on a visit to Dr. H. B. Kettlewell at Steeple Barton, near Oxford, on the 25th. But nothing was attracted by my Heath light on the borders of Chobham Common on the 27th.

November opened with the thermometer still in the upper 50's, with a good assortment of the later geometers coming to m.v. light. On November 5th I left for the Seychelles Islands and Kenya, returning on the 27th to find that winter had virtually set in and the season had ended on a distinctly cool note.

It had been one of the most remarkable years of the century and 1976 will long be remembered for its profusion of lepidoptera and tropical temperatures at the turn of the summer. The great invasion of *Nymphalis antiopa* L. which simulated that of 1872, together with the huge immigration of *Herse convolvuli* L. and other migrants in late August, made it a veritable *annus mirabilis* which it will take long to surpass.

LARVAE OF CUCULLIA VERBASCI L. (MULLEIN MOTH) ON BUDDLEIA DAVIDII. — On 6th July, 1977, I was interested to find several larvae of this moth feeding on *Buddleia davidii* in this district. South (1961) does not mention this pabulum although the book states that the species has been noted on *B. globosa,* the more usual foodplants being mullein (*Verbascum* sp.) and figwort (*Scrophularia* sp.). Incidentally, these larvae are particularly numerous at the moment on mulleins in this locality. — F. B. S. ANTRAM, Valley Farm, Wissett, Halesworth, Suffolk, IP19 0JJ.

Observations on British Butterflies in 1976, Part 2

By Dr. C. J. LUCKENS*

By the beginning of July the drought had become evident. On our return to the Wiltshire woods on July 1st we had to be careful not to tread on male *A. iris* as they crawled around on the track in search of moisture. We met two forestry workers in the centre of the wood who seemed interested in the butterflies and asked about "the special one that everyone comes to see". Just then, as if on cue, a superb male *iris* swept out of the oaks and settled on the track within two yards displaying its brilliant wings.

Along with good numbers of typical *A. paphia,* there was a sprinkling of *valesina.* To stand in the centre of the track and see approaching a dancing flame-coloured male paying court to a dark female flitting like a shadow down the forest corridor was a delight. In a more open part of the wood *Melanargia galathea* L. was common and a few dashing *Argynnis aglaia* L. jostled them and other satyrids for position on the tall thistles.

The heat was really intense on July 3rd when I undertook my yearly pilgrimage to Kent in search of *Plebejus argus* f. *cretaceus* Tutt. I personally do not know of any records for this butterfly of the Kent chalk since the late 60's and if it has really disappeared it is a tragedy. The genuine f. *cretaceus* is a superb form of the Silver-studded Blue and appears to be, or have been, confined to Kent, East Surrey and South Essex. I explored a former locality a few miles north of Sevenoaks but after a few hours climbing up and around the comparatively gentle slopes in the blistering sun even the prospect of finding the chalk-form *argus* paled beside the vision of cooling drinks in the shade. Even the numerous *aglaia* looked a little less vigorous than usual!

Before calling on my parents near Haywards Heath, I dropped into a wood near Lewes. There were good numbers of *paphia* and *aglaia* flying and several *camilla.* The male *paphia* for some reason were strongly attracted to lime patches beside a stream. In the centre of the wood a fritillary careering up and down a narrow ride looked and behaved like *Argynnis adippe* D. & S., but after I waited almost an hour for it to come within range it turned into *aglaia* in the net. It was definitely time to go home.

The following Friday, July 9th, I started at the Wilts. woods where I saw an excellent variety of species including *Eumenis semele* L. and several *valesina,* but not even a glimpse of *iris.* Later on in the morning I drove on to the Stockbridge downs but the weather had become unsettled. *Lysandra coridon* Poda of both sexes were already out however, and a few second brood *C. minimus. Thymelicus sylvestris* L. was particularly common. In the afternoon I took my eldest son

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to Lepe beach but we were soon driven off by lashing showers and we started to make our way home. A quick inspection of a strong New Forest colony of *P. argus* produced a mint female ab. *postradiata* B. & L. literally within seconds of our arrival. We then examined scores more, my son Kenneth doing most of the running, but no more aberrations were forthcoming.

The *coridon* on Stockbridge Down gave me some warning of the early hatch of this species and I turned my attention to the Winchester Downs most evenings. These blues were already out in great strength but variation in this locality was, as usual, absent or of a minor degree.

It was a great experience, when I arrived at Portland on July 17th at around 8.15 a.m., to see hundreds of *coridon* males sitting on the turf, their gleaming, silver-blue wings outspread to catch the early sun. Later on these males dispersed in search of mates. The easiest way to detect freshly emerged females in fact, was to look for a pile of struggling males, a loose scrum of a dozen or more, where underneath would be the female, usually already *in cop.* I met a number of entomologists at Portland. Mr. Donald Russwurm showed me a superb *ultrafowleri* which his co-collector, Mr. Mark Middleton, had boxed that morning; and Messrs. Revels and Tyler who had been there for two or three days had also done well with this beautiful var. Many of the *coridon* males were already starting to look the worse for wear though, and the following week when I returned I had the slightly frustrating experience of finding almost immediately two *ultrafowleri* both of which were in a fringeless condition and unsuitable as specimens. There were also some good *caeca* and *obsoleta* forms but I did not encounter any of the striated forewing vars. that others found there this year. I was pleased with a fair *E. semele* ab. *monocillata* Lempke.

On the way home from the first visit, a small detour took me past a clump of wych elms beside the road. Drab and ragged little butterflies imbibing from bramble blossom beneath the trees were *S. w-album.* A female that I netted looked very weary indeed but lived another eight days and obliged with about 25 ova.

We started off for Worth Maltravers on July 24th where we were to stay for the next week. We rented a cottage and in the garden was a magnificent buddleia and several luxuriant pink valerians. It was a real luxury to watch a feasting throng of butterflies, mostly *urticae, io* and *Vanessa atalanta* L. while eating our own breakfast outdoors. Occasionally *Vanessa cardui* L. and once or twice a surprise *paphia* visited the mauve flowers and there were usually one or two *semele* flitting from buddleia to white-washed wall and back again. The children were particularly fascinated by the *Macroglossum stellatarum* L. which were attracted by the valerian. Later on I found a full-grown larva of this little hawkmoth which was feeding on bedstraw.

Strangely enough *E. semele* seemed more frequent in the garden than on the neighbouring coastal downland where I explored most days. Here *M. galathea, M. jurtina* and *P. icarus* were fairly common and *Thymelicus actaeon* L. locally abundant in the cliff edge areas. *L. coridon,* however, was rather sparse and extraordinarily wild at all times of the day. My route to and from the main *coridon* ground took me along a narrow path where ivy hung from the grey stone walls and invariably two or three *C. argiolus* would flutter out as I passed by.

On July 26th I walked as far as the cliffs above Dancing Ledge and in a small combe set back a little from the sea I was pleasantly surprised to see two worn female *P. argus,* a butterfly I thought had disappeared from this part of the coast.

The first few days of August were spent in Sussex and on the 3rd an early male *L. bellargus* was flying on a steep downland slope near Lewes.

After our return to Southampton I went, on August 5th, to a secluded down not far from Winchester to which Mr. Robert Craske had directed me. *Hesperia comma* L. was whirring over the short turf in plenty, in numbers comparable to the strong colony near Stockbridge. Other species accompanied the skipper, including a few *coridon* and many *icarus* and *Lycaena phlaeas* L.

On August 6th *L. coridon* was still around in strength on the chalk near Alton Barnes—a locality famed in bygone days for the female *syngrapha* forms. These superb downs have an unmistakeably different atmosphere from the southern chalk and perhaps the stark imprints of prehistoric man which are much a feature of this area have a lot to do with it.

L. coridon was still flying in numbers on the Winchester downs and by the second week in August was joined by a very welcome sprinkling of *L. bellargus.* Two or three second brood *E. tages* were in evidence on August 10th.

The Adonis Blue was quite plentiful on a down on the Wilts./Hants. border when I went there with Dr. Tom Tolman on August 21st. The brilliant *bellargus* males were fresh for the most part and females just coming out. A few worn *semele* of a large form flitted over the thinly turfed chalk. *L. bellargus* is a favourite with my wife, but on August 28th when I took her to see this interesting stretch of downland it actually rained — the first time in this area for about six weeks! We did see a few *bellargus* in a brief period of bleary sunshine and one of them was sitting on a spray of heather which must be an unusual feeding plant for this butterfly.

The late summer butterflies must have had some difficulty in finding nectar as the torrid weather of July and August had produced desert-like conditions in some areas. Even by late July the coastal slopes in Dorset were a unicolorous raw sienna. Consequently, the season tailed off rapidly towards the end; even so 1976 must surely go down in entomological history as a remarkable butterfly year.

Lepidoptera of Aberdeenshire and Kincardineshire

By R. M. PALMER[1] and M. R. YOUNG[2]

Appendix to Parts 1 and 2

Although only three years have passed since publication of this list started, sufficient new information has been gathered to warrant an appendix. The species here include 15 new county records (these being marked with an asterisk) and 13 species listed by previous authors but not recorded recently until now. Some additional information is also included on the rarer or more local species. As a result of a further survey of the literature, one species is added although it has not been recorded recently. One species is deleted as it is now thought to have been a misidentification.

All records are those of the authors, unless otherwise stated.

Acknowledgements

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ALUCITOIDEA

Alucitidae

Alucita hexadactyla L.
K. Banchory, 1975.

PYRALOIDEA

Pyralidae

Crambus pascuella L.
A. Very rare, Aberdeen and Peterhead (Trail, 1878).
K. Banchory, one, 1975.

***Acentria nivea** Olivier
A. Loch of Strathbeg, abundant, 1975, 1976 (N.F., M.R.Y.).

Parapoynx stagnata Don.
A. Locally common. Scotston Moor and River Don at Aberdeen (Trail, 1878); Loch of Strathbeg, abundant, 1975, 1976 (N.F., M.R.Y.).

***Eurrhypara hortulata** L.
A. Dyce, one, 1975.

Pleuroptya ruralis Scop.
A. Drum Castle woods, common, 1976.
K. Durris, 1976.

***Ephestia elutella** Hb.
A. Bieldside, one, 1976 (P.S.).

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PTEROPHOROIDEA

Pterophoridae

Oxyptilus parvidactylus Haw.
K. Common at St. Cyrus N.N.R., 1975, 1976.

Amblyptilia acanthodactyla Hb.
A. Bucksburn.
K. Banchory R.T. and Mergie.

***Leioptilus tephradactyla** Hb.
K. St. Cyrus N.N.R., one, 1975 (M.H.).

HESPEROIDEA

Hesperiidae

Erynnis tages L.
Although there are few records for this species, its occurrence here and in neighbouring Banffshire (Barbour, 1976) has been known since the earliest publications on the area (MacGillivray, 1855). Additional data are: "The late Mr. Duncan took a specimen near Ballater" (W.McW.). Craig Mhor, one, at 1,200 ft., 1938; Glen Slugain, one, 1941 (D.S.).

PAPILIONOIDEA

Pieridae

Colias croceus Geoffroy
A. Denmore (Reid, 1893); Glen Muick, one, Glen Slugain, one and Balgownie, one, 1941 (D.S.).

Lycaenidae

Cupido minimus Fuessly
K. The Cove colony has not been seen for some years; a colony occurs at St. Cyrus N.N.R.

Nympahildae

Boloria euphrosyne L.
K. Glen Dye, 1976.

Nymphalis antiopa L.
Several in 1872 (Reid, 1893).
K. Near Crathes, one; nr. Banchory, one (1976). (These may have been the same specimen.)

GEOMETROIDEA

Geometridae

Scopula ternata Schrank
K. Banchory R.T.

Entephria flavicinctata Hb.
A. On the banks of Loch Callater (Cowie, 1902); Glen Callater, 1976 (M.H.).

Plemyria rubiginata D. & S.
A. Logie Buchan, one, 1975.

Hydriomena impluviata D. & S.
Abundant amongest alders (Reid, 1893).
K. Bridge of Bogendreep, 1975.

Perizoma affinitatum Steph.
A. Rare, Inverurie and Peterhead (Reid, 1893); Udny, one, 1974; Gight, 1975; Dyce, one, 1976.
K. St. Cyrus N.N.R., one, 1976.
P. minorata ericetata Steph.
A. Glen Callater and Foveran (nr. Newburgh), 1975.
P. blandiata D. & S.
A. Glen Derry (Cowie, 1902); Braemar, 1976 (M.H.).
K. St. Cyrus N.N.R., 1975, 1976.
Eupithecia pygmaeata Hb.
K. Common at Muchalls and St. Cyrus N.N.R.
E. indigata Hb.
K. Glen Dye, one, 1975.
E. abbreviata Steph.
A. Common at Ballater, 1976 (D.B.).
E. lariciata Frey.
A. Tyrebagger Hill, 1976.
K. Mergie and Bridge of Bogendreep, 1975.
Lobophora halterata Hufn.
A. Ballater, 1976.
***Semiothisa clathrata** L.
K. St. Cyrus N.N.R., one, 1975.
***Epione paralellaria** D. & S.
A. Near Balmoral, 1975, 1976.

SPHINGOIDEA

Sphingidae

***Hyles lineata livornica** Esp.
A. Aberdeen, one, 6.ix.43 (D.S.).
Deilephila porcellus L.
A. Fintray, one, 1975 (N.F.); Udny, 1975, 1976; Whitecairns, 1976.

NOTODONTOIDEA

Notodontidae

Phalera bucephala L.
A. Udny, 1975; Gight and Benachie, larvae on alder, 1976; Dyce, ova and larvae on apple, 1976.

NOCTUOIDEA

Lymantridae

Dasychira fascelina L.
Delete square brackets around Cambus o'May, Dinnet (*Ent. Rec.*, **86,** 41).
Euproctis similis Fuessly
A. Aberdene, one (Trail, 1878).
K. Kineff, one, 1945 (D.S.).

Arctiidae

Eilema lurideola Zinck.
A. Kemnay, one, 1972 (G.D.). In addition to being the first Aberdeenshire record, this appears to be the first inland record from N.E. Scotland, where this species is generally confined to coasts.

***Spilosoma luteum** Hufn.
A. Turriff, two, 1972 (D.G.); Dyce, one, 1975.

Noctuidae

Euxoa obelisca D. & S.
K. Muchalls, 1976 (E.C.P.-C., R.M.P., M.R.Y.); Cove, 1976.

***Agrotis ripae** Hübn.
A. Blackdog links, 1975, a few larvae.
K. St. Cyrus, 1974 (discovered by M.H. as larvae and adults). Subsequently larvae were found abundantly and adults were also found in 1976.

Eugnorisma depuncta L.
A. Not uncommonly near Kildrummy (D.S.); Causeyton, nr. Monymusk; Drum Castle woods, 1976.
K. Durris, 1976.

Paradiarsia sobrina Dup.
K. Banchory R.T., one, 1974.

Eurois occulta L.
A. Udny and Causeyton, 1976.

Anaplectoides prasina D. & S.
A. Udy, 1976.
K. Maryculter, 1975.

Lacanobia biren Goeze
Delete record from Ballater (*Ent. Rec.*, **86,** 275).

Hadena rivularis Fab.
A. Udny, 1976.

H. confusa Hufn.
A. Udny, one 1975, one 1976.

[Tholera decimalis Poda. Recorded by MacGillivray (1855) but with no locality and there have been no subsequent records.]

Panolis flammea D. & S.
K. Banchory R.T., 1975.

Mythimna litoralis Curt.
A. Murcar Links (Cowie, 1902).
K. St. Cyrus N.N.R., one, 1974; several, 1976.

M. comma L.
A. Udny, 1975, 1976.

Cucullia umbratica L.
A. Near Kildrummy, common, 1976 (D.S.).

Xylena exsoleta L.
A. Udny, common, 1976.
K. Banchory, 1976.

Dichonia aprilina L.
K. Banchory, one, 1976.

Dryobotodes eremita Fab.
A. Inverurie, one, Pitcaple, one (Reid, 1893). Ballater, larvae common on oak, 1976.

Atethmia centrago Haw.
A. Udny, 1975 and 1976; Causeyton, 1976.

***Omphaloscelis lunosa** Haw.
K. Muchalls, 1976 (E.C.P.-C., M.R.Y., R.M.P.).

***Xanthia citrago** L.
A. Udny, one, 1975.
K. Banchory R.T., one, 1974.

Acronicta menyanthidis Esp.
K. Kinneff, 1975.

A. euphorbiae myricae Guen.
A. Delete Ballater record on *S. aizoides* (*Ent. Rec.*, **86,** 279); add Udny, 1975.

***Mormo maura** L.
A. Aberdeen, one, 1976 (caught by Mark Allan).

Cosmia trapezina L.
A. Drum Castle woods, common, 1976; Udny, one, 1976.
K. Durris, 1976.

Apamea unanimis Hb.
A. Udny, 1976.
K. St. Cyrus N.N.R., one, 1975 (M.H.).

***Photedes elymi** Treits
K. St. Cyrus N.N.R., common, 1976.

Amphipoea crinanensis Burrows
K. Muchalls, 1976.

***A. fucosa paludis** Tutt.
K. Muchalls, one, 1976 (E.C.P.-C.).

Celaena leucostigma Hb.
K. Maryculter, one, 1975.

Rhizedra lutosa Hb.
A. Udny, common, 1976; Causeyton, 1976.

Athetis pallustris Hb. The specimen labelled as such in the Duncan collection, Aberdeen University (Duncan, 1908) has now been examined by E.C.P.-C. It is in poor condition and the abdomen is missing but the consensus of opinion is that it is an unusual female *Photedes minima* Haw. (E.C.P.-C., R.M.P., M.R.Y.).

Pyrrhia umbra Hufn.
K. St. Cyrus N.N.R. (Gunning, 1896); two, 1976.

Pseudoips fagana Fab.
A. Aberdeen, one, 1976.

Syngrapha interrogationis L.
K. Banchory R.T., one, 1976.

Catocala fraxini L.
A. Culter, one; Derncleugh, one, 1890 (Reid, 1893); Ellon, one, 1976; Aberdeen, one, 1976.

Scoliopteryx libatrix L.
A. Fintray, one, 1975; Udny, Causeyton, 1976.
K. Banchory, one, 1975.

***Polypogon nemoralis** Fab.
A. Fintray, one; Stoneywood, one, 1974 (R.M.P.); Denmore, one, 1975 (P.G.-S.); Bucksburn, one, 1976 (R.M.P.); Bennachie, one, 1976 (M.R.Y.).
K. Banchory R.T., one, 1976.

The Status in Britain of *Stigmella speciosa* (Frey) and *S. aceris* (Frey) (Lep., Nepticulidae)

A. M. EMMET*

The account given by Lord Walsingham (1916) of his discovery of *Stigmella speciosa* (Frey) in Britain makes entertaining reading. On the 22nd August, 1914, when a guest at Emery Down, near Lymington, Hants., he was sitting in the garden under a sycamore when he noticed a nepticulid larva "descending from the tree", presumably by means of a silk thread. He secured it and then found two others. He knew the larvae could not be those of *Stigmella* (now *Etainia*) *sericopeza* Zeller, as the tree was a young one and lacked keys; so he started to search for mines in the leaves. Having failed at ground level, he had another look from the upstairs windows, since the tree was growing close to the house. Again he drew a blank. Many entomologists would have abandoned the quest at this point, but not Lord Walsingham. He instructed the gardener to collect the leaves when they fell in the autumn and send them to him in London. His perseverance did not meet with the success it deserved, for he failed to find a single mine in the consignment.

He placed his larvae in a bottle where they duly spun cocoons. For a time he watched them eagerly hoping for the emergence of an adult. Since none appeared, in the course of time his interest waned and the bottle was forgotten. It was not until 1916 that he took it up again, and found to his chagrin that it contained a dead imago. He did not attempt to relax it but gummed it to a card and placed it in the collection at the British Museum (Natural History). He duly wrote a paper describing it as *Stigmella speciosa* (Frey), an addition to the British list.

No further larvae were found and Meyrick (1928) was unable to quote any locality for *S. speciosa* other than Lymington, Hants. The next mention of the species in our literature was when Wakely (1962) recorded that he, in company with L. T. Ford and our editor, had found nepticulid mines of two patterns in sycamore leaves at Mickelham, Surrey. These were sent, via Mr. S. C. S. Brown, to A. G. Carolsfeld-Krausé in Denmark, who pronounced that they belonged to two species, *S. speciosa* and *S. pseudoplatanella* (Skala), the latter being new to Britain. Wakely stated that he had known that we had a nepticulid mining sycamore since August 1957, when he had found a tenanted mine at Ockham Common which produced a parasite. Since Wakely's records, mines of *S. speciosa* have been observed elsewhere in south east England, principally in the counties of Kent, Surrey and Hampshire, but few imagines have been reared. We know that *S. pseudoplatanella* is a mine-form of *S. speciosa* and not a distinct species.

* Labrey Cottage, Victoria Gardens, Saffron Walden, Essex.

Let us leave *S. speciosa* for the moment and consider another *Acer*-feeding nepticulid, *Stigmella aceris* (Frey). This species was placed on the British list by Jacobs (1962) on the evidence of five vacated mines on field maple (*Acer campestre*) which he had found near Malling, Kent, on the 20th August, 1949. There was no other record until the 20th October, 1971, when I found three vacated mines at Lullingstone, Kent (Emmet, 1971). During the next few years I made several visits to the same locality and searched thoroughly, but always without success.

While I was researching into the Nepticulidae for my contribution to *The Moths and Butterflies of Great Britain and Ireland* (Heath *et al.*, 1976), I read Lord Walsingham's paper on *S. speciosa,* and was immediately convinced that the species he had then discovered was in fact *S. aceris.* My opinion was based on two facts. First, Lord Walsingham described his larvae as "bright green". That is the colour of the larva of *S. aceris,* whereas that of *S. speciosa* is yellow. Lord Walsingham writes: "I have a note that the larvae were bright green—Heinemann describes the larva of *speciosa* as greenish amber-yellow." My second reason was that Walsingham stated that the head of the imago was black, adding that it had also been described as rust-red. To the best of my knowledge, the head of *S. speciosa* is always red whereas that of *S. aceris* is always black. A third factor suggesting that the Lymington specimen was *S. aceris* was Walsingham's failure to find any mines. We know that they must have been there, but the mines of *S. aceris* are particularly hard to detect, the gallery being completely filled with greenish frass concolorous with the leaf.

I had a look at the specimen in the British Museum, but my examination was inconclusive. The abdomen was concealed by the wings and it was impossible to tell the moth's sex; apart from the black head, it looked very much like *S. speciosa.* Consequently, in my accounts of the two species (Heath *et al.*, 1976: 225 and 254), I voiced my suspicions but left the matter unresolved.

The next event in this story was the finding by Mr. S. Whitebread of a leaf of Norway maple (*Acer platanoides*) near Edenbridge, Kent, which bore three mines of *S. aceris*; two were vacated and the third contained a dead larva. He made his discovery in October 1975, and kindly gave me full particulars of the locality. I reconnoitred the site in May 1976, but did not have the opportunity to search for mines until the 3rd September. To my amazement, they were present in profusion, often several to a leaf, the record being seven. Some were on the mature trees, others on saplings growing in a hedgerow nearby, and others again on a field maple which was as heavily infested as the Norway maples. There was also a young sycamore in the area, but I could not find any mines on its leaves, although *S. aceris* has been recorded on sycamore on the Continent. We were much too late, and out of literally hundreds of mines examined only two contained

larvae. One of these was visibly parasitized; the other looked healthy but later spun rather a flimsy cocoon, and I am almost certain that I can see parasite rather than a pupa within.

However, now that I had seen the bright green larva, so different from that of *S. speciosa,* I was more convinced than ever that Lord Walsingham's moth was *S. aceris.* I discussed my views with Dr. J. D. Bradley of the British Museum (Natural History) and he agreed to dissect the specimen. By good fortune, it turned out to be a male. Beirne (1945) depicts neither species, but reference to Petersen (1930) who depicts both established with complete certainty that it was *S. aceris.*

Let me go back to the time when I was describing these species for MBGBI. I found myself then in a quandary: Should I accept Lord Walsingham's historic specimen as *S. speciosa* and adapt my text accordingly, or should I back my own judgement and base my description on the material in my own collection? As might be expected, I compromised. Where Meyrick had described the head of *S. speciosa* as ferruginous to black, I wrote "ferruginous, less usually black"; but when it came to the larva of which Meyrick had written "greenish yellow or green", following Walsingham, I rebelled and wrote "larva pale yellow", knowing myself to be right. Those who now wish to emend their text of MSGBI should make the following corrections: —

p. 225 col. 1. *Imago* l.2. Delete "or, less usually black"
col. 2. *Distribution,* l.2. Delete "there is a possibility that"
p. 254 col. 1. *Distribution,* ll.3-4. For "It is, however, possible that" read "However"
ll.14-15. Delete "but an examination of it proved inconclusive".

In the key to species (imagines) emend as follows: —

p. 180 col. 1. ll.3-4. Delete *in toto.*

Even then the key will not be wholly accurate, because *S. aceris* was paired with *S. tengstromi* (Nolcken) of which, when I wrote, there was no authentic British specimen; moreover, far-reaching confusion prevailed in the literature. But that is another story.

My account of the distribution of *S. aceris* in Britain is not yet concluded. At the end of October, Dr. M. Harper showed me mines which he had found in leaves of field maple in his garden near Ledbury, Herefordshire. These undoubtedly belonged to *S. aceris.* It has now been recorded from Hampshire, Kent and Herefordshire (vice-counties 11, 16 and 36). It appears to be one of those species which is extremely local but may be abundant, at any rate temporarily, within a restricted area.

At present, Walsingham's unset moth is the only British specimen, but 1977 should produce a bred series for our collections and fuller information about the life-cycle in Britain. All we know is that the larvae are full-fed in August. During my visit to the Kent locality I saw a nepticulid running

over the leaves of a Norway maple. It scuttled away before I could secure it, but, thinking that it might have been an ovipositing female *S. aceris,* I paid another visit in early October to see if there was a later generation of larvae; however, there was no sign of fresh mines on the maples.

I would like to conclude my remarks on *S. aceris* with a tribute to Lord Walsingham's integrity as a scientist. It was natural enough for him to jump to the conclusion that the nepticulid he had bred from a larva on sycamore belonged to the species primarily associated with that foodplant. However, he found awkward discrepancies between his own observations and the account of the species in the literature. He made no attempt to gloss these over or explain them away: on the contrary, he gave them full prominence. Had he not done so, his mistake would never have been detected.

I now return to *S. speciosa.* The first British record now appears to be that made by the late Stanley Wakely on Ockham Common in August 1957. The present distributional pattern of the species and the rapidity with which it is spreading indicate that it is a relatively new arrival in Britain, and that it entered the country via south-east Kent. I have a romantic turn of mind and like to think that when the might of Hitler's armies was poised to strike and nothing stood in their way but British defiance, this little invader succeeded where Hitler failed. Having established a bridgehead near our channel ports, it has advanced across our country on a broad front. By the end of 1975, it had occupied every county south and east of a line from the Wash to Portland Bill. In 1976, two salients have been observed, one in Leicestershire and the other in northern Wiltshire, undoubtedly the start of a pincer movement aimed at the industrial midlands. There seems to be no climatic impediment to its further advance and in the course of time, this attractive species may establish itself throughout Britain.

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Post Hibernation Appearance of the Camberwell Beauty (*Nymphalis antiopa* L.) in 1977, and some Additional Records for 1976

By J. M. CHALMERS-HUNT*

Records of occurrence in March, April and May 1977

There have been nine reports of post hibernated *antiopa* for 1977. Curiously, with only one exception, these are all for western areas, and to my knowledge the butterfly did not reappear in any of the eastern counties where it was seen in such numbers in 1976.

CAERNARVONSHIRE. Penmaenmawr, May 1st, one captured by M. and G. Williams who then liberated it (E. Hardy).

CHESHIRE. Between Thurstaston and Frankby, March 19th, one seen for several minutes at rest on the ground (W. T. C. Rankin *per* A. Creaser). Eastham Country Park, May 18th, one seen for several minutes at rest and in flight in a birch clearing (C. Marshall *per* A. Creaser).

MONTGOMERYSHIRE. Mochdre, Newtown, May 2nd, one seen by R. Lovegrove (T. Cleaves).

RADNORSHIRE. Elan Valley (GR 925644), May 17th, "I had good views of one . . . on a steep heather-clad slope sheltering from the wind behind a stone wall" (T. R. Cleeves).

SURREY. Leatherhead, May 22nd, one captured in a car park in the valley of the river Mole, and retained as a specimen (D. C. Davies).

WARWICKSHIRE. Nuneaton, April 4th (Hoare, *Ent. Rec.*, **89**: 155).

WESTMORLAND. Below Nab Scar, Rydal Water, April 15th, one seen at noon by R. Beeby (Heath, *Ent. Rec.*, **89**: 155).

WORCESTERSHIRE. Upton Warren Nature Reserve, April 3rd, one seen by A. F. Jacobs (Green, *Ent. Rec.*, **89**: 155).

Additional records for 1976

I received a number of reports of the occurrence of the Camberwell Beauty in 1976, but too late for inclusion in my paper published in April. Most of these were the result of a request published in *B.T.O. News.*

BUCKINGHAMSHIRE. Aston Clinton, about September 12th (N. E. Gammon).

CAMBRIDGESHIRE. Over, September 3rd, one found alive in a bungalow having entered through an open window (P. M. Warrington).

DORSET. Southbourne, August 22nd (E. H. Hardy *per* C. J. Gent).

HERTFORDSHIRE. Potten End, near Berkhamstead, August 31st (Mrs. Smith *per* N. E. Gammon).

KENT. Murston, October 16th, one (E. Philp).

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LANCASHIRE. Leighton Moss R.S.P.B. Reserve, Silverdale, August 25th, one seen flying over reed beds by R. Thompson (J. Briggs). M6 Motorway, near Preston, August 26th (P. A. Luker). Burnley, August, one seen by M. Reuben Jackson (D. Jackson). Crosby, August, feasting on rotting pears in garden (Dr. E. E. Cooke).

MERIONETH. Coed y Brenin Forest, near Capel Hermon above Dolgellau, mid-August, one seen by T. Simpson (E. Hardy).

NORFOLK. Blakeney Point, August 23rd, one flushed by C. Heard and R. Grimmett from *Sueda* (R. Grimmett). Cley next the Sea, September 6th (G. White).

SUFFOLK. Minsmere, August 20th, at about 11 a.m., one at rest on a bush on the beach (Dr. L. L. J. Vick). Minsmere, September 6th, one seen flying along a woodland ride by Mr. and Mrs. C. Massingham, Mr. and Mrs. A. J. Bulman and J. Cudworth (J. Cudworth).

SURREY. Witley, September 7th (A. Denby Wilkinson *per* C. J. Gent). St. Martha's Hill, near Guildford, September 18th (A. E. King).

WESTMORLAND. Knock, near Appleby, August 29th, one seen on an apple trunk by Mrs. D. Hinchcliffe (Prof. Tinbergen and Rev. J. H. Vine Hall *per* J. Briggs).

YORKSHIRE. Leeds, August 24th, one seen on buddleia in Gledhow Lane (C. S. V. Yeates). Runswick Bay, August 28th, one seen by G.R.P. in his garden (G. R. Posthill). Hornsea, September 8th, one seen by Mrs. S. Harris in her garden (R. G. Hawley).

Acknowledgments

I do thank all those mentioned above who so kindly sent me their reports. I am also grateful to Mr. David Glue, editor of *B.T.O. News,* and Miss Linda Bennett, *R.S.P.B.* editor, for publishing my request for information.

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Chalmers-Hunt, J. M. 1977. The 1976 Invasion of the Camberwell Beauty (*Nymphalis antiopa* L.). *Ent. Rec.,* **99**: 89-105, folding distribution map, 3 figures.

HEMARIS FUCIFORMIS L. (BROAD-BORDERED BEE HAWK-MOTH): A SECOND BROOD IN SUFFOLK IN 1976. — This insect was first seen in my garden on 22nd May, 1976 and a friend, Mr. Clive Naunton, found many small larvae at Dunwich in early June. On 25th July I took a moth over buddleia in my garden and saw another a few days later. Mr. Jeremy Sorensen, the warden at the Minsmere R.S.P.B. Reserve, saw four moths over buddleia during August and September. When I queried his identification he was able to produce a transparency which showed the body of the moth to be that of *fuciformis.* It would seem therefore that there was at least a partial second brood in 1976. — H. E. CHIPPERFIELD, Walberswick, Suffolk.

The great Cornhill fire and the demise of the first Aurelian Society

By Dr. RONALD S. WILKINSON*

One of the most familiar accounts in the history of British entomology is that of the demise of the "first" Aurelian Society, apparently the earliest organised entomological society in England (although prior groups of naturalists had pursued entomology as part of their total activities). The precise cause of the dissolution is stated by Moses Harris in *The Aurelian* (London [1758]-66). He was introduced to the study of insects by his uncle, also named Moses Harris, a member of the Society, which held its meetings "at the *Swan Tavern,* in *Change-Alley",* London. However, the nephew was not of sufficient age for admission to the Aurelian Society, and was "deprived of that Pleasure" by a subsequent calamity:

" . . . not long after the great Fire happened in *Cornhill,* in which the *Swan Tavern* was burnt down, together with the Society's valuable Collection of Insects, Books, *&c.* and all their Regalia: The Society was then sitting, yet so sudden and rapid was the impetuous Course of the Fire, that the Flames beat against the Windows, before they could well get out of the Room, many of them leaving their Hats and Canes; their Loss so disheartened them, that altho' they several Times met for that Purpose, they never could collect so many together, as would be sufficient to form a Society."

Research into contemporary sources has revealed more information about the great Cornhill fire and the Aurelian tragedy. A typical account of the disaster is that given in the London *Daily Advertiser* of 26th March, 1748:

"Yesterday Morning, about One O'Clock [i. e., 1 AM, 25 March], a Fire broke out at Mr. Eldridge's, a Peruke-Maker, in Exchange-Alley, which consum'd several Houses in the said Alley, Birchin-Lane, and Cornhill; but the Wind being South-South-West, all the Bankers Houses in Lombard-Street, and their Effects, are safe. No publick Office has been burnt, except the London-Assurance . . . Garraway's, the Jerusalem and Jonathan's Coffee-Houses, the Swan Tavern, with the rest of the Houses in Change-Alley, are destroyed, except Baker's and Sam's Coffee-Houses, which are greatly damaged. The Flames extended themselves into Cornhill . . . It's said, by People well acquainted in the Neighbourhood, that upwards of 160 Houses were burnt down."

The sources agree that the fire began well after midnight, in the early morning of 25th March, at a distance in Exchange-Alley from the Swan Tavern. Despite the wind and the ferocity of the blaze, it would have been a little while before the "Flames beat against the Windows". Why, then, were the members of the Aurelian Society "sitting" in the tavern at such an hour? The answer would seem to lie in the eccentricities of the eighteenth-century calendar.

* The Library of Congress, Washington, D.C. 20540; The American Museum of Natural History, New York, New York 10024.

In 1748 the official year in Great Britain began on 25th March, not 1st January. Due to reform in the sixteenth century, the old Julian calendar was gradually supplanted in Europe by the Gregorian, which meant beginning the new year in January rather than March. Because Protestant countries considered the Gregorian calendar a "Popish innovation" and only slowly accepted it, there was considerable confusion in dating. This was heightened by the Gregorian correction to solar time, so that, for example, 28th December, 1651 in London would be 7th January, 1652 in Paris. Dates between 1st January and the new year were often written with both "old" and "new" style years to avoid confusion (e.g., 12th March, 1720/1), but not until 1752 were eleven days omitted from that year to begin "new" style dating in the British Isles. In custom, there were two "new years" in England; for some time various celebrations had been held for the January date (Brand, 1853), but the "old" style was commemorated as well in 1748; as the sources of the time demonstrate, the eighteenth-century Englishman took what opportunity he could to raise his glass.

When the flames reached the Swan Tavern in the early hours of New Year's morning, the Aurelian Society was still in attendance, and it is only reasonable to suppose that its members were there because they were still toasting 1748. (Lest some entomologists become dismayed, we should recall those bibulous meetings of Edward Newman and his friends at that popular watering-place for insect-hunters, the Bull Inn, Birch Wood Corner, so celebrated in the nineteenth-century *Entomological Magazine*.) The Swan was burned before dawn, and in the following weeks the London press did not fail to notice the results of the disaster; it was, as one would say today, a "lead story". In the *Daily Advertiser,* an appeal was made for funds to aid the victims of the great Cornhill fire, and such notices ran for several months. The ruins of the Swan Tavern were eventually sold as real estate, and it would be some years before the younger Moses Harris and his fellow enthusiasts would found the "second" Aurelian Society.

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CORRECTION

Reference my article "The Macrolepidoptera of Eastbourne" in the February issue (*antea,* p. 36), I regret I included *Euxoa cursoria* Hufn. in error. This species should therefore be deleted. — M. HADLEY.

LETTER TO THE EDITOR

Dear Sir,

I can have little sympathy with Mr. D. C. G. Brown over the loss of his mercury vapour equipment as reported in "Collecting in the Hot Summer 1976" (see *Ent. Rec.*, **89,** No. 4).

One cannot of course condone vandalism, but I find it completely reprehensible that two persons should, throughout the season, operate eight light traps and three actinics on each collecting occasion. This is the sort of activity which gives collectors the reputation of racing from locality to locality in search of rare insects, with no object other than to fill cabinets with rows of specimens.

The Wyre Forest is now closed to collectors, because in the words of the Head Forester at that time, "hundreds of moths have been killed by someone using numerous light traps". Could it be eight light traps and three actinics? On his own admission Mr. Brown was there in 1975 (see "Collecting Diary, 1975", *Ent. Rec.*, **88,** No. 3). The ban was certainly in operation then and was being respected by entomologists in this area.

In my view, traps should only be used on ones own property or for genuine scientific research. Normal collecting should be carried out with a tripod lamp and sheet, where a proper degree of selectivity can be practised. On no account should this be left unattended, so that if the police or other authorised person should investigate the light, a proper and courteous explanation can be given for ones presence and details of permission obtained be quoted. — N. E. TURNER, J.P., F.C.I.S., "West Winds", 20 Skip Lane, Walsall, West Midlands.

Notes and Observations

PHOTEDES EXTREMA HBN.: CONCOLOROUS (LEP.: NOCTUIDAE) IN KENT. — While collecting and recording lepidoptera with Mr. Brian Elliott on the night of 2nd July, 1976, at Dungeness, Kent, I boxed a small wainscot which looked rather strange. After being taken off the setting board, it was still difficult to identify positively so was shown to Mr. D. S. Fletcher (Br. Mus. (Nat. Hist.)), who kindly pronounced it as *P. extrema,* although a somewhat aberrant specimen. This would appear to be the first authentic record for Kent and it is interesting to consider the possibility of the species being resident in the county. That particular night was remarkable for the vast assemblage of moths, a total of 94 species of macrolepidoptera being noted, surely a near record for Dungeness? — T. W. HARMAN, Warden, Field Study Centre, Ex Broadoak Sub-Station, Broadoak Road, Canterbury.

UNUSUAL FEEDING OF BLASTOBASIS DECOLORELLA WOLLASTON (LEP.: BLASTOBASIDAE). — In November 1976 I was examining a small potted Cowberry (*Vaccinium vitis-idaea* L.) on which cases of *Coleophora vitisella* Gregson were overwintering. Two leaves of the plant were spun together, and there were obvious signs of larval feeding. I assumed this was the work of *Cacoecimorpha pronubana* Hbn., which often occurs in the garden, and therefore ignored it. The larva was still feeding in February, but shortly after it vacated the spinnings and pupated in a tough cocoon amongst the roots of the plant, producing a fine specimen of *Blastobasis decolorella* in mid May.

The literature quotes "vegetable rubbish and dead insects" as the larval pabulum, although the larvae have been found attacking stored apples (Jacobs, *Ent. Rec.*, **86**: 27) and in captivity have been reared on sallow and bramble leaves (Jacobs, *loc. cit.*) and catkin buds (Jacobs, *Proc. S. Lond. ent. nat. Hist. Soc.*, **1948-49**: 127). I can find no record of the feral larva being found on "living" leaves. The moth itself is a regular visitor to the garden trap. — P. A. SOKOLOFF, 4 Steep Close, Orpington, Kent.

LYCAENID PUPAE THAT MIMIC ANTHROPOID HEADS. — Some time ago Professor Hinton (1974, *J. Ent.* (*A*), **49** (1): 67-70) added two more Lycaenid species, whose pupae he alleged mimiced the heads of monkeys. I have been hoping that someone with South American experience would comment on this, but nobody has.

I personally feel that these claims of mimicry of monkeys' heads by Lycaenid pupae are very far fetched and that there are much simpler and more probable comparisons.

Taking the original species for which this form of mimicry was claimed, *Spalgis lemolea* Druce, there has always been the alternative theory that the model was a bird dropping. When I was in Uganda some years ago, I bred considerable numbers of this species and the resemblance to a bird dropping was, to me, unmistakable. The late T. H. E. Jackson (1937, *Trans. R. ent. Soc. Lond.*, **86**: 201-238) was of the same opinion. The resemblance in living specimens is much enhanced by the pupa having a polish, which is lost in dried specimens, giving the appearance of moisture.

Turning to the new species, the South American *Fenisca tarquinius* F. has a black pupa and the Oriental *Spalgis epuis* Westwood a yellowish orange one. In East Africa we have a small lycaenid, *Euchrysops barkeri* Trim., which has a black pupa, which closely resembles the dropping of a bat or mouse. The black pupa of *tarquinius* is little more than a stouter version of the black pupa of *barkeri*, and, in my opinion, is far more likely to mimic the dropping of some small mammal such as a squirrel.

The yellowish orange pupa of *epuis* bears a very strong resemblance to the pupae of many species of Coccinellid beetle, which are protected by their pungent smell.

Turning to the other side of the coin, whilst I can accept that an insect flying close by can be mistaken for a similiarily marked, but larger, species flying further away, I cannot accept that an insectivorous bird, foraging amongst foliage, can possibly mistake a small pupa, within an inch of its eyes and which it can quite easily swallow, for a monkey's head, which, in many cases, would be as large or larger than the bird itself. Apart from other considerations, decapitated monkey's heads do not usually occur, and I am sure that a bird's conception of a monkey is the beast complete with head, body, limbs and a tail, and something that is for ever on the move. I cannot believe that a bird that can spot a flying ant or termite several feet away at dusk, or which can distinguish a small, grey, stick-like geometer larva, swinging at the end of its thread several yards away from an actual piece of twig, is going to be bamboozled as Professor Hinton would have us believe. — D. G. SEVASTOPULO, F.R.E.S., P.O. Box 95026, Mombasa, Kenya.

THE PINCUSHION RISES AGAIN. — In a 1975 contribution to the *Record* ("The Rise and Fall of the Pincushion", **87**: 142-146), I traced the curious role of the pincushion as an item of entomological collecting equipment from the seventeenth century to the first decades of the twentieth, and suggested that by the nineteen-twenties it was an anachronism on the Continent, used only by a few older entomologists to carry pins in the field. It is always dangerous to make such assumptions, for our brethren of the net have a way of continuing to draw upon old traditions while taking advantage of new methods. So, I should not have been surprised when, shortly after the appearance of my paper, I received a letter from my friend Professor Alexander B. Klots, announcing that "the pincushion is *not* dead".

Dr. Klots, who attended the International Congress at Vienna (1960), supported his assertion by a colour transparency he had taken there of a Catholic father in brown habit, wearing a modern version of the pincushion. By reference to the list of participants in the *Verhandlungen XI. Internationaler Kongress für Entomologie* (Vienna, 1960), and elimination of candidates by further correspondence with Dr. Klots, the subject was eventually recalled to be the German entomologist, Fr. Sigbert Wagener. In Dr. Klots' words, Fr. Wagener had "pendant over left breast a large, rectangular piece of thick felt, into which a number of insect pins were thrust. On some of these were the Zygaenidae that he was catching. As we know, these are highly resistant to cyanide, of which their blood contains a high percentage. They just keep buzzing around in cyanide jars". Fr. Wagener was smoking a cigar, and his technique, which he communicated to Dr. Klots, was "to pin a specimen immediately with a pin that he first pushed through the very wet end of the cigar. This juice did the trick on the zygaenids almost immediately".

I have not been able to query Fr. Wagener further about his method, but I would now be the last to deny the possibility that somewhere an entomologist might still be using the ancient pincushion in the field, as well as the established nineteenth-century method of killing insects by injection with tobacco juice. I am grateful to Dr. Klots for permission to quote from his letter, and a print from his transparency has been provided to the Editor of the *Record*. — Dr. RONALD S. WILKINSON, Library of Congress, Washington, D.C. 20540; The American Museum of Natural History, New York, New York 10024.

A POSSIBLE NATURAL HYBRID BETWEEN NUDAURELIA ZAMBESINA WLK. x N. SAID OB. — Reverting to my previous note under this heading (1977, *Ent. Rec.*, **89**: 42), in August 1976 I found a large batch of newly hatched larvae, similar to those described, on an Oleander in my garden. The larvae were left to feed up *in situ* and, when they were fully fed and starting to wander in search of pupating sites, some 15 or 16 were collected and placed in a large trough of soil to pupate.

Emergence was most protracted (I still have one living pupa) and erratic, never a pair emerging on the same day, and all the early imagines were typical *zambesina* in appearance. However, on 17.iii.77 a female emerged that lacked the dark crimson basal patches, although the ground colour was the silvery green of *zambesina*. She was placed in a large assembling cage and exposed for three nights, during which time she attracted many males, all typical *zambesina*. Then, on the morning after the third night, she was allowed to pair with one of the assembled males, as it was feared that if pairing was further delayed she might start laying unfertilized eggs. The pair remained *in cop* for the best part of 24 hours and appeared to have considerable difficulty in separating. The female then laid a large batch of eggs, that proved to be infertile, and died.

It would seem, therefore, as is so often the case, that whilst the original interspecific cross is fertile, the back-cross parent species x hybrid is not. — D. G. SEVASTOPULO, F.R.E.S., P.O. Box 95026, Mombasa, Kenya.

DEILEPHILA ELPENOR L. ON THE ISLE OF CANNA. — On the morning of 25th June I found a perfect specimen of the Elephant Hawk Moth in my mercury vapour trap, the first time the species has been found here. It seems to be spreading in north-west Scotland, as last year a caterpillar was found at Morar, and I am told that a specimen of the moth was found at Mallaig this summer. My friend Mr. Peter Wormell of the Nature Conservancy tells me that the moth was common in Argyllshire last year and is turning up again this one. The capture came at the end of ten days of perfect weather. Since the middle of May we have had two such spells, interspersed with a number of days with cold dry northerly winds. Nothing

else unusual has turned up, but for the first time a spring brood — just two or three — of *P. aegeria* has been noticed here. *B. selene* and *C. rubi* have been noticed again for the first time for two or three years; but there has been no sign so far of the usual migrants. — J. L. CAMPBELL, Isle of Canna, Hebrides.

THE MARSH OBLIQUE-BARRED: HYPENODES TURFOSALIS (WOCKE) (LEP.: NOCTUIDAE) IN KENT. — While on a visit to Hothfield Bog near Ashford on the 12th July, 1977, I netted a small female noctuoid in fresh condition, which turned out to be the local *Hypenodes turfosalis*. This species has a wide range in Britain, but to my knowledge has never before been noted in Kent. — J. M. CHALMERS-HUNT.

Current Literature

The Forth Naturalist and Historian, Vol. 1, 1976. Central Regional Council, Stirling. 176 pp., £1.00.

The preface points out that the Transactions of the Stirling Natural History and Archeological Society ceased publication on the outbreak of the second world war, and with the exception of the Survey, edited by Professor Timms in 1974 for the visit of the British Association to Stirling University, virtually nothing has been published since 1939, although this part of Scotland contains much of interest.

The volume contains ten papers; five on ornithological subjects, one on entomology ("Our 'Disappearing' Butterflies")[1] and one each concerning agriculture, geology, botany and local history. The editor points out that the bias towards ornithology results from the popularity of that science, but is not a matter of principle, and that all papers of interest are welcome.

The editorial panel has its roots in Stirling University, but is not confined to that institution. The articles are well illustrated, although financial restrictions at present rule out the use of more refined production methods. However, it will be remembered that the *Entomologist's Gazette* commenced publication with offset typescript, but was soon able to improve its style, and we wish the present publication equal prosperity, for in spite of the solitary entomological article in the present issue, my correspondent tells me that there will be at least one such article in future volumes "even if he has to write it himself"! The other articles, however, cannot fail to be of interest to all intelligent readers. — S.N.A.J.

[1] George Thomson's contribution (pp. 89-103) is specially interesting for a brief account of the history and changes in distribution of the butterflies of Scotland. — J.M.C.-H.

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Wanted. — Geiger, R. 1958: "The Climate near the Ground" (translated by M. N. Steward). Harvard University Press, Cambridge, Mass., U.S.A. — Write stating price to: *Ulf Carlberg,* Atlasvägen 53I, S-131 00 Nacka, SWEDEN.

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THE ENTOMOLOGIST'S RECORD
AND JOURNAL OF VARIATION

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

TO OUR CONTRIBUTORS

All material for the TEXT of the magazine as well as books for review must be sent to the EDITOR at St. Teresa, 1 Hardcourts Close, West Wickham, Kent.

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CONTENTS

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NOTICE

Please note that the double issue of July/August should have been numbered 7/8 and not 7 as shown.

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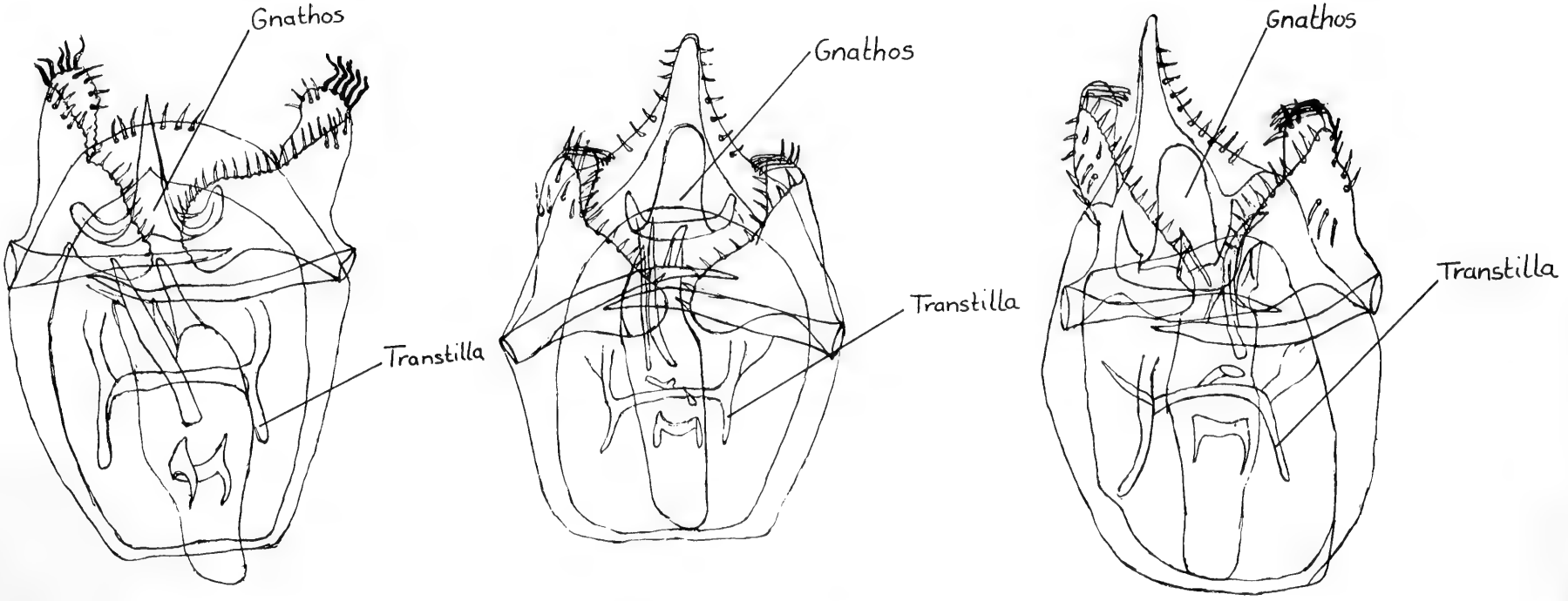

MALE GENITALIA

Left: *Etainia decentella* (H.-S.). Right: *Etainia sericopeza* (Zeller).
Centre: *Etainia sphendamni* (Hering).

PLATE XX

Etainia sericopeza (Zeller, 1839) [Lep.: Nepticulidae] Confirmed as a British Species

By A. M. Emmet[1]
and P. J. Johnson[2]

The original concept of the life-history of *Etainia sericopeza* (Zeller, 1839) was of a nepticulid whose larva mines the samaras of various species of *Acer*. It is now known that there are four species, each being host-specific to a single species of *Acer*. Three of these occur in Britain; the fourth, *Etainia monspessulanella* (Jäckh, 1951), cannot do so, since its foodplant, *Acer monspessulanum,* is absent from our flora.

The first species to be separated was *Etainia decentella* (Herrich-Schäffer, 1855), on the grounds that it had a black head and a yellow thorax, as compared with the orange head and mainly fuscous thorax of *E. sericopeza.* Herrich-Schäffer stated on uncertain evidence that it occured in Britain, but British entomologists (e.g. Tutt, 1899), accepted the opinion of Frey (1880) that it was the summer form of *E. sericopeza,* and not specifically distinct, in spite of the fact that Stainton (1867) had described part of the life-history of the larva on *Acer pseudoplatanus* (sycamore) from continental material. *E. decentella* was not recognised in this country until Robert Adkin (1933) added it to the British list on the basis of a specimen taken by him at Eastbourne. His statement that the cocoons are spun on the bark of sycamores at the end of April or in early May led collectors to search for them, and additional records were soon forthcoming. These were from two well separated areas, viz.: the southern counties from Kent to Hampshire, and the north-western counties of Staffordshire, Cheshire, south Lancashire, and west Yorkshire.

In an important paper, Trägårdh (1913) discusses the life-history of "[*E.*] *sericopeza*". The paper is in Swedish, but in our copy, which once belonged to Professor Hering, there is an English summary which was not printed with the original article. Trägårdh discusses the numerous inconsistencies and contradictions regarding this species in the literature, and goes on to give a full and well illustrated account of its biology when it feeds on *Acer campestre* (field maple). Almost a quarter of a century was to pass before Hering (1937) recognised that the moth described by Trägårdh was not *E. sericopeza,* but a distinct species which he named *E. sphendamni.* However, the dramatic difference between the life-histories of the two species was not known until Jäckh (1951) published his paper on the genus. He stated that *E. sericopeza* feeds on *Acer platanoides* (Norway maple) in two generations, the first from June until July in the samaras, and the second from September until April, mining successively the base of the petioles, the bark of the twigs, and the unopened buds. *E. sphendamni,* on the other hand, is confined to *A. campestre,*

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[2] 7 Haverhill Road, Horseheath, Cambridge, CB1 6QR.

and feeds only in the samaras in two or three generations; the autumn larvae overwinter fully-fed in hibernacula and spin cocoons on the trunks of their foodplant in the spring.

E. sphendamni was added to the British list by Ford (1949a) after some of his specimens had been so identified by A. G. Carolsfeld-Krausé of Denmark. However, he remained unaware of the differences between the biologies of the two species, and ascribed the same life-history to each (Ford, 1949b). He was right for *E. sphendamni,* but completely wrong for *E. sericopeza.*

The question therefore arose of whether there was any valid evidence for the occurrence of *E. sericopeza* in Britain, and this was investigated in depth by one of the authors (A.M.E.) in his researches for volume one of *The Moths and Butterflies of Great Britain and Ireland.* The conclusion reached was that no such evidence existed. In the first place, the true life-history of *E. sericopeza* had never been described from British material. Tutt (1899) gave a conflicting account from two sources: he gave a partial description of the biology of *E. sericopeza* based on the work of a French entomologist (Goureau), and also described that of *E. sphendamni* in more detail, using information he had received from W. Warren of Cambridge. Of our other authors, Stainton (1859) described the adult, but not the life-history. Morris (1872) stated that it mined the leaves of *Populus tremula* (aspen)! Meyrick (1928) said that the larvae feed "in the seed-vessels of maple", without stating which species. Ford (1949b), as we have seen, attributed the life-history of *E. sphendamni* to *E. sericopeza.*

Acer plantanoides is an introduced species. The summer larvae of *E. sericopeza* can only feed thereupon when the trees are sufficiently mature to bear fruit. Trees of such an age would hardly be imported, so, if *E. sericopeza* were to occur in Britain, it would have had to have arrived as an immigrant (either voluntary or otherwise) after its foodplant had become established. At the time of the research by A.M.E. this seemed a possible but unlikely event.

Beirne (1945) depicts the male genitalia of *"E. sericopeza",* but his figure, in fact, shows those of *E. sphendamni.* The specimens of *"E. sericopeza"* in museum collections were examined to see if the nominate species occurred amongst them. It is not easy to distinguish the two species from external characters. Ford (1949a) stated, "The two species are much alike, but can be distinguished by the two terminal spots on the forewings, which, in *E. sericopeza* are smaller and further apart, i.e. the dorsal spot is further beyond the costal spot". Since Jäckh (1951) does not mention this mark of distinction, he evidently considered it unreliable. Instead, he gives three distinguishing characters as follows: —

(a) *E. sericopeza* has the collar whitish, and paler than the ochreous-yellow head, whereas *E. sphendamni* has the collar brownish, and darker than the ferruginous-yellow head.

(b) *E. sericopeza* has the dark fascia near the base of the forewings much broader than the succeeding pale fascia, whereas in *E. spendamni* the two fasciae are of equal width.

(c) In *E. spendamni* the markings are deeper yellow.

A study of bred specimens of *E. sphendamni* quickly revealed that Jäckh's second character was unreliable, and that his third was not sufficiently objective to be of much value. This left the colour of the collar as the only certain mark of distinction. Here, however, difficulty was encountered. Most of the specimens examined were of some age, and their captors had been obliged to use pins of a greater diameter than that of those in use today. These pins obscured or even destroyed the collar which, in any case, is much less strongly developed in *Etainia* than in most other Nepticulidae. Consequently, the examination of specimens was often inconclusive. All that can be said is that among the British specimens in the collections at the British Museum (Natural History), at Oxford, and at Cambridge, there was none which could be determined with certainty as *E. sericopeza*; the 40 specimens in the Ford collection labelled *"sericopeza"* are certainly all *E. sphendamni.*

These considerations led to one conclusion alone, and, consequently, A.M.E. wrote in *The Moths and Butterflies of Great Britain and Ireland,* at the conclusion of the account of *E. sericopeza,* "This species was formerly confused with *E. sphendamni,* and it is possible that all British records refer to that species; there is no authentic record from any British locality." Such was the situation until 20.viii.1975.

Our discovery of *Etainia sericopeza* was due to serendipity. P.J.J. took a specimen of *E. decentella* in his light trap at Horseheath — a record new to Cambridgeshire. (This was, in itself, unusual; Nepticulidae rarely come to light. On this particular night, however, two specimens were caught: one each of *Ectoedemia albifasciella* (Heinmann, 1871) and *Etainia decentella.* Whilst they may not actually have been attracted by the light, it is pointed out that the moths were inside the trap, and not just nearby.) Suspecting that the species might be established in the district, we set out to search for suitable stands of *Acer pseudoplatanus,* with the object of looking on the trunks for cocoons, and on the samaras for mines. Our journey took us over the county border into the parish of Ashdon in Essex. There we noticed a row of tall *Acer* standing back from the road, and went to investigate. P.J.J. had already found a mined key on a low branch, before we realised that the trees were not *A. pseudoplatanus,* but *A. platanoides.* The significance of his find was at once apparent to us and we set about searching, not now for *E. decentella,* but for *E. sericopeza.* It was the season for the imago to be on the wing, so we looked for adults on the trunks. Almost at once, we were successful, and on this and a subsequent visit we found about 25 specimens. They were all on the north or east sides of the trunks, at heights ranging from 1 m. to 3 m. from the ground. Most of the females were liberated on the spot after

examination. Cocoons were also found on the trunks which we examined.

When we set our specimens, we noticed that they had the pale collars stated by Jäckh to be a feature distinguishing *E. sericopeza* from *E. sphendamni.* However, since immediate confirmation of the record was necessary, if we were to correct the account of the species in *The Moths and Butterflies of Great Britain and Ireland,* we asked Mr. J. Heath to dissect the genitalia. This gave the necessary corroboration and he inserted a "Note added in press" confirming the British status of *E. sericopeza* (Heath *et al.,* **1976**: 207). The male genitalia of the three British species of *Etainia* are shown in figures 1-3. Since preparations made from British specimens were found to correspond accurately with Jäckh's figures, our drawings are based on his, but with slight modifications. It will be noted that in *E. sericopeza* the ventral arms of the transtilla are as long as, or longer than, the transverse bar connecting them, whereas in *E. sphendamni* they are less than half the length of the transverse bar. *E. decentella* may be distinguished by the gnathos, which has the apex pointed. In the other two species it is rounded, but is broader in *E. sericopeza* than in *E. sphendamni.*

Having located this flourishing colony of *E. sericopeza* situated halfway between our homes, we decided to study its unusual life-history. Our findings differ in some details from those of Jäckh, but we would not have know where to start our researches had it not been for his excellent pioneer work.

According to Jäckh, the eggs are laid in September at the base of a leaf-stalk; after mining there for a short period, the larva eats its way along under the bark of the twig and enters a bud. We did not observe this phase, but, during the winter, we examined buds carefully to see if we could find mines directed into them. We failed to do so; nor, when we studied tenanted buds in the spring, was there any trace of a mine in the adjacent bark. A larva extracted from its bud in April for examination appeared to eat its way without difficulty into a fresh bud, suggesting a capacity for free movement outside the mine. No phyllophagous nepticulid larva is capable of making a fresh start if taken from its mine (Hering, 1951: 33ff.). The experiment should be repeated, and if confirmation is obtained, it will lend support to the repositioning of the genus *Etainia* suggested by Dr. Borkowski (1975) which is discussed below.

By 10.iv.1976, the buds of *A. platanoides* were sufficiently advanced for those which were aborted to be detected. Some of these were collected and several were found to have cocoons already spun on their surface beside the spot where the larva had emerged. This pupation site is not mentioned in Jäckh, but our impression is that it is the larva's first choice. If the larva is dislodged from the bud by the wind or by some other cause, it descends on a silken thread and spins its cocoon wherever it chances to land. This is usually on the trunk of the host-tree or one adjacent to it, but may also be on the

leaf of a plant growing under the tree (D. W. H. ffennell, *pers. comm.*). A larva of the second generation, found just after it had vacated its mine, was lifted up on a fine paint-brush. It soon started to lower itself on a thread of silk, and was manoeuvred on to a samara. Immediately (i.e. within five seconds), it started spinning its cocoon without shifting its position. Its behaviour was probably typical of both generations.

According to our observations, the first generation larvae feed exclusively on the flower, as opposed to the leaf, buds. The flowers of *A. platanoides* develop earlier than those of other species of *Acer*.

Emergences from spring cocoons in 1976 (an advanced year) extended from 3.v until 14.vi. This prolonged span is bound to be passed on to the second generation, and could give a false impression that there are three broods annually.

Searches were made for the second generation of larvae on 17.vii and 24.vii. It was known from Jäckh that these larvae mine the samaras, which then fall prematurely. Numerous mined keys were found under the trees, in one or two instances with the cocoon already spun thereupon. Green, fresh-looking keys were those most likely to contain larvae. Fresh cocoons were also found spun on the trunks. The inference is that some larvae quit their mines before the fruits fall, and descend to their pupation sites in the same manner as did their parents. Some of the fallen samaras contained larvae which were still feeding. These larvae were pale whitish green in colour, exactly matching the interior of the seed chamber; contrariwise, spring generation larvae, which feed on the flower buds, are yellow. Another colour difference is in the cocoons. Those of the first generation are variable; usually they are dull pink, but they may also be white, dull yellow or dark brown. Some are white when first spun, but change colour later. Two which had remained white for almost a week turned brown overnight after fresh twigs, with leaves attached, had been placed in the container; the change may have been caused by a rise in humidity. The summer cocoons, on the other hand, are uniformly dull yellow when spun, but become browner with age.

The ovum of *E. sericopeza* is larger and more conspicuous than that of *E. sphendamni*. The latter species invariably lays its ovum on the wing of the samara, and the larva mines into the seed-capsule. *E. sericopeza* may oviposit in the same position, but just as often the egg is placed directly above the capsule. In that event, the larva makes a short mine in the skin before attacking the seed. This mine may not be visible from outside, but it is easily seen if the capsule is opened. Having eaten out one of the seeds, the larva usually crosses over and eats part of the other. On its way over, it often mines extensively in the woody tissue of the receptacle. When almost fully-fed, the larva once more mines for a short distance in the skin before leaving for pupation.

We have suggested above that the larva of the first generation may be capable of free movement from one bud to another. There is similar but inconclusive evidence that the summer generation has the same capacity. About ten samaras were found in which only one seed had been eaten. There was no detectable ovum on the samara, and no early mine. The frass was large and characteristic of a well-grown larva. The puzzling feature was that it was impossible to detect where the larva had made its entrance, unless entry and exit were made via the same hole. The ability of the larva to change keys, is, therefore, still unproven.

Adults of the second generation emerged from 30.vii.1976 until 15.viii.1976. Those of *E. sphendamni,* reared from mines collected in samaras of *Acer campestre* collected in the same parish, emerged from 19.viii until 8.ix. The slightly later date for *E. sphendamni* is probably normal.

E. sericopeza has now been recorded by the authors from two localities in north Essex, and also from Cambridgeshire, Middlesex and west Kent. It has also been found plentifully at a locality in north Hampshire by Mr. D. W. H. ffennell. It is an extremely easy insect to detect, both as a larva in each generation and as an imago on the trunk of its foodplant. Readers are therefore recommended to search for it in localities where *A. platanoides* is well established.

The species is subject to heavy parasitization. Parasites reared from the first generation were submitted to Dr. M. R. Shaw of Manchester University with a note to the effect that they might prove interesting in view of the unusual biology of the host. In his reply, Dr. Shaw wrote, "the best things [in the material you sent] appear to be specimens of *Adelius* ?species near *subfasciatus* Haliday from *Etainia sericopeza. A. subfasciatus* is a very variable species, but I think your specimens fall well outside what I have seen before and it is probably another species. . . . If it is only a form caused by the unusual biology of the host, it is different in appearance from all the others you have sent." This possibly new braconid species is still *sub judice.*

In *The Moths and Butterflies of Great Britain and Ireland,* the genera of the Nepticulidae were arranged according to the revision made by Dr. Borkowski (1972), *Etainia* being placed between *Fomoria* and *Fedalmia.* He has now revised his revision (Borkowski, 1975) and places *Etainia* immediately after *Bohemannia* and before the phyllophagous genera. The distinctive life-history of *Etainia* described above supports this rearrangement. However, his reduction of *E. sphendamni* to the status of a subspecies of *E. sericopeza* seems quite extraordinary: there is a pronounced difference in the genitalia and in the androconial scales of the males of the two species. These latter are similar on the underside of the forewing but differ on the hindwing, where the patch near the base on the upperside is more restricted in *E. sphendamni*; moreover, that species, like *E. decentella,* possesses a few dark scales at

the extreme base on the underside, such scales not being present in *E. sericopeza.* There are major differences, too, in the life-histories as at present recorded. We make this qualification because we think it likely that the full life-histories of *E. sphendamni* and *E. decentella* are not yet known. The current doctrine, repeated by authors for over a century, though apparently without positive evidence, is that the larvae which spin cocoons on the trunks in the spring mined the samaras in the previous autumn, and overwintered up the tree in hibernacula (Ford, 1949(b): 203-204). On the analogy of *E. sericopeza,* it seems to us more likely that these species, likewise, have an overwintering generation of larvae feeding in the buds or some other part of their host tree; the larvae come down to pupate immediately on quitting their feeding place. Here is an interesting field for future research.

Acknowledgements

Our thanks are due to Mr. J. Heath for making the genitalia preparations which confirmed the determination of *E. sericopeza,* and to J. A. Kyle for the preparation of the figures in which the genitalia of the three British species of *Etainia* are depicted.

Summary

This paper reasserts the claim of *Etainia sericopeza* (Zeller) to a place on the British list. Ever since it was first stated by Stainton (1854) to occur in this country, its status has remained unchallenged in our entomological text-books. It will be shown, however, that it has hitherto been confused with related species, and its life-history incorrectly described. The authors believe that, when they took *E. sericopeza* on 20.viii.1975, they were the first collectors to do so in Britain. The life-history of the two generations of *E. sericopeza* is described for the first time from British material.

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A Second Record of Eurrhypara perlucidalis (Hbn.) from Kent. — Mr. H. C. Huggins in his "Notes on the Microlepidoptera" (*Ent. Rec.,* **72**: 185-186) describes *Eurrhypara* (*Pyrausta*) *perlucidalis* (Hbn.) as looking "like a tiny *Notarcha ruralis* (Scop.) except for the spot on the forewings". This description agreed with a hitherto unidentified Pyraustid moth that I had captured in a m.v. light trap at Aylesford, Kent on 28.vi.1976. I made this tentative identification in March this year when labelling the specimen. The wingspan of my specimen was 20 mm. (against 30-34 mm. for *ruralis*) and had the same mauve sheen on translucent ochreous wings as the commoner moth. The v-shaped discal spot on the forewing was the most distinctive feature of the wing pattern. This identification was subsequently confirmed by Mr. J. M. Chalmers-Hunt who captured the only other recorded specimen from Kent at Ham Fen, near Deal, on 3.vii.1960 (*Ent. Rec.,* **72**: 173 and *Ent. Rec.,* **86**: 57). — P. J. Jewess, 378 London Road, Aylesford, Kent.

Early Emergence and Abundance of Caradrina ambigua D. & S. in the Eastbourne Area. — My first example of this species came to light on the 26th of May, 1977, an unusually early date for a species which normally flies in August and September. Since that date until the present (29.viii.77), a total of 202 specimens have been recorded, with as many as 42 individuals in one evening. The staggered emergence of this species may perhaps be a result of the unusual weather conditions of the previous year. It will be interesting to see whether a second generation is produced in November, as happens some years. — M. Hadley, 7 Beverington Close, Eastbourne.

Butterflies in Northern Greece: June-July 1976

By John and Margaret Dacie[1]
and Philip Grammaticos[2]

In early May 1969 and in mid-July 1971 we collected in several areas in Northern Greece (Dacie, J. V. and M. K. V. and Grammaticos, 1970, 1972); in late June and early July 1976 we revisited the area, the fauna of which seems to be less well known than that of Central and Southern Greece. Based on Thessaloniki, we collected on the 26th and 27th June in the vicinity of the town and, further afield, on Mt. Cholomon in the Chalcidiki Peninsula on the 23rd and 24th June and on the 9th and 10th July. We visited the hills towards the border with Bulgaria which are north of Kilkis, Serre and Drama on the 25th, 28th, 29th and 30th June, and between the 3rd and 7th July the mountainous country near Florina, Lake Prespa and Kastoria in the North-West corner of Greece, close to the borders of Albania and Yugoslavia. 117 species were identified, making a total of about 130 species for the area if species caught on the two previous occasions, but not seen in 1976, are included.

In this account we shall comment on selected species, i.e. species not previously caught by us in the area and some of special interest.

Papilionidae

Allancastria cerisyi ferdinandi Stichel. We revisited the locality near Drama where we had seen a few specimens of this species in mid-July in 1971 and found it to be (19 days earlier) abundant. Almost all were males, mostly in fine condition. We did not see the species elsewhere.

Parnassius mnemosyne L. This species was taken on two mountains near Florina and Kastoria, at approximately 1,500 m. and 1,900 m., respectively. They lacked completely, or showed only the slightest trace of, the white spots on the grey marginal border of the uppersides of the forewings which occur in *P. mnemosyne athene* Stichel, as found on Mt. Chelmos in S. Greece.

Nymphalidae

Neptis sappho Pallas. Two rather worn specimens were taken on the 30th June about 10 km. north of Drama. This is well below the southern limit for this species according to Higgins and Riley (1970), who mention Hungary, N. Yugoslavia and Rumania, but not Bulgaria or Greece, as countries in E. Europe in which it may be found.

Nymphalis polychloros L. We found this species in small numbers in almost all the areas we visited; it is clearly widespread and not rare in N. Greece.

Fabriciana adippe cleodoxa Ochs. This species was caught in one area only, near Florina: it appeared to be the most local of the large fritillaries.

Brenthis hecate D. & S. This species is relatively uncommon but was caught on Mt. Cholomon, near Drama and in

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[2] 51 Hermou Street, Thessaloniki, Greece.

the Florina-Kastoria area and is presumably widely distributed.

Boloria graeca graeca Staud. This species was taken, flying with *P. mnemosyne,* near Florina and Kastoria. It appears to be indistinguishable from the race flying in the classic locality of Mt. Tymphrystos.

Melitaea arduinna rhodopensis Freyer. This species was taken near Florina and also approximately 30 km. south of Florina on the road connecting Kastoria and Amynteon. *M. arduinna,* hitherto unknown apparently in Greece, was reported by Koutsaftikis (1974) as occurring near Ioannina; it presumably is local but widespread in N.W. Greece.

Euphydryas aurinia Rott. Koutsaftikis (1974) reported that this species had been taken at Florina, Drama, Evros and Ioannina. We encountered a single large colony at about 1,900 m., near Kastoria. It, too, thus seems likely to be widely distributed, although local, in N. Greece.

Satyridae

Hipparchia alcyone syriaca D. & S. This species was seen in only one locality, between Edessa and Florina, at exactly the same place where we found it in 1971. It thus seems to be local in N. Greece.

Hipparchia delattini Kudrna. This species, identified by its genitalia (Kudrna, 1975), was found to be abundant on an arid and stony upland area between Florina and Edessa. We had visited the area in 1971 and had caught several specimens on the same terrain. They had been reported erroneously as *H. semele* L. Other Hipparchia, caught near Kilkis, Serre and Drama were identified by examination of male genitalia, as *H. algirica senthes* Fruhst.

Pseudochazara anthelea amalthea Frivaldsky. Worn specimens of this species were caught flying in the same area as *H. delattini,* and other specimens were seen near Lake Prespa in the extreme N.W. corner of Greece.

Erebia medusa D. & S. This species seems to be widely distributed on the mountains near Florina and Kastoria. We did not see *E. ligea* L., which we had caught in 1971 near Florina a few days earlier in the year.

Aphantopus hyperantus L. We took this species near Florina and also near Drama, in a locality different from that at which we had taken it in 1971. Colonies are presumably widespread, but localised in N. Greece.

Lycaenidae

Quercusia quercus L. A single specimen was taken north of Serre. We had found the species near Volos in 1971, but not then in N. Greece.

Nordmannia acaciae F. This species was common on Mt. Cholomon, although mostly worn, and we took a single specimen near Drama.

Thersamonia thersamon Esper. This species seems to be very local in N. Greece. We saw a few specimens only at two localities near Thessaloniki.

Palaeochrysophanus hippothoe leonhardi Fruhst. This species was found sparingly in two localities near Florina and Kastoria, respectively.

Everes decoloratus Staud. Worn specimens of this species were found in exactly the same locality, near Drama, at which we had taken it in 1971. We did not find it elsewhere.

Cupido osiris Meigen. We took this species quite commonly near Serre, and a few specimens were caught near Drama and also near Florina; it is presumably widespread.

Maculinea arion L. As in 1971, this species is common on Mt. Cholomon. We did not see it near Florina where we had found it in 1971, but we found a few specimens in a mountainous locality near Kastoria. From both localities the majority of the specimens are large, have wide dark borders and are heavily marked.

Philotes baton schiffermuelleri Hemming. A few specimens of this species were caught near Drama and near Lake Prespa. It was common on the stony upland area between Florina and Edessa where *H. delattini* was flying.

Freyeria trochylus Freyer. Two fresh specimens were caught between Florina and Edessa, near Lake Vegoritis.

Plebejus argus L. This species (identified by the presence of a spine on the tibia of its fore-legs and by the bluish tint to the ground-colour of the underside) seems to be common and widespread in N. Greece. It is often unusually large and approaches *L. idas* in size. We found it on Mt. Cholomon and near Kilkis, Serre and Florina.

Lycaeides idas L. This species (identified by the absence of a spine on the tibia of its fore-iegs and no bluish tint to the underside ground-colour) was found commonly near Drama, and we took a single large specimen near Kastoria.

Eumedonia eumedon Esper. A few rather worn specimens of this species were caught at about 1,900 m. near Kastoria. We did not see it elsewhere.

Aricia anteros Freyer. A single specimen was caught near Florina, near where we had seen the species in 1971, and a few were taken, along with the *E. eumedon,* near Kastoria.

Agrodiaetus admetus Esper. A single specimen was taken near Drama, where we had found the species to be abundant in 1971; several specimens were also caught near Lake Prespa, near Florina.

Agrodiaetus ripartii Freyer. In our 1972 account we reported the capture of this species. Re-examination shows that the specimens caught near Florina are *A. ripartii,* but those caught near Drama are *A. alcestis aroaniensis* (see Brown, 1976). Neither species was seen in 1976, although we revisited the exact locality near Drama where *A. a. aroaniensis* had been flying abundantly in 1971. However, in 1976 we visited the locality 19 days earlier in the year.

Plebicula dorylas D. & S. A few specimens of this species were seen near Drama and also near Lake Prespa.

Polyommatus eroides Frivaldsky. In 1971 we took three males of this species near Florina. In 1976 we did not find it at Florina but came across it flying in abundance on the mountain site near Kastoria at approximately 1,900 m. The majority of specimens were males in almost perfect condition;

a few females were, however, seen. Koutsaftikis (1974) reported finding this species at 950 m. near Drama; we did not find it where we collected.

Hesperiidae

Pyrgus malvae L. This species seems to be widespread and we noted it on Mt. Cholomon, near Kilkis, near Florina and near Kastoria.

Pyrgus serratulae major Staud. A few specimens of this large subspecies were taken near Florina and near Kastoria.

Pyrgus cinarae Rambur. Two fine fresh males were taken, near Drama and near Lake Prespa. The species may thus be widely distributed in N. Greece but it seems to be rare.

Pyrgus sidae Esper. This species is clearly widely distributed and we came across it in small numbers in five widely separated localities, on Mt. Cholomon, near Kilkis, near Serre, near Drama and near Florina.

Spialia phlomidis Herrich-Schaeffer. We found a few fresh specimens of this species in two localities in N.W. Greece, between Edessa and Florina and near Lake Prespa.

Syrichtus tessellum Hübner. This large and distinctive species appeared to be quite widely distributed on Mt. Cholomon but uncommon. We did not see it elsewhere.

Carcharodus lavatherae Esper. We reported previously finding three females of this species near Florina and near Drama in 1971. In 1976 we again found a few specimens of both sexes, in two localities near Drama. We did not see it further west.

Carcharodus flocciferus Zeller. We caught two specimens only of this species, near Kilkis and near Florina. It thus appears to be quite widely distributed in N. Greece but it is clearly uncommon.

Thymelicus lineola Ochs. In 1971 we found this species near Florina. In 1976 we found a further colony between Lake Prespa and Kastoria. We did not notice it elsewhere; it is clearly much less common and far less widely distributed than is *T. sylvestris* Poda which we noted practically everywhere we collected.

Acknowledgements

We are indebted to Mr. John Coutsis and Dr. Lionel Higgins for making preparations of the genitalia of the species of *Hipparchia.*

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Rearing the Convolvulus Hawkmoth (*Agrius convolvuli* L.), Autumn-Winter 1976-77

By Robert A. Cramp*

On 16th October, 1976, a friend who lives in Reigate, Surrey rang to say that his daughter had found "a large moth —fully four inches across" in the garden. The specimen turned out to be a female *A. convolvuli* (Linn.) which was in fine condition.

An attempt at obtaining ova was made, and for the purpose a cylinder cage as marketed by Worldwide Butterflies was used. *Calystegia sepium* (Linn.), the common bindweed, was used as a foodplant as *Convolvulus arvensis* (Linn.), the lesser bindweed, was well past its best. Flowers of the tobacco plant, *Nicotiana,* were freshly picked and included in the cage.

At dusk the moth became active. It was observed to hover in such a controlled manner that for several seconds, although in flight, it did not touch the sides of the cage. At no time, however, was it observed to feed. On the morning of the 17th, six ova were noted on the foodplant on the floor of the cage. Spurred on by this piece of good fortune, it was decided to leave the moth for another night to see if it would lay more eggs. At dusk that evening the same flight pattern was noted lasting about half an hour. After this the moth began ovipositing. On the morning of the 18th a further 132 ova were counted. Predicting that the appetites of this number of full-grown larvae would be gargantuan, there seemed to be little point in keeping the moth for further eggs, and, as it was still in quite fine condition it was sacrificed. When set the specimen had a swingspan of 115 m.m.s.

Many of the ova were given away to entomological friends. 40 were retained and these basically divided into two groups. 27 were kept for forcing through as quickly as possible, and 13 were placed in the refrigerator at 4-5°C. in the hope that they might over-winter and be reared at leisure the following season. In the event these ova, while still appearing healthy in mid-January, had completely collapsed by mid-March.

As the ova matured, the developing larvae showed up as white in contrast to the turquoise-green coloration of the egg. Just prior to hatching, the ova were a dull whitish colour all over with one black dot. The ova showed signs of partial collapse at this stage.

On the morning of 28th October, some of the larvae had hatched and by that evening 17 young larvae were counted. They were 6-7 m.m.s long. When first hatched they were very pale green with a slightly darker green head. After a few hours (having eaten) they turned a slightly darker green. The horn, which was black, was about 2 m.m.s long. The larvae were divided into three lots and offered *C. sepium.* This was

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still fairly plentiful locally, although the quality was showing signs of "going off" a bit. For this reason it was decided that the larvae should go through to pupation as quickly as possible. To this end they were kept in the boiler room where the temperature ranged from 27 to 32°C.

By evening of 29th October, two more larvae had hatched and the length of the older larvae was c 9 m.m.s. During the first instar the larvae tended to rest along a midrib or vein on the underside of a leaf. When feeding they would eat a hole in the middle of a leaf.

By the evening of 30th October, several larvae had completed the first ecdysis and several more were obviously preparing for it. 20 larvae were counted at this stage. The more mature larvae were now 11-12 m.m.s — the black horn c. 3 m.m.s.

On 1st November, seven larvae were given away reducing the total to 13. By that evening seven had completed their second skin change. The appearance of the larvae at this stage was slightly changed. The overall length of the larvae when at rest was about 17 m.m.s, and only the apical third of the horn was black. The spiracles were visible now and these were encircled by red. The second instar larvae still tended to feed by biting a hole in the middle of the leaf, but the third instar larvae would take all their meals from the edge of the leaf.

By the evening of 2nd November, 12 of the 13 larvae had shed their skins for the second time. The more mature larvae were now 23-24 m.m.s and feeding voraciously. At this stage the oblique lines were becoming obvious as darker edged white lines passing from the mid-dorsal line through the spiracular mark and terminating at the anterior border of that particular segment.

By the evening of 3rd November, six of the larvae were preparing for their third skin change. The largest larva was now 26 m.m.s and the smallest, which had only just completed its second skin change, was 17 m.m.s. It soon became apparent that the largest larvae was very much darker than the remaining larvae, though these showed considerable variation amongst themselves with regard to the amount of green and black coloration.

By noon on 6th November, the dark larva had completed its fourth skin change. At rest it was 48 m.m.s. At first, after the skin change, it was purplish brown, but a few hours later the ground colour became jet black. The mid-dorsal line was interrupted and orange. On either side of this there was a more complete orange line. The oblique lines were now rather indistinct and white. The spiracles were ringed with red, and the lateral line beneath these pure white. The orange head was marked with six nearly vertical black stripes. The horn was sepia with a black tip and 7 m.m.s long. On the morning of 7th November, when extended it measured 61 m.m.s and was feeding voraciously. One other larva had just shed its skin,

and all the other larvae, except for one, were preparing for the fourth skin change.

By 10th November, all but one had reach their final instar and were of the dark form. The 13th larva was well behind in its development and so was discarded. The remaining larvae continued to feed up well and by 13th November the largest measured 105 m.m.s + when crawling. By 14th November, one of the larvae had stopped feeding and was beginning to make experimental burrows. This procedure was of variable duration among the larvae, but by 17th November the last of the 12 larvae had burrowed into the peat. This had been placed to a depth of four inches at the bottom of the cylinder cage and the larvae mostly made full use of it and burrowed right to the floor. The first one to pupate did so on 21st November.[1]

On 27th November, the pupae were removed and placed on the surface of fresh peat. All 12 were found to be alive and apparently healthy. The pupae were then removed to a room where the temperature ranged from 13-18°C. By the end of January, none of the pupae showed any sign of further development, although all still appeared quite healthy, and so they were placed back in the boiler room. The first moth to emerge, a male, did so at c. 19.00 on 13th February. All of the moths emerged either in the evening around this time or very early in the morning. The remaining moths, four males and five females, emerged between this date and 17th March. Wingspans ranged from 87 m.m.s to 101 m.m.s.

[1] An interesting point is that of all the larvae reared (including those shared among members of the Croydon Natural History Society), only one was of the green form.

CALLICERA AENEA FABRICIUS (DIPTERA, SYRPHIDAE) IN NORTH HAMPSHIRE. — One ♀ specimen of this handsome rare species was captured hovering over some piled up birch logs lying at the side of a woodland ride in full sunshine surrounded by a growth of bracken (*Pteridium aquilinum*) at Odiham Common, North East Hampshire, on the 11th July, 1977. Later that same week on the 15th July, 1977, I was most fortunate to see another ♀ example of this species in an open area adjacent to young coniferous woods in which several large oak and pine boles were lying on their sides in various conditions of decay just north of Benyon's Enclosure, near Mortimer West End, North Hampshire. This specimen, which was in almost perfect condition, I intentionally did not catch in order to observe some of its habits which in this specimen was to hover up and down above the oak boles, exploring the occasional crevice in them and sitting on the boles in the full sun. When disturbed it flew off at speed high into the sky, but soon returned to alight once again on the oak bole in the position it had held before being disturbed. — S. R. MILES, 25 Northanger Close, Alton, Hants.

New Data concerning James Dutfield's *New and Complete Natural History of English Moths and Butterflies* (1748-49)

By Dr. RONALD S. WILKINSON*

Dutfield's colour-plate work on the English moths and butterflies, which seems never to have been completed, is known only by six fascicles and two duplicate numbers in the British Museum (Natural History). It is thus among the rarest of entomological books, and any new information about its publication must be of bibliographical interest.

Lisney (1960) and Wilkinson (1966) have summarised the little that has previously been known of Dutfield and his elusive publication. The six fascicles, each containing two plates and two leaves of text, were published irregularly by M. Payne, London. The wrappers of the first four fascicles are dated 1st June, 1st July, 1st August and 1st September 1748 respectively. The fifth fascicle lacks wrappers, but the two plates are dated 1748 and 1748/9, the old style date suggesting publication (or at least preparation of the second plate) before 25th March. The sixth fascicle has the printed date 1748, but the plates are both dated 1749, indicating issue at the end of March or later.

A previously unrecorded notice was placed in the London *Daily Advertiser* to announce the appearance of the first and second fascicles of Dutfield's book. The notice was first published on 16th June 1748, and was repeated *verbatim* on 20th June:

"*This Day is publish'd,* (*Containing two Plates, printed on a superfine Royal Paper, and beautifully colour'd*) *Number I.* of A New and Complete Natural History of English Moths and Butterflies; considered through all their progressive States and Changes; drawn and colour'd exactly from the Life: Together with the Plants, Flowers, and Fruits, in their Seasons, on which they feed, and are usually found. *By* JAMES DUTFIELD. Printed for M. Payne, at the White Hart in Pater-noster-Row. Number II. (which will be publish'd the Ist of next Month) is ready to be deliver'd to those who have subscrib'd for the four Numbers."

The advertisement suggests that at least in the case of the first fascicles, the date of publication on the wrappers may not have coincided with their actual appearance. No notice of publication of the first number appeared in the *Daily Advertiser* before 16th June, although the wrappers are dated 1st June. This alone is not wholly conclusive, because as seen from the reprinting of the "This day is publish'd" notice four days later, and many similar cases of other titles advertised in the newspaper, one cannot accept these notices literally unless confirming pre-publication notices are also found. In any case, the fascicle dated 1st July seems to have been ready for distribution in mid-June.

* The Library of Congress, Washington, D.C. 20540; The American Museum of Natural History, New York, New York 10024.

The advertisement indicates that despite the wide scope of the proposed book, the first subscription was for *four* numbers only, not six or more. This explains the regular dating of the wrappers of the first four. No prospectus is known, if one was ever issued, and we do not know in which of the usual methods Dutfield or his publisher solicited subscribers. The very irregular dating of the fifth and sixth fascicles suggests that Dutfield and Payne were able to sustain interest, but that the projected edition became increasingly delayed from the proposed monthly schedule. It would at least appear that interest collapsed after the sixth fascicle, and the work was discontinued.

This may be so, but since we have only the BM(NH) copies for reference, it would be dangerous to make such a definite conclusion from such meagre data. It is at least possible that other sets of Dutfield's work have survived. One of the problems in dealing with these matters is that as yet we have nothing even approaching a central record of antiquarian books. Pre-eighteenth century books printed in the British Isles and British America, and English books printed in other countries, have been surveyed and located in many major Western libraries by the short-title catalogues and their supplements. Perhaps the most intensive survey of its kind, now approaching its five hundredth volume, is that of the pre-1956 imprints in many North American libraries. But none of these help us with Dutfield where more copies of his book are likely to be found, in the British Isles. We can only say that six fascicles are *known* to have been printed, and hope that the projected short-title catalogue of eighteenth-century imprints will reveal more evidence.

Was Dutfield's vast project terminated because of the simultaneous appearance and competition of Benjamin Wilkes' *The English Moths and Butterflies*? New facts about the printing history of Wilkes' publications appear in my introduction to the recently advertised reprint of Carington Bowles' edition of Wilkes' *Twelve New Designs,* in press. It is certain that *The English Moths and Butterflies* was complete at the beginning of July 1749, at which time Wilkes had recently died and Dutfield's work appears to have been discontinued. Perhaps there was not yet enough of an entomological "public" in the mid-eighteenth century to support *two* extensive and simultanteous works, especially as Wilkes definitely had the head start. This is the most logical explanation of the failure of Dutfield's book; if it is the true one, then Wilkes' "deathbed victory" was Pyrrhic indeed. Fortunately, interest in entomology increased enough in the next eight decades so that the surveys of John Curtis and James F. Stephens could be published at the same time, and a large number of subscribers could be attracted to each.

The lives of many of our early entomologists still lie in relative obscurity, and the case of James Dutfield is an example. Except for a few facts regarding his collecting and rearing, and his apparently lone venture into entomological

publication, we know nothing about him. Hopefully, some future historian will seek him out in the primary sources of the eighteenth century.

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PARAMESIA GNOMANA (CLERCK) (LEP., TORTRICIDAE) CONFIRMED AS A BRITISH SPECIES. — In August 1977, five specimens of *Paramesia gnomana* (Clerck), (Lep.: Tortricidae), were caught at this address. Bradley, Tremewan and Smith (1973, *British Tortricid Moths,* 133-134) record four old specimens, three noted by Barrett (1872) without exact locality data but possibly coming from the north of the country, and a fourth specimen found by Huggins in 1932 in J. C. Melville's collection, again without exact locality data. Doubts have been cast on the authenticity of these specimens (now in the British Museum (Natural History)) and this species has usually been considered as only possibly British.

On 5th August, 1977, two moths turned up in the garden Robinson mercury vapour moth trap which I took to be pale *Clepsis spectrana* (Treitschke). These were followed by further single specimens on the 8th and 18th in the trap and one at electric light on the 29th. As the moths resembled the illustration of *P. gnomana* in Bradley *et al.* (*op. cit.*) better than those of *C. spectrana,* I looked at the venation. In *C. spectrana,* forewing veins 7 and 8 are separate whilst in *P. gnomana* they are talked from the middle. My specimens had the veins stalked and keyed down to *P.* (*Capua*) *gnomana* in Meyrick (1927, *Revised Handbook of British Lepidoptera*). I thus took the moths to the British Museum (Natural History) where Dr. J. D. Bradley kindly examined the genitalia and confirmed the identification. Bradley *et al.* (*op. cit.*) describe and illustrate the species, but my specimens are marginally more strongly marked than the one they illustrate.

The area in which the moths were caught includes gardens, agricultural land and a small birch wood with odd lime, oak, pine trees, etc. This is typical scenery for this part of the country and there is no reason to suppose that *P. gnomana* only occurs in this restricted locality. The life cycle in this country is unknown but on the continent it feeds on a variety of trees and plants. — H. C. J. GODFRAY, Pinehurst West, Swiffe Lane, Broad Oak, Heathfield, Sussex.

Records of some Scottish Agromyzidae (Diptera)

By Dr. K. P. Bland*

The distribution of the phytophagous diptera of the family Agromyzidae in Scotland is poorly known. Other than J. A. Malloch's extensive collecting in Dumbartonshire at the beginning of the present century, few records exist. The following species have been reared from Scottish localities in the past few years. Those species marked with an asterisk (*) are not mentioned as Scottish by Spencer (1972), while most of the records are probably new vice-county records:

Melanagromyza lappae (Loew)

From stem-mines in *Arctium pubens* Bab.; Roslin, MIDLOTHIAN (coll. 1.ii.76, em. 13-19.v.76).

Agromyza abiens Zetterstedt

From leaf-mines in *Echium vulgare* L.; Arthur's Seat, EDINBURGH (coll. as larvae 24.vi.76; em. 29.viii.76).

**Agromyza alnibetulae* Hendel

From leaf-mine in *Betula pendula* Roth.; Threipmuir Reservoir, Balerno, MIDLOTHIAN (coll. as larva 12.x.75; em. 6.v.76).

**Amauromyza verbasci* (Bouché)

From leaf-mine in *Verbascum thapsus* L.; Gorebridge, MIDLOTHIAN (coll. as larvae 10.vii.76; em. 20.viii.76).

**Phytomyza aprilina* Goureau

From leaf-mines in *Lonicera periclymenum* L.; Rowardennan, STIRLINGSHIRE (coll. as larvae 10.iv.76; em. 9-11.v.76).

Phytomyza crassiseta (Zetterstedt)

From leaf-mines in *Veronica chamaedrys* L.; Blackford Hill, MIDLOTHIAN (coll. as larvae 17.vi.75).

Phytomyza fallaciosa Brischke

From leaf-mines in *Ranunculus repens* L.; Long Hermiston, MIDLOTHIAN (coll. as larvae 2.ii.74).

Phytomyza harlemensis Weyenbergh

From leaf-mines in *Symphoricarpos rivularis* Suksd.; Bush, MIDLOTHIAN (coll. as larvae 19.x.74).

From leaf-mines in *Symphoricarpos rivularis* Suksd.; Binscarth, Mainland, ORKNEY (coll. as larvae 2.viii.76; em. 18.viii.76).

From leaf-mines in *Lonicera periclymenum* L.; St. Margaret's Hope, S. Ronaldsay, ORKNEY (coll. 28.vii.76; em. 1.viii.76).

Phytomyza primulae Robineau - Desvoidy

From leaf-mines in *Primula veris* L.; Grimness, S. Ronaldsay, ORKNEY (coll. as larvae 29.vii.76; em. 5-6.viii.76).

Phytomyza ranunculi (Schrank)

From leaf-mines in *Ranunculus repens* L.; Blackford, MIDLOTHIAN (coll. as larvae 6.vi.74 & 5.v.75).

From leaf-mines in *Ranunculus ficaria* L.; Musselburgh, MIDLOTHIAN (coll. as larvae 18.iv.76; em. 14-16.v.76).

* 35 Charterhall Road, Edinburgh EH9 3HS.

Phytomyza syngenesiae (Hardy)

From leaf-mines in *Sonchus asper* (L.) Hill; Bush, MIDLOTHIAN (coll. as larvae 15.xii.74).

From leaf-mines in cultivated "Chrysanthemum"; Blackford, MIDLOTHIAN (coll. as larvae 12.x.75).

From leaf-mines in *Sonchus oleraceus* L.; Blackford, MIDLOTHIAN (coll. as pup. 24.vi.76; em. 30.vi-2.vii.76).

From leaf-mines in *Sonchus oleraceus* L.; Littlequoy, Burray, ORKNEY (coll. as larvae 24.vii.76; em. 27.vii.76).

From leaf-mines in *Senecio jacobaea* L.; St. Margaret's Hope, S. Ronaldsay, ORKNEY (coll. as larvae 29.vii.76; em. 8-19.viii.76).

Cerodontha bimaculata (Meigen)

From leaf-mines in *Luzula sylvatica* (Huds.) Gaudin; Roslin, MIDLOTHIAN (coll. as larvae 8.v.76; em. 31.v-7.vi.76).

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Spencer, K. A. 1972. *Handbooks for the Identification of British Insects*, Vol. X, Part 5(g), Diptera, Agromyzidae. Royal Entomological Society of London.

COLIAS CROCEUS FOURCR. IN EASTBOURNE. — On the 28th August, 1977, I took a single male specimen of this species while collecting under Beachy Head. The butterfly was flying near the cliffs on the chalk downland and was probably a migrant from Europe. — M. HADLEY, 7 Beverington Close, Eastbourne, East Sussex.

PYRONIA TITHONUS L. AB. ALBIDUS COCKERELL IN THE ISLE OF WIGHT. — A third specimen of this rare aberration of the Gatekeeper butterfly, having the whole of the tawny ground colour replaced by white, was found on the downs near Ventnor on 4th August, 1977. It is a male in freshly emerged condition. The two specimens previously obtained in 1973 and 1974 were both females. *Ent. Rec.*, **86**: 272 and *Ent. Rec.*, **87**: 175 refer. — T. D. FEARNEHOUGH, 26 Green Lane, Shanklin, Isle of Wight.

COSMOPTERIX DRURELLA (FABRICIUS) (LEP.: MOMPHIDAE) IN IRELAND. — While collecting on the edge of Derreen Woods, Lauragh, Co. Kerry at about 6 p.m. on the 5th June, 1977, I netted a small brilliantly-coloured moth which turned out to be a fine specimen of this local species. I have since submitted the example to Dr. J. D. Bradley who has kindly confirmed the identification. Mr. E. C. Pelham-Clinton tells me that so far as he is aware this species is new to Ireland. — J. M. CHALMERS-HUNT.

OECIACUS HIRUNDINIS IN NORFOLK — A CORRECTION. — In my note on this species (*Ent. Rec.*, **88**: 265) the date of occurrence should read "18th January, 1971". — D. R. NASH, 266 Colchester Road, Lawford, Essex.

Andorra — a Visit in July 1976

By J. A. C. and D. F. Greenwood[1]
and P. J. L. Roche[2]

There seems to be a scarcity of information about the butterflies of the Principality of Andorra, so this encourages us to feel that a brief note may be of interest.

The visit by the Greenwoods was suggested by Dr. Roche who has recently retired from his last appointment in the Seychelles and has become a resident of Andorra. The fact that he had already found a number of productive localities not only made a 10-day visit much more enjoyable and successful but saved a great deal of time.

There are several ways to reach Andorra and we chose what would be the quickest—by air from London to Barcelona where we had arranged to be met by taxi. Our first class driver covered 140 miles of largely mountainous road in less than four hours, against the more normal five to six. The route is spectacularly beautiful, passing close to the extraordinary peaks which form Montserrat.

Andorra itself is small and mountainous consisting essentially of a road running north and then east beside a river and edged by precipitous hillsides which for much of the distance form a deep and narrow gorge. From this principal road there are a few secondary routes but the greater part of the country cannot be reached by wheeled transport and only some 2% of the entire area can be cultivated, the principal crops being tobacco and vegetables, usually grown in very small terraced plots of no more than a few hundred square metres, often much less.

As a tax free haven the country is popular for a short stay, perhaps for only one night when good scotch whisky at just over £1 a bottle provides sufficient reason. Facilities for skiing have been developed so that there is a good winter season.

During two seasons Dr. Roche, whose principal interest is the Hemiptera, has recorded 118 species of butterflies. This total includes a few which the Greenwoods were able to add and our own tally for our 10 day stay was 94, which we felt was quite remarkable.

The weather from the 2nd to the 13th July was excellent, sunny with temperatures up to 95°F. and very low humidity. On three days there were brief but heavy afternoon thunderstorms but the ground dried very rapidly.

Dr. Roche lives in the town of Sant Julià de Lòria, which is some two miles from the Spanish border and about five miles south of the capital Andorra la Vielle, a much larger town largely devoted to tourism. In view of the heavy week-end traffic on the main road, we concentrated for the first two days on areas within walking distance of our hotel in Sant Julià. The two areas were within half a mile of our base,

[1] The Thatches, Forest Road, Pyrford, Woking, Surrey.
[2] Casa Nuri Jordana 3°3ª, Sant Julià de Lòria, Principality of Andorra.

perhaps half a mile apart and divided by a rocky ridge. We were amazed by the number of species to be found in these small areas, neither being larger than two or three acres in extent, and by the great abundance of insects. Each area had a stream and bush and varied vegetation. Over a season over 100 species of butterfly could be recorded from these two small localities.

Perhaps even more surprising in two areas so close to one another was the fact that there were many differences in the insect population. It seems strange that, for example, so unmistakeable and powerful a butterfly as *Parnassius apollo* L. should be common in one and apparently absent, even as a visitor, in the other.

For five of the remaining eight days we worked other areas, none of which was more than some 20 miles from Sant Julià, the altitude varying from 3,000 feet near our base to over 6,000 feet. At the higher levels we roamed alpine meadows full of flowers such as purple gentian, orchids and an impressive variety of other attractive plants.

In every locality butterflies were abundant.

On our second week-end we again kept off the roads and revisited the two localities near Sant Julià. Even after such a short interval we found an appreciable number of fresh species, for example the larger fritillaries *Argynnis paphia* L. and *Fabriciana adippe* D. & S.

Lunching on a very hot day within the car in the hope of avoiding attacks by a voracious Tabanid fly we were visited by a very fresh specimen of *Mellicta athalia celadussa* Fruh., the commonest fritillary. This insect insisted on sitting on J.A.C.G.'s thumb where it enjoyed an apparently refreshing meal of salty sweat. It was so interested in absorbing the maximum from this free and constantly replenished supply that it refused to leave, and when its body and the underside of its wings were stroked with a finger it showed every sign of pleasure by raising and lowering its wings. It finally departed only after J.A.C.G. had got out of the car and forcibly removed it.

Another incident concerned *Apatura ilia* D. & S. On our second day we felt that a glimpse of a rapidly moving object at long range might have been *ilia* although P.J.L.R. had not previously observed the species. We therefore decided to try the common bait for African *Charaxes* species of fermented bananas. After three days the mixture was judged to be sufficiently potent and was deposited on the path and on a rock by the stream. Almost immediately a splendid male *ilia* appeared and began to feed. Shortly after another came down and sat on a stone in midstream. Several other sightings indicated a strong colony. One female took up a position high in a large sallow bush where she remained for some 20 minutes walking about but not flying. Finally, in an attempt to persuade her to move elsewhere, J.A.C.G. (who was somewhat painfully positioned in a luxuriant growth of nettles and brambles) violently agitated the bush, but it was not until the branch

was swaying as though in a high wind in Jamaica that the butterfly decided to seek rest elsewhere.

Dr. Roche reported that *Nymphalis antiopa* L. was commonly seen after hibernation when specimens were in poor condition. He had not seen it in the autumn. It was therefore pleasing on our last day to find a nest of half grown larvae on a small sallow bush. These fed up quickly pupating on the 22nd and 25th July with the imagines appearing between the 7th and 9th August in Surrey and some four days earlier in Andorra. The habit of the larvae in swaying the front half of the body violently from side to side at the least disturbance, no more than sudden movement of the air, was very striking and the same movement was repeated by the pupae.

A number of moths, largely *Geometridae* and a few *Zygaenidae,* were stirred up by day. Several *Macroglossum stellatarum* L. were busily flying and *Hipparchus papilionaria* L. was quite frequently around town lights.

When we arrived two unexpected gaps in P.J.L.R.'s list were *Pontia daplidice* L. and *Lampides boeticus* L. All three of us felt confident that both species should be found and indeed we were eventually successful although it was surprising that *daplidice* was only seen as a few singletons and we could only find one male and one female of *boeticus,* both in a deplorable state of dilapidation suggesting, perhaps, that they were migrant individuals.

We can strongly recommend the area for an entomological holiday and P.J.L.R. has kindly said that he will be willing to give advice if asked. Spanish and French are spoken and either currency is accepted.

We were not able to visit the highest point on the road (7,900 ft.), the pass leading into France, because on the proposed day the area was in the clouds.

The areas worked were: —

A — 400 yards E. of Sant Julià, 3,500 feet.
B — about 800 yards S. of A., 3,500 feet.
C — Ayuvinya, 3 to 4 miles E. of Sant Julià, 4,500 feet.
D — Encamp Cortals, 13 miles N. of Sant Julià, 6,000 feet and upwards.
E — Val d'Incles, 15 miles N. of Sant Julià, 6,000 feet and upwards.
F — Os de Civis (actually in Spain but the only road is from Andorra) and Bixessarri, 4,500 and 4,000 feet respectively.

For ease of reference the list of species which follows is in the order used in Higgins, L. G. and Riley, N. D. (1970), *A Field Guide to the Butterflies of Britain and Europe* and we have used their nomenclature. Species marked P.J.L.R. have been recorded by Dr. Roche, but were not seen during the Greenwood's visit. All those not so marked were seen between the 2nd and 13th July, 1976. Of the 118 species no less than 99 were recorded from localities A and B and so were within 10 minutes' walk of the hotel.

Actual localities are not shown for the widespread species.

It seems likely that further collecting will add at least 20 more butterfly species to this Andorra list. These will doubtless include a Pierid or two, several Satyrids (especially *Erebia* spp.) and Lycaenids. As for the moths . . . with a certain minimum of 118 species of butterfly, it is more than probable that the total lepidopterous fauna of Andorra might be in the 5,000-6,000 bracket. This little country has the double advantage of being on the boundary between the N.W. European and Iberian zoogeographical subregions and of varying in altitude between 3,000 and nearly 10,000 feet.

The minimum of 118 species of butterfly represents almost one-third of the total known to occur in Europe. Where else in Europe can 99 species be seen within 15 minutes' walk of one's front door?

List of Butterflies recorded from Andorra

Papilio machaon L., A/B, scarce. *Iphiclides podalirius feisthamelii* Duponchel, B, only one seen by Greenwoods but usually widespread and common. *Parnassius apollo* L., B/C. *Aporia crataegi* L., A/B/C. *Pieris brassicae brassicae* L., widespread. *Pieris rapae* L., widespread. *Pieris napi napi* L., widespread. *Pontia daplidice* L., C/F, v. scarce. *Pontia callidice* Huebner, El Serrat (recorded by H. L. Lewis, July 1973). *Anthocharis cardamines* L., A/B. *Anthocharis belia euphenoides* Staudinger, A/B/C. *Colias phicomone* Esper, D, local, but in this high altitude locality much more common than usual with *Colias* species. *Colias crocea* Geoffroy, widespread. *Colias hyale* L., F, P.J.L.R.; A/B. *Colias australis* Verity, P.J.L.R., A/B. *Gonepteryx rhamni* L., B, P.J.L.R., A. *Gonepteryx cleopatra europaea* Verity, B, very scarce. *Leptidea sinapis* L., plentiful. *Libythea celtis* Laicharting, P.J.L.R., A, extremely local — only seen in one area of about 100 sq. yds. *Apatura ilia barcina* Verity, B. *Limenitis reducta* Staudinger, B. *Limenitis camilla* L., P.J.L.R., B. *Nymphalis antiopa* L., Greenwoods' larvae, C; P.J.L.R. imagines, A/B, common in early spring and summer. *Nymphalis polychloros polychloros* L., A/B/C. *Inachis io* L., C, P.J.L.R., A/B. *Vanessa atalanta* L., B, P.J.L.R., A. *Vanessa cardui* L., a few only but widespread. *Aglais urticae urticae* L., common everywhere. *Polygonia c-album* L., A/B, a few. *Argynnis paphia paphia* L., A/B/F, frequent. *Mesoacidalia aglaja aglaja* L., A/B/E, abundant. *Fabriciana adippe adippe* D. & S., A/B/F. *Issoria lathonia* L., B/C, scarce. *Brenthis daphne* D. & S., A/B/C. *Brenthis ino* Rottemburg, A/B/C/D. *Boloria pales pyrenesmiscens* Verity, D, plentiful in this area. *Boloria napaea* Hoffmannsegg, *D. Proclossana eunonia eunonia* Esper, D/E. *Clossiana selene* D. & S., A/B/C. *Clossiana euphrosyne* L., A/C. *Clossiana dia* L., A/B. *Melitaea cinxia* L., widespread. *Melitaea phoebe phoebe* D. & S., widespread. *Melitaea didyma meridionalis* Staudinger, A/B/C. *Melitaea diamina diamina* Lang (transitional to *M.d. vernetensis* Rondou), P.J.L.R., C. *Mellicta athalia celadussa* Fruhstorfer, abundant. *Mellicta*

deione deione Geyer, P.J.L.R., A/B. *Mellicta parthenoides* Keferstein, P.J.L.R., A. *Euphydryas aurinia debilis* Oberthur, A, one only. *Melanargia galathea lachesis* Huebner, A/B/C, abundant. There is a colony at Encamp (4,000 ft.) which is intermediate between *M.g. galathea* and *M.g. lachesis. Melanargia russiae cleanthe* Boisduval, A/B/C. *Hipparchia alcyone alcyone* D. & S., B/F. *Hipparchia semele cadmus* Fruhstorfer, C, 1 only. *Satyrus actaea* Esper, P.J.L.R., A/B. *Brintesia circe* Fabricius, A/C/F. *Erebia euryale euryale* Esper, P.J.L.R., D. *Erebia epiphron fauveaui* de Lesse, D/E, very plentiful. *Erebia triaria triaria* de Prunner, P.J.L.R., A/B. *Erebia cassioides arvernensis* Oberthur, *D. Erebia oeme oeme* Huebner, E. *Erebia meolans bejarensis* Chapman, B/C. *Maniola jurtina hispulla* Esper, widespread. *Hyponephele lycaon* Keuhn, P.J.L.R., B. *Pyronia tithonus* L., a few A/B, abundant in late July/August. *Coenonympha pamphilus pamphilus* L., widespread. *Coenonympha arcania arcania* L., abundant at lower levels. *Coenonympha dorus dorus* Esper, P.J.L.R., B. *Pararge aegeria aegeria* L., a few. Very common in spring in A. *Lasiommata megera megera* L., widespread. *Lasiommata maera maera* L., widespread. *Hamearis lucina* L., B, one only, very worn. A, in April and May. *Thecla betulae* L., P.J.L.R., A/B. *Quercusia quercus quercus* L., A, one only. *Laesopsis roboris* Esper, A/B, very plentiful. *Nordmannia acaciae* Fabricius, A/B. *Nordmannia ilicis* Esper, A/B. *Nordmannia esculi esculi* Huebner, A/B. *Strymonidia spini* D. & S., P.J.L.R., A/B. *Strydomidia w-album* Knoch, P.J.L.R., A/B. *Callophrys rubi* L., P.J.L.R., A. *Lycaena phlaeas phlaeas* L., a few widespread. *Heodes virgaureae virgaureae* L., B/C/E. *Heodes tityrus tityrus* Poda, A/C/E. *Heodes alciphron gordius* Sulzer, C, one only. *Palaeochrysophanus hippothoe hippothoe* L., A/B/C/D/E, abundant. *Lampides boeticus* L., B/C, very scarce. *Everes argiades* Pallas, P.J.L.R., A. *Everes alcetas* Hoffmannsegg, P.J.L.R., A/B, very common in August. *Cupido minimus minimus* Fuessly, A/B/D/E/F. *Calestrina argiolus* L., A/B/C/F. *Glaucopsyche alexis alexis* Poda, P.J.L.R., A/B. *Maculinea arion arion* L., B/C, scarce. *Plebejus argus argus* L., C/D. *Lycaeides idas idas* L., A/D/E. *Eumedonia eumedon* Esper, D, common but excessively local, not straying more than two yards from clumps of *Geranium pratense,* the larval foodplant. *Aricia agestis agestis* D. & S., widespread. *Aricia allous montensis* Verity, P.J.L.R., A/B. *Cyaniris semiargus* Rottemburg, widespread. *Plebicula escheri escheri* Huebner, P.J.L.R., A/A. *Plebicula dorylas* D. & S., A/B/F. *Plebicula amanda amanda* Schneider, A/B/C. *Plebicula thersites* Cantener, P.J.L.R., A, apparently uncommon but probably overlooked owing to its superficial resemblance to the abundant *P. icarus. Lysandra coridon coridon* Poda, P.J.L.R., D, very local and uncommon. *Lysandra albicans albicans* Herrich-Schaeffer f. *arragonensis* Gerhard, plentiful. *Lysandra bellargus* Rottemburg, A/B/C. *Polyommatus icarus* Rottemburg, abundant. *Pyrgus malvae* L., A/B/E, probably *P. malvae malvoides* Elwes & Edwards. *Pyrgus alveus* Heubner, D, prob-

ably *P. alveus centralitaliae* f. *centralhispaniae* Verity. *Pyrgus serratulae* Rambur, D. *Pyrgus cirsii* Rambur, P.J.L.R., A/B. *Spialia sertorius sertorius* Hoffmannsegg, P.J.L.R., B (also at "OS" by Greenwood but actually in Spain). *Carcharodus alceae* Esper, A/B/C. *Carcharodus flocciferus* Zeller, A/B/F. *Eyrnnis tages* L., A/B/E. *Thymelicus lineola lineola* Ochsenheimer, E. *Thymelicus sylvestris* Poda, A/B/E/F. *Hesperia comma comma* L., P.J.L.R., A/B. *Ochlodes venatus* Turati, A.

Notes and Observations

AN EFFECTIVE BIRD DETERRENT? — Many who operate a light trap suffer from sparrows and other small birds entering it and eating the moths within. Mr. A. J. Dewick of Bradwell-on-Sea was for a long time much bothered by these pests until about four years ago, when his son Stephen hit on a brilliant idea. He placed at the entrance of the trap an artificial snake made of plastic and from that day to this has had no further trouble. Mr. Dewick and his son showed me the snake which is remarkably life-like, and when placed on the edge of the trap and touched, slithers down in a most realistic manner! — J. M. CHALMERS-HUNT.

NOTES ON AN INTRODUCED "COLONY" OF THE BLACK-VEINED WHITE (APORIA CRATAEGI L.) IN SCOTLAND. — In 1974, from various parts of the Madrid district, I secured a few hundred eggs of this species and brought them back to this address in Fife, where I am now living. In 1975, about 200 butterflies successfully emerged in that most unlikely of events in Scotland, a heatwave. A large number paired, and immediately laid eggs on the surrounding hawthorns, and to a lesser extent on some very old apple trees in my orchard. I collected as many of these eggs as I could find, and reared another generation which emerged once again during a heatwave, in mid-June 1976. From these I retrieved as many eggs as possible, but fewer than before, from which only about 100 butterflies emerged, this time in the first week of July but again in a heatwave. In 1977, however, I succeeded in finding about 700 eggs, quite a few of which were on apple and for the first time some on a plum tree.

This year I was present when most of the females emerged, about 48 hours on average after the males, and I immediately put these out on a bush, and in most cases they were paired within five or ten minutes. In other years the females have flown straight out of the summerhouse where I had kept the pupae, and this probably tended to scatter them and resulting in many not finding mates. This year I found all the eggs within a circle of 100 yards of the release point, and mostly within 100 feet of it.

There is a problem with birds which have caught some of the butterflies. I have also lost larvae from attack by *Apanteles,*

because I have not always found the eggs before they hatched. This year I have purposely left a few batches of eggs where they were laid to see if they can survive a Scottish winter and the presence of spiders, parasites and hundreds of insect-eating birds. — R. ELLIOTT, "Burnbank", Saline, (Dunfermline), Fife.

ACANTHOPHILA ALACELLA (ZELLER) IN KENT. — I know nothing of the present distribution of this moth (described by Meyrick as local and uncommon), a specimen of which came to my m.v. light in Orlestone Forest on the 9th July. As so often in 1977 the north-east wind made the attendance at the sheet small and the rather jaunty gait of the insect first drew my attention. In a late year like this the date is a peculiar one for a moth whose time of flight is given as July-August. — R. FAIRCLOUGH, Blencathra, Deanoak Lane, Leigh, Surrey, 5.viii.77. [Mr. Fairclough's record appears to be the first of this species for Kent. — J.M.C.-H.]

HYLES GALLII ROTT. AND MACROGLOSSUM STELLATARUM L. IN LANCASHIRE. — I was examining the contents of my m.v. trap here on 10th July, 1977, and was very pleased to find a Bedstraw Hawkmoth (*H. gallii* Rott.).

I saw a Hummingbird Hawkmoth (*M. stellatarum* L.) at honeysuckle on the evening of 7th July near my home, which I tried to catch and failed. — J. J. WHITESIDE, Dover Farm, Blackburn Old Road, Hoghton, near Preston, PR5 0SJ.

HYLES GALLII ROTT. AND EUROIS OCCULTA L. IN WARWICKSHIRE. — On the morning of 26th June, 1977, I was surprised to find a perfect female of *H. gallii* Rott. in my garden m.v. trap amongst 23 other species of macros. The condition of the specimen and the prevalent north-easterly winds for some weeks previous suggest the moth may have emerged locally.

On the morning of 18th July, 1977, after a mild overcast night with a south-westerly wind, *Eurois occulta* L. was another welcome migrant. — D. C. G. BROWN, 25 Charlcote, near Warwick.

EUROIS OCCULTA L. IN NORTH-EAST SURREY. — After the night of 13th/14th August, 1977, a rather worn male specimen of the Great Brocade (*E. occulta* L.) was found in the garden light trap here at Purley. The moth is of a light grey colour and possibly of continental origin. — P. M. STIRLING, 83 Grasmere Road, Purley, Surrey.

DYPTERYGIA SCABRIUSCULA L. (LEP.: NOCTUIDAE) IN HILTON, DERBYSHIRE. — On the night of 2nd July, 1977, a specimen of the Bird's-wing, *Dypterygia scabriuscula* L., came to light here at Hilton. Since I had not previously recorded this species, I contacted Mr. F. Harrison, the Derbyshire county recorder, who informs me that it is a new record for Derbyshire and elsewhere in the region, apart from an occasional record from Staffordshire none of which is recent. Mr. R. G. Warren confirmed its scarcity in Staffordshire, but added that three specimens had been taken this year, including one at Chartley

Moss in June. These are the first since the early 1940's. Is this another example of an insect extending its range owing to the exceptional weather conditions of 1976? — A. WM. SPEED, The Dumbles, 14 Field Close, Hilton, Derbyshire.

THE WAVED BLACK (PARASCOTIA FULGINARIA L.) IN EAST KENT. — A worn male of this moth was taken in a m.v.l. trap at the Field Study Centre, Canterbury, Kent on the night of 7th August, 1977. This appears to be a rare species in Kent with probably only about a dozen specimens recorded. — T. W. HARMAN, Field Study Centre, Ex Broadoak Sub-station, Broadoak Road, Canterbury.

THE GREAT PIERINAE MYSTERY. — I have lived in Norway for 30 years and for 20 of them I worked as an engineer in a food-canning factory in Oslo. My home was only two kilometres from the factory and in summer I used to walk to and from work. My route took me across a park and then over a piece of ground called the Ola Narr. This is an area of rough, uncultivated land about a kilometre long and half a kilometre wide, bounded on one side by a railway embankment covered in an assortment of weeds. It is rather like Barnes Common in west London.

My observations started in 1950. Having noticed that numerous Pierinae were on the wing, I used to carry a net and killing-bottle with me in order to search for varieties. During the next 18 years I must have netted many hundreds of whites, all of which were the green-veined white (*Pieris napi* L.) except for seven small whites (*P. rapae* L.), three of which I kept. I caught over 30 "vars" of *P. napi* over this period, including one ab. *immaculata* Strand and a perfect female apparently referable to ssp. *bicolorata* Petersen. How the latter got there I do not know, as Langer (*Nordens Dagsommerfugle*) states that it is found only in the north of Sweden.

In 1968 I was taken ill and had to spend a year in hospital. After my discharge I started work again, but my complaint returned and I spent a further six months in a convalescent home. I was then discharged from my employment on full pension. There was therefore a lapse of two years before I was able to take up my bug-hunting again. When the spring came, I took a walk over the Ola Narr to see how *P. napi* was getting on. There were plenty of whites on the wing and I caught about a dozen: every one was *P. rapae*! During the last seven years I have visited the locality once or twice a week and have seen hundreds of *P. rapae,* but not more than 20 *P. napi.* How the change came about I do not know. There is no alteration in the habitat except that over on the other side of the common they have built an open-air swimming-bath and sun-bathing lido. Since then there have been numbers of "bikini-beauties" flying about which may have frightened *P. napi* away — they certainly do not frighten me away! If any readers of *The Record* can solve this mystery, I shall be glad to hear from them. — HENRY LEE, Voyensvringen 20, L.531, Oslo 4, Norway, 21.v.77.

H. (Phymatopus) hecta L. : Golden Swift.

Native. Woods, gardens, copses, parkland; [in roots of ferns]. Found in all divisions except 5 (probably present), 9, 15. "Generally abundant" (*V.C.H.*, 1908).

The moth usually appears from about the middle of June, but in 1960, D. R. M. Long noted one at Bromley on May 24th.

There is no record of the finding of the larva in Kent, but the moth is often noted among bracken. At Catford (div. 1) about 1928, W. E. Busbridge observed it commonly in a garden at dusk among ferns; and at Ham Fen on July 2nd 1955, I witnessed the moth flying plentifully about a species of fern an hour or so before sunset (C.-H.).

VARIATION. — Barrett (*Lep. Br. Is.*, **2**: 153) records ab. *decorata* Krul., near Dover. In RCK are: ab. *nemorosa* Esp., Sevenoaks; ab. *jodutta* Esp., Bexley, 1909.

FIRST RECORD, 1858: Darenth Wood (Tugwell, *Ent. week. Int.*, **4**: 125).

H. (Korscheltellus) lupulinus L. : Common Swift.

Native. Cultivated and waste places, woods, etc.; on the roots of various plants including strawberry, mint, Michaelmas daisy and on Gladiolus corms. Found in all divisions. "Generally abundant" (*V.C.H.*, 1908).

Theobald (*Entomologist*, **29**: 194) noted the larvae "in many parts of Kent attacking the roots of various plants, especially the strawberry"; also those of "mint, which seems a favourite foodplant". Theobald (*Jnl. S.E. Agric. Coll. Wye*, **1908** (17), 169) also recorded the larva as feeding on Gladiolus corms at Ramsgate. At Lee, Fenn (*Diary*, 31.iii.1893) found about twelve larvae feeding on Michaelmas daisy roots.

The larva is sometimes attacked by the fungus *Cordyceps entomorrhiza*. For instance, at Wye, in the spring of 1908, Theobald (*Jnl. S.E. Agric. Coll. Wye.*, **1908** (17), 89) noted that of the great number of *lupulinus* larvae observed there, about 50% were attacked by *C. entomorrhiza*.

VARIATION. — In RCK are the following named aberrations: *senex* Pfitzner, Chattenden; *nebulosus* Haw., two, Hythe, 1898; *dacicus* Caradja, Lewisham and Bexley; *nigrescens* Cockayne, holotype ♀, North Kent, 1910.

Boyd (*Proc. ent. Soc. Lond.*, **1878**: 45) stated that at Margate, specimens were "whiter than usual".

My series of the moth from Kent. ranges in both sexes from specimens that are almost all white, to those nearly or entirely, unicolorous grey (C.-H.).

FIRST RECORD, 1809: *H. obliquus* . . . "at Darn [Darenth]" (Haworth, *Lep. Br.*, **2**: 143).

H. (K.) fusconebulosa DeGeer : Map-winged Swift.

Native. Woods, apparently preferring those on chalk; foodplant unknown.

1. Joydens Wood, c. 1946 (D. F. Owen). Well Wood, West Wickham, female, June 10th 1949 (C.-H.). West Wickham (Birchenough in de Worms, *Lond. Nat.*, **1957**: 175).

3. Den Grove, one, c. 1938; Little Hall Wood, a pair *in cop.*, June 13th 1946 (C.-H.).

5. Chevening, June 15th 1916 (F. Gillett, *Diary*).

6. Near Strood*, abundant c. 1875 (Tutt, *Ent. Rec.*, **2**: 136). Eynsford, June 20th 1891 (Adkin, *Proc. S. Lond. ent. nat. Hist. Soc.*, **1891**: 122). Clay Lane Wood, not uncommon (H. C. Huggins). Shoreham* (H. E. Hammond); 1954 (Chatelain, in de Worms, *Lond. Nat.*, **1959**: 128).

6a. Darenth Wood (see *First Notice*); common, 1858 (Tugwell, *Ent. week. Int.*, **4**: 125); May 30th 1863, one, May 21st 1865 (Fenn, *Diary*); fairly common (*V.C.H.*, 1908); fairly common, c. 1950 (B. K. West). [Chattenden], "occurs in some plenty" (Crozier, *Nat. Hist. Rev.*, **5**: 128).

7. Wigmore Wood, not common (Chaney, 1884-87). Hollingbourne Hill; Hucking (H. C. Huggins). Detling, one, 1917, H. Elgar, in Maidstone Mus. (C.-H.). Westwell, June 2nd 1946 (E. Scott).

8. Dover district, about 40, 1861 (Stonestreet, *Ent. week. Int.*, **10**: 186). Folkestone* (Oldham, *Proc. S. Lond. ent. nat. Hist. Soc.* for 19.vi.1873 *per Entomologist,* **6**: 440); common in the woods (Purdey, *Entomologist,* **8**: 226). Kearsney, one, June 17th 1898; Poulton Wood, one, June 17th 1899 (H. D. Stockwell, *Diary*) St. Radigunds, one, June 28th 1909; Coombe Wood, one, June 16th 1909 (P. A. Cardew, *Diary*). Temple Ewell, one at dusk, June 25th 1932 (W. E. Busbridge, *Diary*). Dover, several (B. O. C. Gardiner). Covert Wood, at dusk, June 13th 1949 (G. H. Youden). Wye (H. C. Huggins); (Scott, 1936). Chilham*, one on birch trunk, June 10th 1922 (H. G. Gomm, *Diary*). Brook; Stowting (C. A. W. Duffield). Bridge, c. 1946 (R. Gorer). Waltham, 1951 (J. W. C. Hunt). Near Dover, common (G. H. Youden, *in litt.* viii.1977).

10. Brasted (R. M. Prideaux). Sevenoaks (W. E. Busbridge).

11. Oaken Wood, Barming, five, 1894-96, H. Elgar, in Maidstone Mus. (C.-H.). Wateringbury, one, 1901 (E. Goodwin MS.). Near Maidstone (*V.C.H.*, 1908).

12. Hinxhill (Scott, 1936). Ashford, a few, 1958 (M. Singleton and M. Enfield).

16. Near Sandling Park, one, May 30th 1928 (A. M. Morley).

VARIATION. — The well-known ab. *gallicus* Led., in which the markings are mostly suppressed, has never been recorded from Kent to my knowledge; yet curiously, in Surrey, Barrett (*Lep. Br. Is.*, **2**: 165) found this to be the only form.

Barrett (*loc. cit.*) records a reddish form at Dover on the authority of S. Webb.

FIRST NOTICE, 1814: In mid-June 1814 "a locality was detected at Darenth-wood, where the insect abounds" (Stephens, *Haust.*, **2**: 6).

COSSIDAE

Zeuzerinae

Zeuzera pyrina L. : **aesculi** L. : Wood Leopard

Native. Woods, gardens, orchards, waysides, parks; in the living wood of lilac, sallow, apple, elm, hawthorn, Spanish chestnut, pear, cherry, plum, walnut, blackcurrant, horse chestnut, *Viburnum,* hornbeam.

1. Lewisham, 1884, flying in the day-time (Douglas, *Ent. mon. Mag.*, **21**: 90). "At Blackheath the destruction of good-sized elm-trees has been attributed to the abundance of its larvae" (Barrett, *Lep. Br. Is.*, **2**: 145). Greenwich, larva in hawthorn and apple (West, *Ent. Rec.*, **18**: 170).

The species has been recorded in the past from many localities in this division. Recent records are: Abbey Wood, 1946 (A. J. Showler). Petts Wood, several at light, 1946-48 (E. Evans). Fairly common at Lewisham and in Greenwich Park; sometimes met with on Blackheath and at Charlton sandpit; larvae occasionally at Lewisham (D. F. Owen, *in litt.* 1947). Petts Wood, 1944 (A. M. Swain). Shooters Hill, occasionally (J. F. Burton). West Wickham, 1951 (E. E. J. Trundell). Dartford, common some years (B. K. West). Orpington, 1953 (L. E. Siggs). St. Mary's Cray, 1957 (Chatelain in de Worms, *Lond. Nat.*, **1958**: 49), Greenwich Park, ♀ at rest on Spanish chestnut, July 14th 1949; many pupae under Spanish chestnut bark, December 26th 1951 (J. F. Burton). Hayes (Birchenough in de Worms, *Lond. Nat.*, **1953**: 142). Blackheath, 11 ♂ ♂ at m.v. light, July 4th 1960, not seen before or since (A. A. Allen). Bromley, July 28th 1963 (1), June 29th 1964 (1), July 15th (1), 27th (1) 1965, July 7th 1966 (1) (D. R. M. Long). Bexley Park Wood, moth and empty pupa case on hornbeam (B. K. West). West Wickham, ♂ at light, August 4th 1977 (C.-H.).

2. Luddenham (H. C. Huggins).

3. Herne Bay (Hawkins, *Proc. S. Lond. ent. nat. Hist. Soc.*, **1929-30**: 32); occasionally in the town; ♀ July 1931 (A. J. L. Bowes). Eddington, seven ♂ ♂, 1951 (D. G. Marsh). Canterbury City, occasionally; a larva in lilac tree (J. A. Parry). Broad Oak, ♂ at light, July 22nd 1949 (C.-H.).

4. Sandwich Bay, ♂ at light, August 5th 1937 (A. J. L. Bowes). Ickham, 1957 (1), 1958 (1) (D. G. Marsh).

5. Farnborough (H. Alderson in *Wool. Surv.*, 1909). Westerham (R. C. Edwards). [(Downe (Birchenough in de Worms, *Lond. Nat.*, **1953**: 142) is erroneous (R. F. Birchenough).]

6. Rochester* (Chaney, 1884-87). Rosherville (E. Andrews in Chaney, 1884-7). Mr. Till of Eynsford writes that one young apple is quite destroyed by "the perforating action going on in the trunk" (Theobald, *Second Rpt. Econ. Zool.*, **1904**: 31). Greenhithe* (*V.C.H.*, 1908). Horton Kirby, on apple (Theobald, *Jnl. S.E. Agric. Coll. Wye*, **1908** (17), 89). Gravesend, larva and imago (H. C. Huggins); at light July 3rd, 18th 1911, July 23rd 1914, larvae in elm, lilac (F. T. Grant). Longfield, 1949, 1950 (G. G. E. Scudder). Ryarsh, 1947 (J. Fremlin). Eynsford, two, July 14th 1964 (R. G. Chatelain).

7. Chestnut Street, imago; Selling, larva in orchards (H. C. Huggins). Westwell, ♀, August 6th 1938 (E. Scott); larvae in very old sallow trunks (Scott, 1950).

8. Wye* (Scott, 1936). Dover, fairly plentiful; one ♀ July 27th 1977 (G. H. Youden).

9. Margate, one June 30th 1926, ♀ July 1931 (H. G. Gomm, *Diary*); July 17th 1951 (W. D. Bowden). St. Peters, ♂ July 7th 1957 (W. D. Bowden).

10. Brasted, July 28th 1918 (Gillett, *Diary*); single specimens occasionally (R. M. Prideaux). Sevenoaks, pupa in *Viburnum*, 1943, imagines at light, 1949, 1951 (F. D. Greenwood).

11. Wateringbury, several in E. Goodwin coll. (C.-H.). "Is by no means uncommon in Kent, being frequently sent from orchards round Maidstone and Tonbridge" (Theobald, *Second Rpt. Econ. Zool.*, **1904**: 31). Mereworth, larva in apple tree, October 19th (1908) (Theobald, *Jnl. S.E. Agric. Coll. Wye*, **1909** (18), 115). Yalding (*V.C.H.*, 1908). East Peckham, apple trees attacked with as many as six larvae in one branch (Theobald, *Jnl. S.E. Agric. Coll. Wye*, **1912** (21), 127). In Kent [Maidstone district] it is usually found on apple but frequently attacks the smaller limbs and branches of cherries, pears, plums, walnuts and other trees including the chestnut . . . " (Massee, *Ann. Rpt. E. Malling Res. Stn.*, **1935**: 165). Maidstone district, horse chestnut is a favourite host (Massee, *Ann. Rpt. E. Malling Res. Stn.*, **1950**: 142). East Malling, ♀ 1951 (G. A. N. Davis). Hoads Wood, August 8th 1954 (P. Cue MS.). Sevenoaks Weald, seven, June 16th-August 3rd 1960 (E. A. Sadler).

12. Brook* (C. A. W. Duffield); larva in apple, June 1940 (A. J. L. Bowes). Ham Street, ♂ at light, July 22nd 1935 (A. J. L. Bowes); about 18 ♂♂ at light in Orlestone Woods, July 20th-31st 1951, with eight on July 20th (C.-H.). Ashford, two on a fence, 1937 (Scott, 1950); some almost every year at light including July 7th 1967 (P. Cue MS.). Chartham, common c. 1952 (P. B. Wacher). Willesborough, three, July 12th-15th 1955; Wye, two July 20th-August 3rd 1954, one July 1955, one July 21st 1956 (W. L. Rudland). Kennington, one, 1957 (M. Singleton). West Ashford, one at light, 1961 (M. Enfield). Willesborough, one at light, c. 1960 (M. Singleton).

13. Tunbridge Wells, 1891 (Beeching, *Ent. Rec.*, **2**: 229); fairly common (R. H. Rattray in Knipe, 1916); 1958 (4) (L. R. Tesch *per* C. A. Stace); 1959 (1) (C. A. Stace). Goudhurst, common (W. V. D. Bolt, *pers. comm.*, 1961). Pembury, larvae boring into the larger growths of black currants" (Massee, *E. Malling Ann. Rpt.*, **1935**: 165).

14. Tenterden (Stainton, *Man.*, **1**: 113). Sandhurst (G. V. Bull). Hawkhurst, one, 1950 (B. G. Chatfield). Knock Wood c. 1855 (Beale, *Diary*). Tenterden, larvae not uncommon (Beale, *Zoologist*, 4130).

15. Dymchurch, four, 1952 (Wakely, *Ent. Rec.*, **65**: 43).

16. Folkestone*, "a few stray examples at light" (Knaggs, 1870). Near Hythe, 1930 (Saunders *teste* Morley, 1931). Lympne, 1898 (Heitland, *Entomologist*, **31**: 221). Folkestone Town, ♂, ♀, 1952 (Morley, *Proc. S. Lond. ent. nat. Hist. Soc.*, **1952-53**: 42).

VARIATION. — In RCK is one with right side ab. *confluens* Cockayne left side normal, Brockley, 1903.

FIRST RECORD, 1845: Lewisham (Stainton, *Zoologist*, 1194).

Cossinae

Cossus cossus L.: Goat.

Native. Woods, avenues, parks, orchards, plantations, gardens; in wood of black poplar, balsam poplar, oak, willow, elm, ash, apple, cherry, walnut. Recorded from all divisions. "Generally common" (*V.C.H.*, 1908), though appreciably scarcer nowadays.

Most records refer to the larva which according to Theobald (*J.S.E. Agric. Coll., Wye,* **1904** (13), 159) causes by far the greatest damage to ash, then elm and next willow. Massee (*Rpt. E. Malling Res. Stn.,* **1953**: 163) states that in an old eleven-acre orchard at Ulcombe, it infested apple, cherry and walnut trees. A. J. L. Bowes (*Diary*) recorded it as not uncommon in poplars in Herne Bay from which he had bred several moths, and that he had also found the larva in August 1939 in oak stumps at Ham Street; and J. A. Parry found the larvae abundantly in willows in the City of Canterbury c. 1945. In 1953, B. K. West noted the larvae in extreme abundance in balsam poplars at Bexley Heath; large numbers were revealed under each piece of bark removed and he estimated that they were present there in hundreds. The larva has been recorded by various people on poplar from many localities in the county, including several by me at Bromley on black poplar c. 1950, and nearly every autumn from 1934-1940 at Broad Oak, near Canterbury, I used to see full-grown larvae wandering about on the ground in the vicinity of an ancient *cossus*-infested walnut (C.-H.).

The imago is seldom seen, but has occasionally been noted at light and at rest on pales. For instance, R. G. Chatelain took one at light at Dungeness, July 17th 1964; and W. L. Rudland, one at light at Ham Street, June 24th 1953. I have only seen the moth twice, once at Broad Oak and once at Sandwich, and on each occasion apparently attracted to sugar though not imbibing it (C.-H.). Rarely has it been noted in numbers, as when Carter (*Entomologist,* **33**: 158) records that one evening at Bexley Heath he took 17 specimens from a single willow trunk from which twice as many pupa cases were projecting from holes; and B. K. West noted many moths at Bexley Heath flying about and settling on the trunks of the balsam poplars referred to above.

First Record, 1828: "Near Deptford, abundantly in June last" (Newman, in Stephens, *Haust.,* **2**: 10).

ZYGAENIDAE

Procridinae

Adscita statices L. : The Forester.

Native. Wet meadows, grassy places, chalk downs; foodplant unrecorded.

Note: The time of appearance of this exceedingly local moth varies according to locality. At Chattenden (where it is apparently extinct), it appeared in May and June, but in the Sandwich-Deal area its normal time of occurrence is July.

1. Near West Wickham (Simson, *Ent. week. Int.,* **1**: 116); June 7th 1857 (C. Healey, in Tutt, *Br. Lep.,* **1**: 399). Forest Hill, early July 1895 (Helps, in Tutt, *loc. cit.*). Dartford Heath, 1904 (E. D. Morgan).

4. Sandwich, common (1865) (Harding, *Entomologist,* **3**: 24); July 29th 1889 (H. Goss *teste* Fenn, *Diary*); St. George's and Prince's golf courses, Sandwich, July 25th 1922, August 1st 1923, July 28th 1926, July 15th ("only three") 1929 (H. G. Gomm, *Diary*); Sandwich, abundant, c. 1947 (J. A. Parry); one, July 10th 1948 (R. C. Edwards); one, June 29th 1952 (A. M. Swain); July 5th 1957 (R. F. Bretherton). Fordwich, ♂, June 1931 (A. J. L. Bowes). Deal, 1933-34, scarce (E. & Y., 1949); one, June 20th 1958 (E. Philp); Sandown Castle, ♂, July 15th 1973 (C.-H.).

6a. Darenth Wood (Stephens, *Haust.,* **1**: 106). Chattenden, "I met with a few specimens in one meadow" (Crozier, *Nat. Hist. Rev.,* **5**: 127); common in several of the meadows near Chattenden, also in a little grassy spot in the upper part of the Roughs, June 5th-29th (Chaney, 1884-87); not uncommon but very worn June 20th 1885, very common June 12th 1886, two June 14th 1887, worn June 8th 1889, common but worn June 20th 1891, June 4th (29) 1892 (Fenn, *Diary*); three June 12th 1891 (Tyrer, *Ent. Rec.,* **2**: 111); June 11th 1887, June 4th-26th

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CONTENTS

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THE ENTOMOLOGIST'S RECORD

AND JOURNAL OF VARIATION

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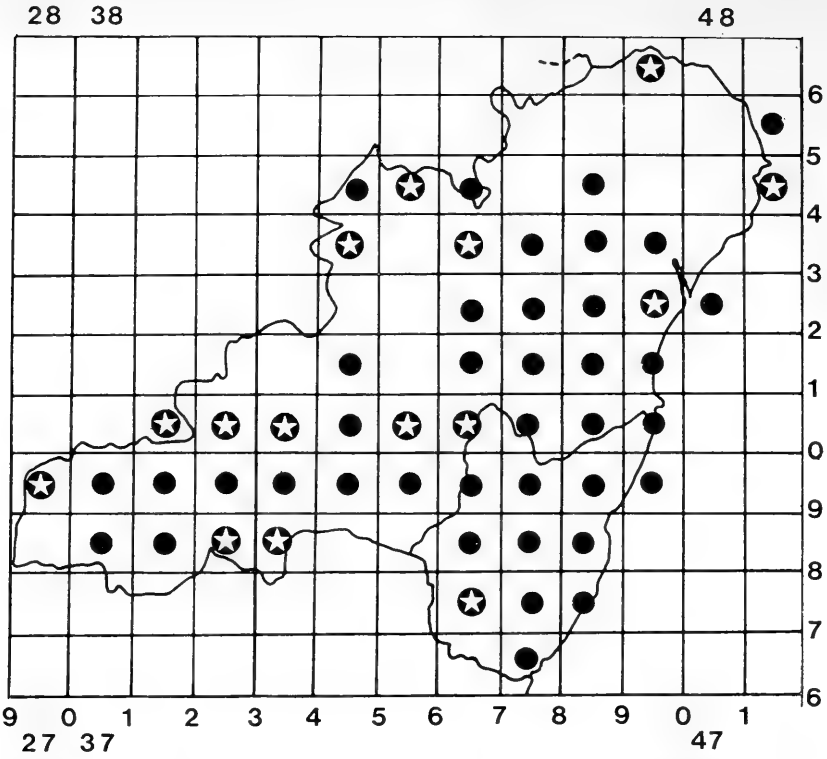

Fig.1 – Map of Aberdeenshire and Kincardine showing recorded squares.

✪ Fewer than 20 records
● More than 20 records

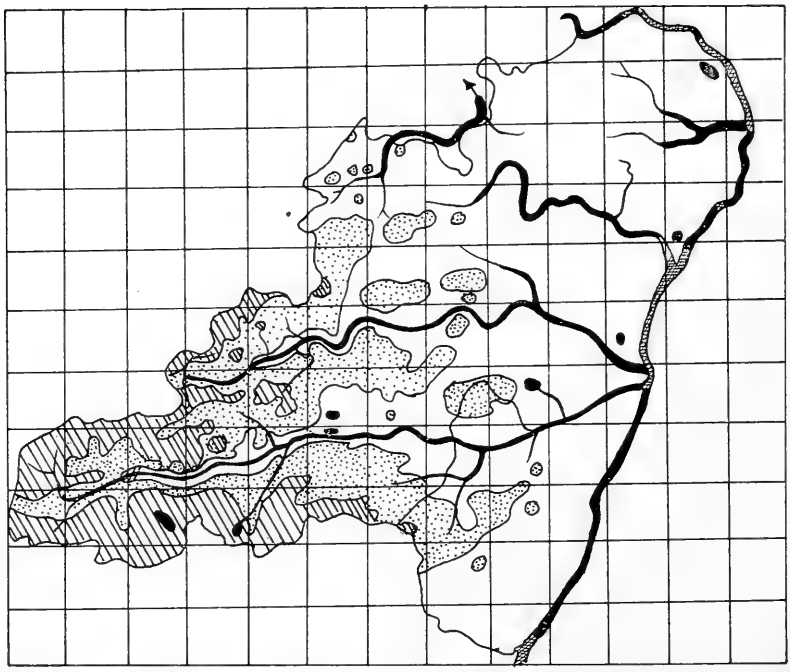

Fig. 2 – Coastal types, river valleys and high ground

Sand dunes
Rocky shore and rivers
Major lochs
1000 ft. and above
2000 ft. and above

The Origin and Distribution of Aberdeenshire and Kincardine Lepidoptera

By R. M. Palmer[1] and M. R. Young[2]

Introduction

It is only since the inception of the various national distribution schemes (e.g. Perring and Walters, 1962; Heath, 1970) that we have known anything but the broadest details of the distribution of all but our rarest species of animals or plants. These broad details have been used previously as the basis for studies on the origins of the groups (e.g. Beirne, 1952; Godwin, 1956). Now, however, at least with the Lepidoptera, it is possible to look in more detail at the distribution of individual species and so to speculate on their origins in more local terms.

Aberdeenshire and Kincardine were chosen for such a study primarily because sufficient data were available (Palmer, 1974-76; Palmer & Young, 1977). Furthermore the area includes a wide range of habitats positioned in an interesting and atypical part of the British Isles. Together they are large enough so that the 10 km. square system used by the national distribution schemes is of a scale which corresponds with the physical features so allowing interesting zoo-geographical comparisons to be made.

This study attempts first to identify the main components of the lepidopterous fauna of Aberdeenshire and Kincardine and then includes speculation on their origin (in local terms).

The Data

The data used are those on which Palmer (1974-76) and Palmer & Young (1977) were based with the addition of more recent records collected by the authors, Mr. P. Greig-Smith, Mr. P. Smith and Mr. N. Forteath. This includes all known published records and those of many local collectors as acknowledged in Palmer's papers. Only recent records are used in the present study except for species whose status is certain.

The records are grouped within 10 km. squares of the national Ordinance Survey grid.

Some parts of the area have not been adequately recorded (notably north Aberdeenshire and south, inland Kincardine) but the spread of recorded squares (see fig. 1) is such that general distribution patterns are clear.

The Study Area

The original vice counties of North and South Aberdeenshire and Kincardine together contain many contrasting habitats. For the purpose of this paper these have been classified generally as follows

Coastal — sand dune systems
— rocky shores

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Inland — farmland (including arable and pasture)
— deciduous woodland
— coniferous woodland
— lowland heaths
— upland vegetation
— river valleys
— other wetlands (carr, marsh, bog, etc.)

The coastal types, the river valleys and land over 1,000 ft. and 2,000 ft. are shown on fig. 2.

In general terms north-east Aberdeenshire and the coastal plain are farmland; west Aberdeen and inland Kincardine are heaths of varying altitude and these areas are dissected by the Dee, Don, Ythan and Ugie river systems.

Coniferous woodland is largely confined to upper and middle Deeside, Benachie (in mid Aberdeenshire) and parts of Kincardine; deciduous woodland is scarce and discontinuous and there are many lowland heaths scattered through the farmland area.

Rocky and sandy coastline alternates and is of approximately equal length.

Climatologically the area is also diverse. There is a small euoceanic northern-temperate area in south Kincardine whilst most of the lowland is euoceanic hemi-boreal, the north-eastern fringe being rather drier. The upland area ranges from hemioceanic southern-boreal to hemioceanic upper oro-arctic on the high tops (Birse, 1971).

Most of the area has relatively base poor soils, with extensive granitic areas, but there are scattered, small serpentine and limestone outcrops. These are isolated but have some entomological interest due to the presence on them of calcicole plants such as *Helianthemum chamaecistus* Mill. (Rock-rose) and *Anthyllis vulneria* L. (Kidney Vetch).

The Lepidopterous Fauna

To assist in discussion of the origin of the fauna it seemed appropriate to identify the major groups of species with respect to the overall habitat distinctions. These groups are as follows: —

1. Sand dune species:

A small number of moths, exemplified by *Euxoa cursoria* (Hufn.) and *Agrotis vestigialis* (Hufn.) (fig. 3), are restricted to the sandy coast (apart from one stray specimen of *A. vestigialis* found inland). We have too little information to know if they extend to the north-eastern sand dunes. In some cases these have a foodplant with a restricted distribution (e.g. *Agrotis ripae* (Hübn.) which feeds on *Cakile maritima* Scop.), however other factors are obviously implicated for other species. *Mythimna litoralis* (Curtis) is now apparently restricted to the extreme south-east coast of Kincardine (although it was reported by Cowie, 1901 from Aberdeen) and this is presumably climatological as its foodplant (*Ammophila arenaria* (L.)) is found on dunes throughout the region.

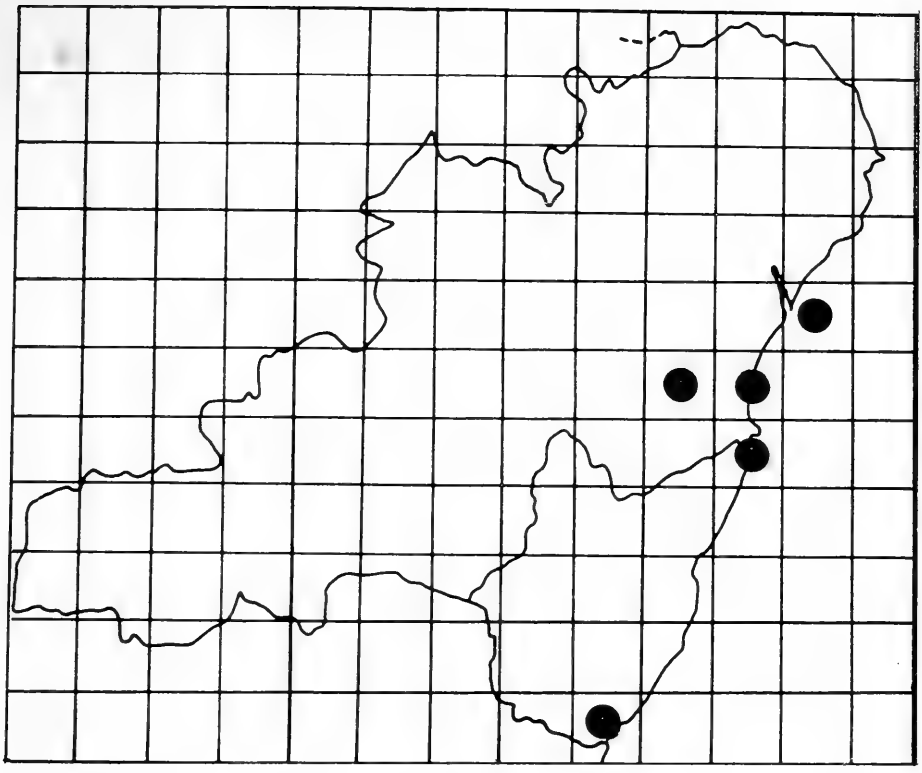

Fig.3-The distribution of Agrotis vestigialis Hufn.
a sand dune specis

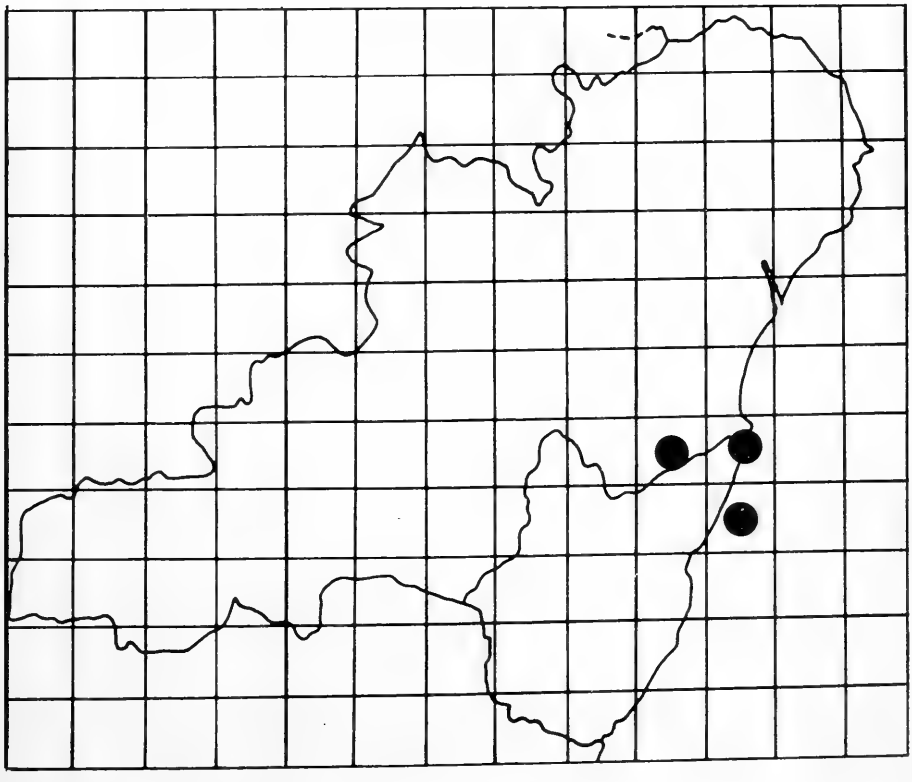

Fig.4 - The distribution of Lobesia littoralis (H.and W.)
a species of rocky shores

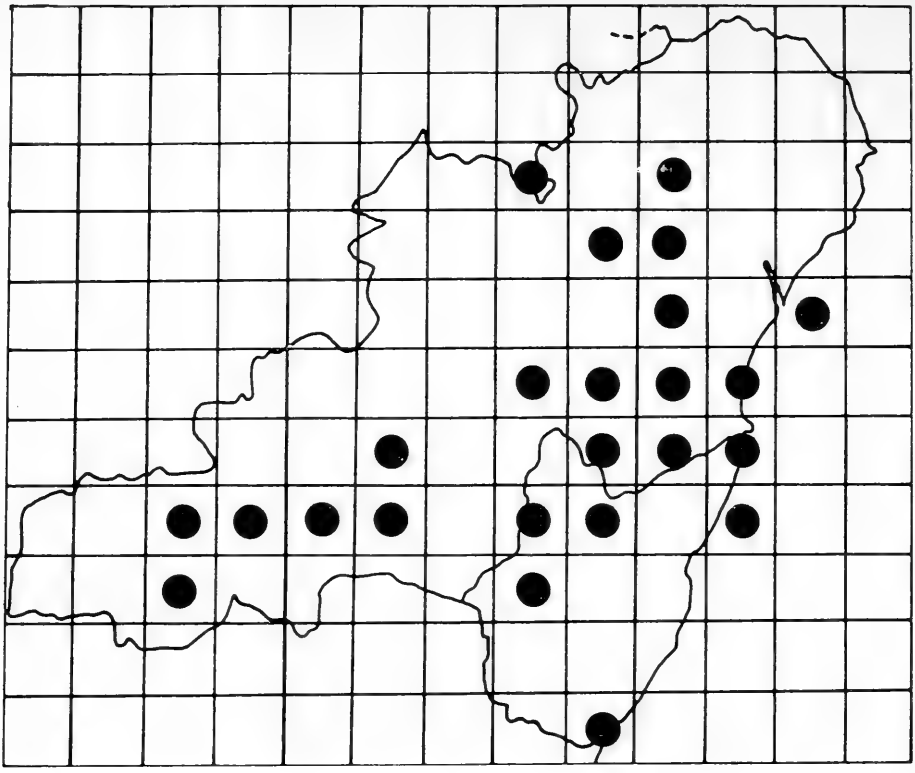

Fig. 5 - The distribution of Agriphila straminella (D.and S.) a general lowland species.

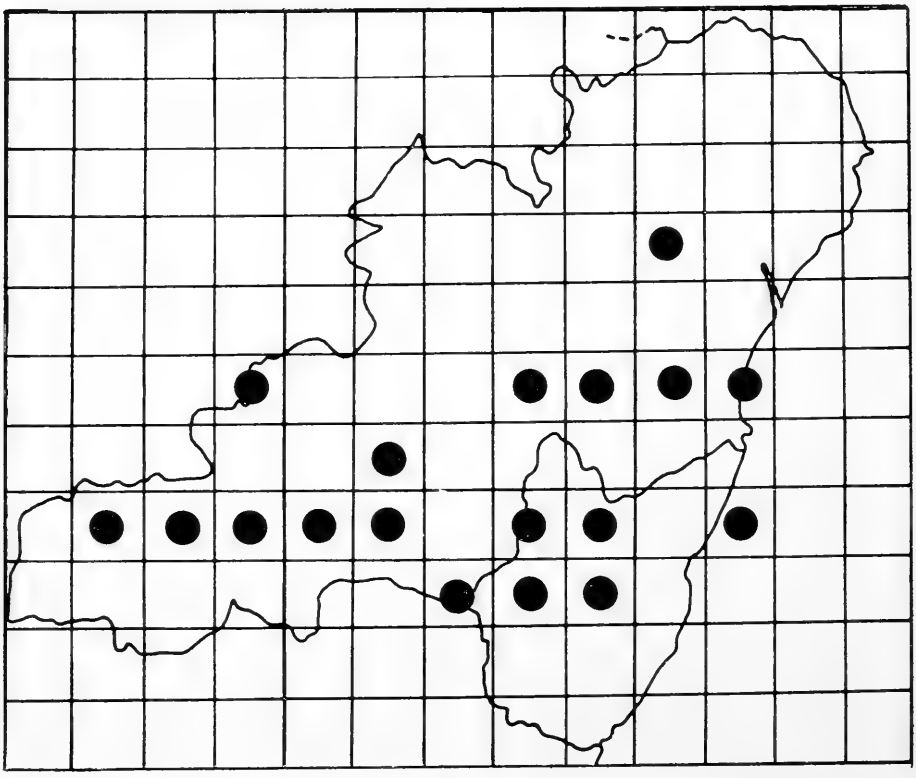

Fig. 6 - The distribution of Ematurga atomaria (L) a general heathland species

2. Rocky coast species:

A similar number of species are confined to, or are most abundant on, the rocky coasts.

Lobesia littoralis (Humphreys and Westwood) (fig. 4) is of this group and is typical of several others in that it is confined to the Kincardine coast. Other group members are (for example) *Standfussiana lucernea* (L.) and *Eilema lurideola* (Zincken), although the latter has occasionally been recorded inland; two further examples are not restricted to the coast, although they are far commonest there, but at least in the past have been recorded inland, namely *Cupido minimus* (Fuessly) and *Aricia artaxerxes* (Fab.). The latter is sometimes abundant at its coastal sites, witness Reid (1893) "Muchalls has long been noted as a good locality".

The Kincardine section of the coast is botanically rich and so supports the largest lepidopterous fauna. In particular St. Cyrus, a national nature reserve on the south-eastern tip of the county, has a range of habitats including rocky areas, sand dunes and salt marsh (Robertson and Gimingham, 1951) and this variety, combined with its relatively dry and warm climate, make it a prime entomological site.

3. General lowland species:

Many species are found generally throughout the lowland zone. Obvious examples are *Xestia xanthographa* (D. & S.) and *Xanthorhoe montanata* (D. & S.) and fig. 5 shows this distribution for *Agriphila straminella* (D. & S.). The group includes many species which feed on grasses, common crop plants or roadside weeds and most spread up the river valleys before being restricted altitudinally.

4. General heathland species:

Several species are associated with heaths but are not restricted to the upland areas. They are scattered over the whole region wherever heaths are to be found and so species have to be assigned to this group by reference both to their distribution and to their foodplants. *Lycophotia porphyrea* (D. & S.) is an excellent example, as are *Ematurga atomaria* (L.) (fig. 6) and *Neofaculta ericetella* (Hübn.).

5. Upland species:

An important group of species are found either only above a certain height or over a restricted altitudinal range. In some cases this is determined by the range of the foodplant. *Semiothisa carbonaria* (Clerck) (fig. 7), for example, is found with its foodplant *Arctostaphylos uva-ursi* (L.) down to 500 ft. In other cases, however, altitude (and hence presumably climatic conditions) seems pre-eminent; *Psodos coracina* (Esper) is found only above 2,000 ft. and is restricted to areas so exposed that the vegetation and soil are eroded, whereas its foodplant, *Empetrum nigrum* L., is unrestricted and reaches sea level on the sand dunes. Many species show an intermediate preferred altitudinal range; *Coenonympha tullia* (Mull.) is found between 500 and 2,000 ft., for example, and is restricted to rather boggy areas.

As might be expected in an area which is truly mountainous, many upland species are present representing most families and including, for example, *Xestia alpicola* (H. and W.), *Udea uliginosalis* (Stephens), *Olethreutes schulziana* (Fab.) and *Stigmella tengstroemi* (Nolcken).

6. Woodland species:

A wide range of species are restricted to woodland of one kind or another. This group is heterogeneous as regards their origins for some trees, for example *Pinus sylvestris* L., *Betula* sp. and *Juniperus communis* L. are native to the area, whereas others, for example *Quercus* sp. or *Picea* sp., are not. This is discussed further below.

They are very few oak woods in the area and only three are at all extensive but *Dichonia aprilina* (L.) is to be found in each of these and *Eriocrania subpurpurella* (Haworth) in at least one.

Birch, by contrast, is found throughout the region and forms extensive, but often sparse, woods, particularly along Deeside. Several species are restricted to these woods, for example *Achyla flavicornis* (L.) and *Diurnea fagella* (D. & S.).

Juniper is found as thickets in several places in middle and upper Deeside and associated with these are a number of moths, exemplified by *Thera cognata* (Thunb.) (fig. 8).

Pine is probably native but artificial plantings have confused its distribution pattern. Amongst several others *Semiothisa liturata* (Clerck) and *Bupalus piniaria* (L.) are restricted to pine woods and are generally widespread. The non-native conifers (e.g. *Picea* sp.) also have moths associated with them as, for example, *Eupithecia lariciata* (Freyer) with *Larix* sp. and *E. tantillaria* (Boisd.) with *Picea* sp.

7. River valley and wetland group:

Some species are restricted to damp areas and are found in bogs or along the river valleys. *Anthocharis cardamines* (L.) is a case in point (fig. 9) being restricted to areas where *Cardamine pratensis* L. is abundant (generally river valleys) and *Harpyia furcula* (Clerck) and *Acronicta menyanthidis* (Esper) are examples of species found generally in very wet bogs and marshes.

Although some members of the group are widespread, others are confined to specific types of wetland. *Euphydryas aurinia* (Rott.) is now found only in one small bog where presumably its exact habitat requirements are met. In lowland areas improved drainage is probably the single most important habitat change to have taken place since records have been available (c. 1890) and the increasing restriction of species like *E. aurinia* is likely to be due to this.

8. Specialist species:

Some species do not fit easily into any group but obviously have special requirements. These include a number such as *Argynnis aglaia* (L.), *Crambus pratella* (L.) (see fig. 10) and *Gnophos obfuscatus* (D. & S.) which are found both on the coast and in the valleys of upper Deeside. What (if anything)

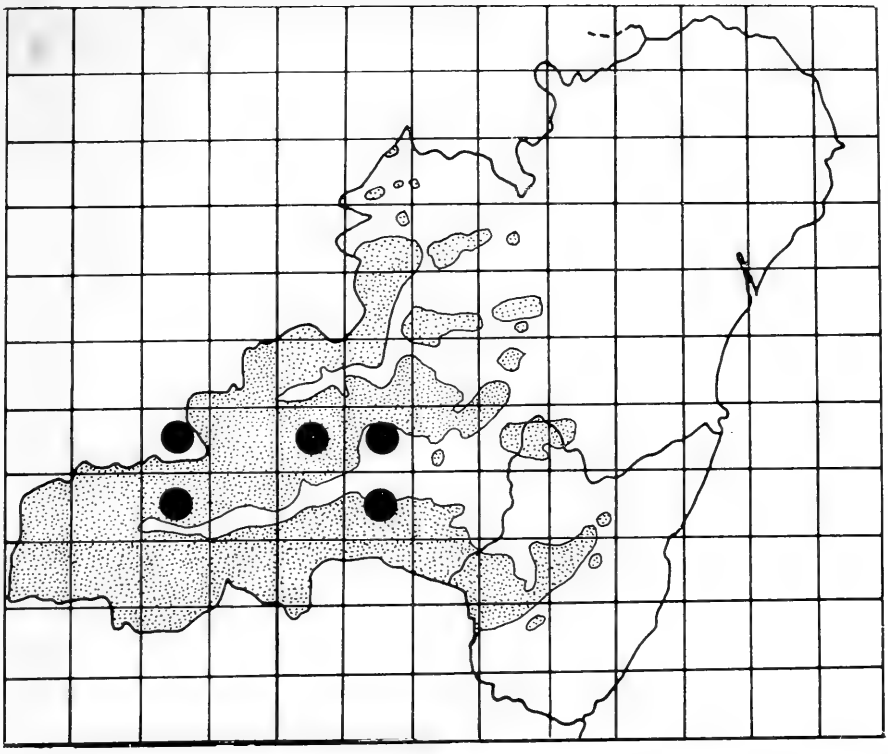

Fig.7 – The distribution of Semiothisa carbonaria (Clerck) an upland species.

Land over 1000 ft.

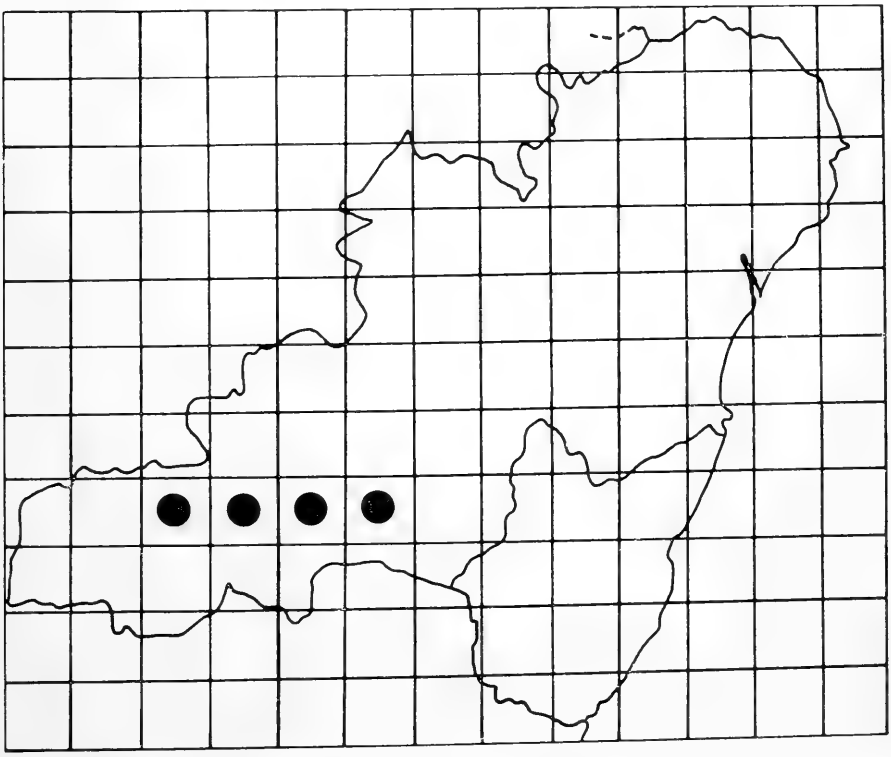

Fig.8 – The distribution of Thera cognata (Thunb.) associated with Juniper

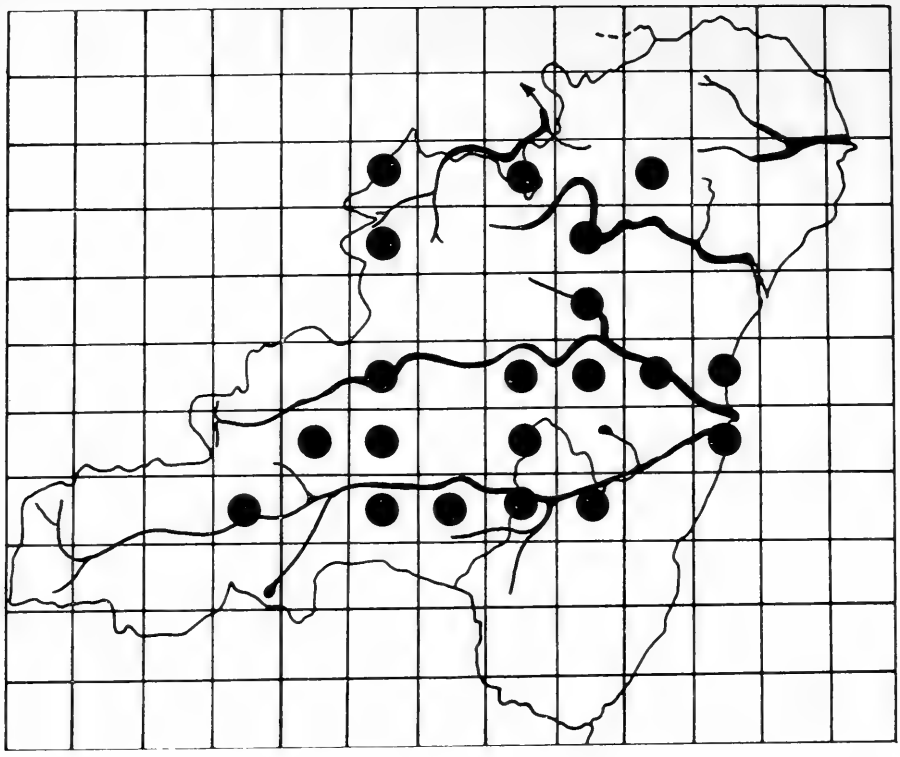

Fig. 9 - The distribution of Anthocharis cardamines (L.)
a river valley species

River valleys

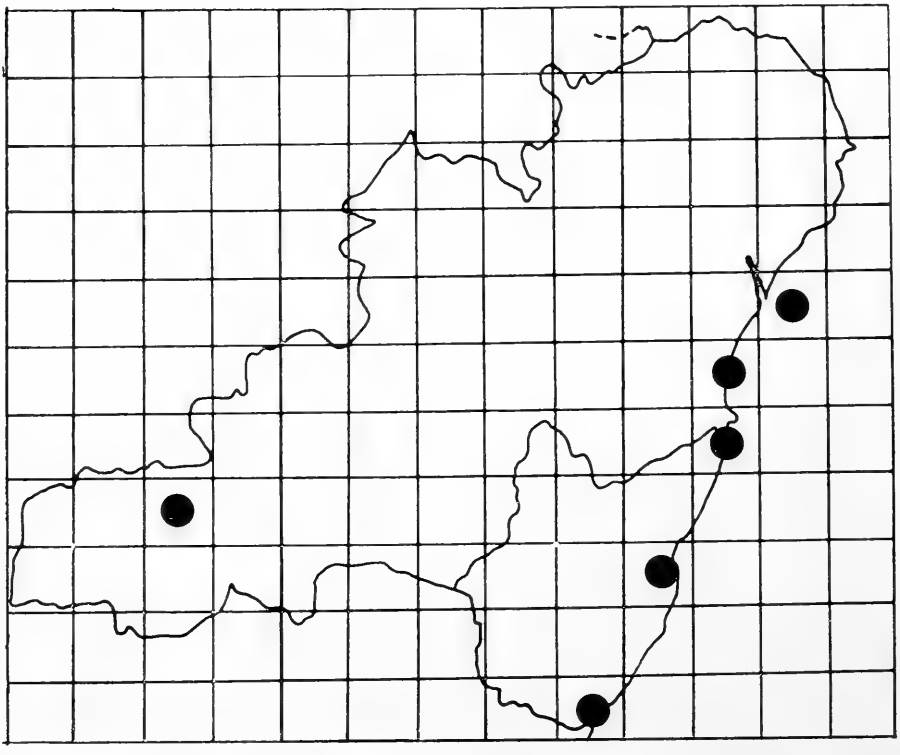

Fig. 10 - The distribution of Crambus pratella (L) - a species of coast and hill

these habitats have in common remains uncertain. Perhaps the species in question have separated into distinct populations with differing requirements.

Others such as *Zygaena exulans* (Howenworth), *Perconia strigillaria* (Hübn.) and *Epione paralellaria* (D. & S.) seem to be restricted to single localities, presumably by a combination of botanical, climatological and edaphic features since their foodplants are all widespread. The case of *Selidosema brunnearia* (Vill.) is even more difficult to explain. Its only site in the region is St. Cyrus in south-eastern Kincardine where its usual foodplant (*Calluna vulgaris* (L.)) is absent.

9. Migrants:

Many species are certainly migrants not normally resident in the area, *Vanessa atalanta* (L.) and *Cynthia cardui* (L.) being excellent examples. The group includes species of all groups and sizes from *Plutella xylostella* (L.) to *Acherontia atropos* (L.) and their origins provide valuable clues as to the possible origins of some of the resident fauna. It seems clear, for example, that the North Sea provides little barrier for species from Scandinavia (e.g. *Eurois occulta* (L.) and *Nymphalis antiopa* (L.)), whilst others orginate in the south, *C. cardui* being a good example. (Incidentally, *E. occulta* also occurs as a resident being darker than the migrant individuals and being found only in inland areas.)

Origins of the Fauna

These overall groupings will surprise no-one and do not necessarily indicate a common origin amongst the group members.

There are two types of data which do indicate the possible origins of certain species and these are (1) present day distributions and (2) the recorded spread of certain species in the last 100 years. Excluding migrants which have not established themselves and species probably unrecognised or "missed" in the past, there are at least nine species which have spread within the area or are complete newcomers since 1890. Some of these provide clear evidence of the directions of their spread.

Idaea seriata (Schrank) was recorded on the Kincardine coast in 1878 and 1902 but is now quite common near Aberdeen and has been recorded as far inland as Ballater in middle Deeside. *Polychrysia moneta* (Fab.) was recorded in Aberdeen in 1945, spread at least as far as Kemnay (12 miles N.W. of Aberdeen) until 1955 and was last seen in Aberdeen in 1958. These examples seem to indicate an immigration route from the south through Kincardine.

This pattern is reflected in the present distribution of several species in that they are most common in Kincardine and least so in North Aberdeenshire (e.g. *Hadena bicruris* Hufn., see fig. 11).

There are a few contrasting examples which may have colonised the area from the north. *Erebia aethiops* (Esp.) is

found in Aberdeenshire most commonly near Huntly where it is at the eastern end of its Moray range. (The small population around Braemar is discussed later.) The population at Huntly, lying as it does north of the mountainous fringe in the area, is hardly in the Aberdeenshire area proper but is of interest as Barbour (1976) reports that it has extended into the Moray area in the last century. Now it is common in most woods in that area (Barbour *pers. comm.*) and it will be of interest to see if it can spread further into Aberdeenshire over the Glens of Foudland (700 ft.) which are the lowest pass on the county's northern fringe.

There are other species which may also have spread from the Moray coast where they have at least a foothold (e.g. the single Aberdeenshire record of *Mormo maura* (L.)) and this may also be the origin of our only specimens of *Spilosoma luteum* (Hufn.) which have been found near Turriff and near Aberdeen.

These illustrate the problem of lowland migration into the area. The north-eastern coastal plain is very narrow and exposed and does not seem to have been used. This leaves only the Kincardine coastal belt which has already been mentioned. It is a continuum of farmland, heaths and coniferous woodland but is narrowed immediately to the south of Aberdeen city by the western spur of the Cairngorms which extends to within several miles of the sea and is 700 ft. and above in height. [However, if this narrowing presented a real barrier to immigration some species should be present in Kincardineshire but not in Aberdeenshire. This does not seem to be the case.]

There are a number of passes in the Cairngorms and the other fringing hills, but all are above 700 ft. The Glens of Foudland (see above), for example, and its adjacent valleys, form one possible migration route but otherwise access over the main Cairngorms is at 2,000 ft. or more. Widespread migration through these passes seems less likely than coastal migration but the population of *E. aethiops* in upper Deeside may be the result of migration through Glenshee, Glen Tilt or the Lairig Ghru. Specimens have been seen at 2,000 ft. in Glen Tilt (Payne, *pers. comm.*). Of course migration through mountain passes has been observed on many occasions (Williams, 1958) but apart from *E. aethiops* does not seem to be implicated as an immigration route into Aberdeenshire if present-day distributional evidence is to be accepted.

Species present on the coast have obviously found the alternating sand and rock to be no barrier and *Agrotis ripae* and *A. vestigialis,* for example, are found in both Kincardine and Aberdeenshire.

The spread of some species into north-east Scotland seems to have followed the increase or introduction of their foodplants. This applies to many spruce and larch feeders and the recent dramatic increase of *Pterophora chlorosata* (Scop.) probably reflects the continuing increase of bracken in the area. It is of great interest that *Photedes elymi* (Treitschke)

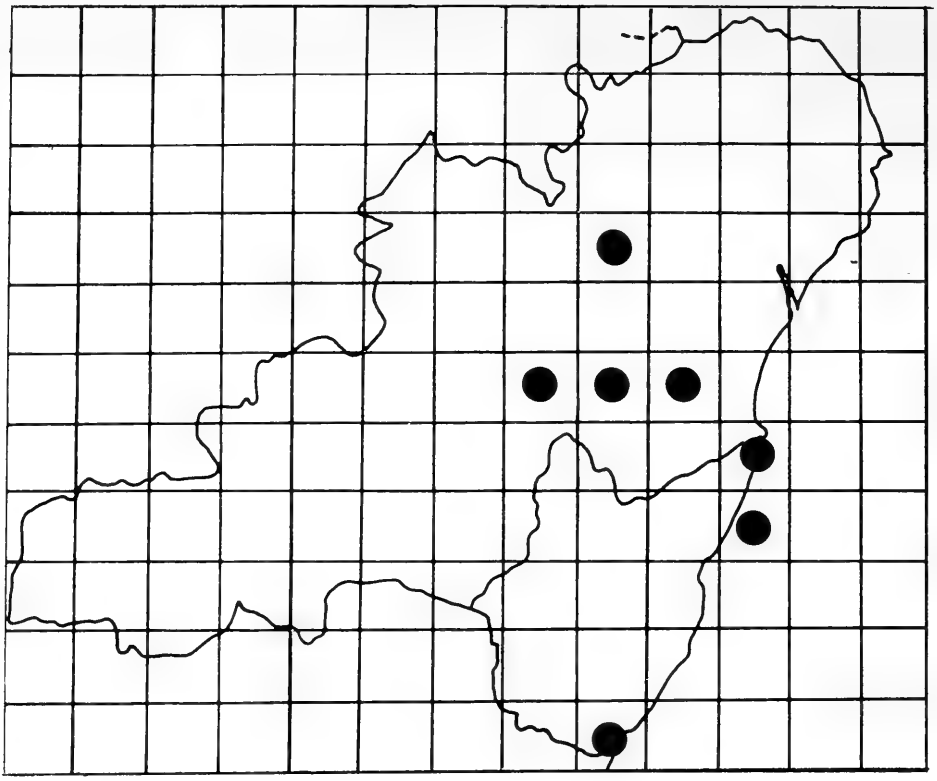

Fig.11 - The distribution of Hadena bicruris (Hufn.)
a generally southern species in the area

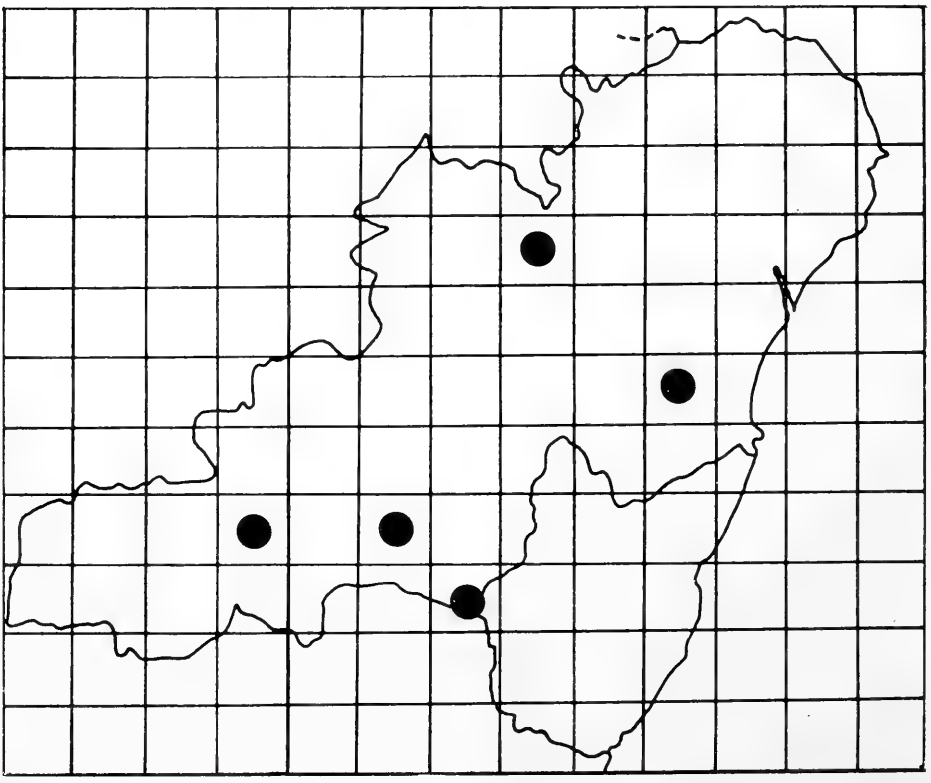

Fig.12 - The distribution of Semiothisa brunneata (Thunb.)
a lowland, northern species

has recently spread from immediately to the south of Kincardine at Montrose, where it is well established, to St. Cyrus, Kincardine where Lyme grass (*Elymus arenarius* L.) is now common. Perhaps it will continue to spread further up the coast.

All the species mentioned so far (except *Erebia aethiops*) are of a southern distribution in the British Isles and Europe generally and probably colonised the area in post-glacial times. No land remained unglaciated in north-east Scotland in the last major glaciations (that is the three main glaciations in the fourth Pleistocene ice age) and so there are no interglacial relicts amongst the fauna. These post-glacial species will have spread into the area at different times and the recent extensions of some species (and the subsequent retreat of *Polychrysia moneta*) are probably part of the continuing fluctuations in range of species in a dymnamic balance with the changing climate. North-east Scotland is certainly at the edge of the range of many species, *Inachis io* (L.), for example, is resident in southern Scotland but is found in Aberdeen only sporadically.

There are also many species found in the "upland" group which are more generally northern or upland in distribution and which as British species are glacial relicts. They would have extended further south in Britain during the last glaciation and have since retreated as the climate has ameliorated (Beirne, 1952 and Ford, 1950). Those now found at low altitude in Aberdeenshire (e.g. *Anarta cordigera* (Thunb.)) were probably found further from the ice front than others (e.g. *A. melanopa* (Thunb.)) now found only above 2,500 ft. Some species in this group whilst being northern are also lowland (e.g. *Semiothisa brunneata* (Thunb.) see fig. 12) and are found on the lower fringe of the Cairngorms.

Presumably these glacial relicts are the oldest colonists of the area and if the climate ameliorates further they should retreat to increasing altitude. There is no evidence of such a change since 1890 unless the recent lowland scarcity of *Hyppa rectilinea* (Esp.) and *Olethreutes schultziana* (Fab.) is such. (It seems more likely to be lack of searching at the appropriate season.)

Some of these upland species are effectively isolated in the Cairngorms but there seems to be no evidence that they are now distinct morphogenetically from populations in the other Scottish mountain areas. Perhaps no one has looked for this!

It seems likely, therefore, than the vast majority of the Aberdeenshire and Kincardine lepidoptera are either glacial relicts or post-glacial colonists by the lowland routes or directly across the North Sea. That leaves a few anomalous species, some of which have already been mentioned. *Zygaena exulans,* for example, is probably a glacial relict which has specialised to allow it to survive outside what is now its normal range. *Endromis versicolora* (Linn.), which is widespread in middle Deesde, remains another celebrated puzzle as do *Bembecia muscaeformis* (Esp.) and *Setina irrorella* (L.) (if the latter is

still present) both of which have a few scattered, coastal sites in Britain.

Another interesting example is *Erynnis tages* (Linn.) which has been found sporadically over the whole of north-eastern Scotland (Harper, *pers. comm.*; Barbour, 1976) and has been known in Aberdeenshire since 1855 (MacGillivray, 1855). Presumably this primarily southern species is a post-glacial colonist which is here on the edge of its range and so has very exact habitat requirements and maintains only a slender presence.

Summary

1. On the basis of the authors' data (Palmer, 1974-76; Palmer & Young, 1977) the lepidoptera of Aberdeenshire and Kincardine is grouped into nine groups corresponding to major habitat divisions and these groups are discussed.
2. By examining these groups, records of the spread of recent colonists and the geographical nature of the area it is postulated that (a) the fauna is a mixture of glacial relicts and post-glacial colonists and that (b) the main invasion route has been along the Kincardine coastal plain. However there is some evidence to suggest that a few species may have invaded Aberdeenshire from Moray to the north and that this may be continuing.

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Avian Predation on Butterflies — Again

By Dr. A. M. Shapiro*

A few decades ago the theory of mimicry was ostensibly discredited by negative evidence: birds "did not eat" butterflies. A bit later the notion that industrial melanism was a consequence of selective predation was pooh-poohed: birds "did not eat" moths at rest. Still more recently the passage of plant poisons through food chains was ridiculed because birds *did* eat "unpalatable" butterflies. Bird predation on butterflies is a volatile subject with great Darwinian import, and interest in it goes in seeming cycles. Most recently Muyshondt and Muyshondt (1976, *Ent. Rec.,* **88**: 283-285) have revived the issue, asserting that in long field experience in the Neotropics they have seen only two bird attacks on flying butterflies. This observation, however at variance with prevailing dogma — or precisely because it is — deserves serious consideration; all the more since it comes from low latitudes, where both predation and its evolutionary sequelae are said to be mostly highly developed.

It is *not* an adequate defence of the reality of avian predation to assert that mimicry is inexplicable without it. This is the sort of "proof" adduced for the existence of phlogiston or, later, the ether. On the other hand, negative evidence is proverbially rickety. A few personal observations bear on this. I spend more time afield than most people, some 200 days a year, and I see perhaps five such attacks a year on the average. They are infrequent enough in my purview that I note them carefully, and I am inclined to agree with the Muyshondts that by and large flying butterflies are rarely pursued in the air. Moreover, most such pursuits are unsuccessful.

My own experience with mass migrants (mainly *Nymphalis californica* and *Vanessa cardui*) also matches the Muyshondts': despite vast abundance, predation seems to be almost nil. The migrant case departs from the usual in that the animals can often be had with little or no effort and are also unusually valuable nutritionally, being full of yellow fat. Migratory Nymphalids are presumably edible, being cryptically coloured. They are as a rule an unpredictable resource, but why have we no records of birds (which are otherwise such good opportunists) making use of them when they are available — unless, as the Muyshondts suggest, they are simply not recognised as food items?

Despite these circumstances, avian predation is definitely important to butterflies. The data on beak-mark frequencies, which the Muyshondts treat rather summarily, bear witness to this. In 1974 I published some statistics on beak-mark frequency in monthly samples of common multivoltine butterflies in lowland central California (*American Naturalist,* **108**: 229-232). These were based on 19,787 specimens of four species

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collected in 1972; 1,044 of these were beak-marked, or 5.3%; for individual monthly samples the percentage beak-marked varied from 1% to 17%, and there was a clear pattern of higher frequency in March-April (before bird breeding season) and October-November (well after). I interpreted these data as meaning that butterflies were attacked by birds more frequently at those times of the year when they were relatively common and more preferred classes of prey, e.g. grasshoppers, were proportionately scarce. Note that a beak-marked butterfly represents an *unsuccessful* predation, for whatever reason; thus it could be that the lower incidence of beak-marked specimens in summer means more successful predation, though that seems unlikely (unless butterflies are less palatable, hence more likely to be rejected after being taken, in cold seasons). This temperate-zone muddle is confusing enough; whether anything like it occurs in the less seasonal tropis, I have no idea. Most of the beak marks in this study were, as the Muyshondts note, symmetrical — indicating that the animal was taken while at rest, with the wings over the back. Such attacks are readily observed on Clouded Yellows (*Colias*) in lucerne fields. They are probably the most common attacks on butterflies. Few birds (fly-catchers, swallows) make a living by taking small insects in mid-air, and they are only able to do so because they take them at a high enough rate to compensate for the high energetic cost. Such birds do not as a rule seem to prey on butterflies.

In summary, then, our present knowledge justifies the assumption that avian predation on mid-latitude butterflies in flight is infrequent, and the same may be true in low latitudes. Predation on resting butterflies is another story. In those species which differ in their dorsal and ventral coloration, the latter is always the cryptic surface. It may be no accident that species involved in mimicry associations differ hardly, if at all, between the two surfaces!

We are just beginning to learn about the adaptive significance of the roosting behaviour of butterflies at night and in bad weather. One of the functions of gregarious roosting, which occurs in many Neotropical taxa, may be to minimise predation. The migratory Monarch (*Danaus plexippus*) forms large overwintering aggregations, and predation is known to occur from them. Such aggregations bring together individuals of greatly differing palatabilities and increase the likelihood of exposing all the resident predators to emetic exerperiences. We do have a record (C. M. Fadem, in press) of a very small peripheral winter roost virtually eradicated, apparently by a single Mockingbird (*Mimus polyglottos*); the butterflies are believed to have been of low emetic potency.

Here in California many small vacant-lot butterflies spend the night at the tips of flimsy weeds which will not bear a bird's weight and which extend above a bird's reach from the ground. In this position they are seemingly immune from attack when the birds are foraging around dawn, when the dew has not yet evaporated and the air is still too cold for

butterflies to fly. Losses from such positions are virtually non-existent. If the butterflies are removed with forceps shortly before dawn and set on the bare ground below the weeds, nearly all have been eaten within an hour after sunrise. (If they are removed at dusk and set on the ground, most are gone before morning — the mice or shrews have got them.) There is certainly much more to avian predation on butterflies than attacks in mid-air!

A Week in Weymouth in July 1977. — I spent a week in the Weymouth area from 16th to 23rd July, 1977 hoping in particular to renew my acquaintance with the Lulworth Skipper (*Thymelicus acteon* Rott.), and also to explore the immediate vicinity of the town (including Portland Bill) and the coastal paths in both directions.

The weather was generally good with reasonable spells of sunshine, though rather windy at times, and I recorded the following species of butterfly in order of declining abundance with the last four each contributing only one sighting: — *Melanargia galathea* L., *Maniola jurtina* L., *Pyronia tithonus* L., *Thymelicus sylvestris* Poda, *Ochlodes venata* B. & G., *Aglais urticae* L., *Coenonympha pamphilus* L., *Pieris brassicae* L., *Pieris rapae* L., *Pieris napi* L., *Polyommatus icarus* Rott., *Pararge aegeria,* L., *Thymelicus acteon* Rott., *Aphantopus hyperanthus* L., *Polygonia c-album* L., *Vanessa atalanta* L. and *Vanessa cardui* L.

It was a pleasant surprise (certainly for an observer from Stafford) to note the profusion of *galathea.* My main quarry, *acteon,* was present in small numbers at a locality west of Lulworth Cove, whilst the most surprising omission during the week was surely *phlaeas.* A particularly productive area was a long bank of brambles, grasses and various flora just north-east of Ferrybridge. This locality held good numbers of *galathea, jurtina, tithonus, sylvestris* and *venata,* and was the only area where *icarus* and *hyperanthus* were recorded. Several small skippers at this site had dark brown tips to the undersides of the antennae, which I assume were atypical *sylvestris* or *lineola* and I should be interested to hear if any other observers have seen the latter species in the Weymouth area. Incidentally, this bank was the classic habitat for the Great Green Bush Cricket (*Tettigonia viridissima*) and a rather cursory search revealed five or six of these insects.

The rough, sloping meadows west of Osmington Mills were excellent for *galathea* and *jurtina,* whilst the only *cardui* of the week was imbibing at wild privet near Redcliff Point. The only moths recorded were the day-flying *Callimorpha jacobaeae* L., *Zygaena filipendulae* L., *Plusia gamma* L., *Otholitha chenopodiata* L. and, at Radipole Lake, a single *Ourapteryx sambucaria* L. — G. Summers, 23 West Close, Stafford, ST16 3TG.

Inter-nest Battles of *Formica lugubris* Zetterstedt (Hymenoptera: Formicidae) in Ireland

By JOHN BREEN, B.Sc., Ph.D.*

Elton (1932) drew attention to the existence of territorial behaviour in wood ants (probably *Formica rufa* L. *s.s.*; I use the term wood ant, after Sudd 1967, p. 80, when the species' identity is uncertain) and described an attack which took place on 31.iii.1929 in which one nest destroyed another. However, he considered that wood ant territories were normally maintained without hostility. The existence of territories without inter-nest hostility has also been reported in wood ants (Dobrzanska 1958), *F. pratensis* Retzius and *F. uralensis* Ruzsky (Stebaev and Reznikova 1972) and *F. pratensis* (Reznikova 1974).

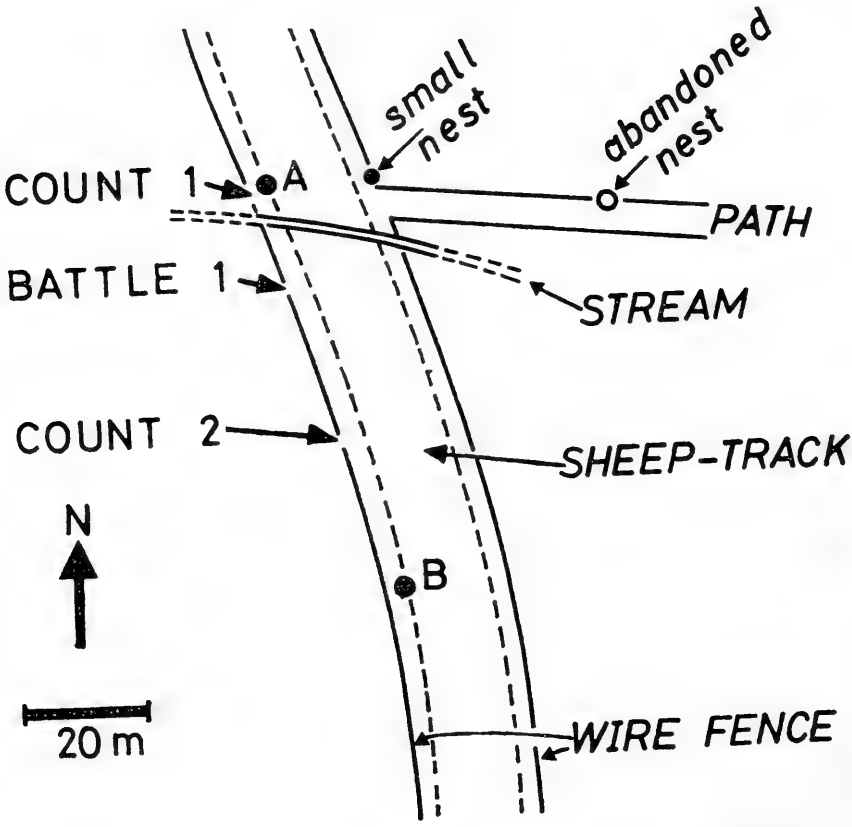

Fig. 1

Map of the site in Moore's Wood, South Tipperary, where "spring battles" were observed in 1973 and 1974. The wood, bounded by the wire fence, is 42 year old Scots pine. A and B are the two nests described in the text. The "small nest" is the new site of the "abandoned" nest, and foragers from this nest and nest A have never been seen crossing the "sheep-track".

Marikovsky (1962) described "savage battles" amongst neighbouring wood ant nests. DeBruyn and Mabelis (1972) studied inter-nest fighting, which they refer to as "spring battles", in *F. polyctena* Först. They suggested that the battles

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occur due to the increasing encounters between workers from neighbouring nests during the "exploratory phase April/May" of foraging. There does not appear to be any reported case of inter-nest fighting in *F. lugubris.*

During field work in connection with an ecological study of *F. lugubris* (Breen 1976), two observations were made of "spring battles" in different years. Both occurred at the same site in Moore's Wood, South Tipperary, Irish Grid R 93 28 (figure 1). Two nests, A (basal diameter 0.82 m.) and B (basal diameter 1.09 m.) were located 70 m. apart. Both were mature nests which produced alatae in 1973. Their territories were separated by a stream which dries out in summer. On 27.v.1973, dead ants were being transported towards each nest from a fighting area 0.04 $m.^2$, located 19 m. from nest A. On 1.vi.1973, "normal" foraging was in progress, and the routes from both nests did not approach the fighting area.

On 18.v.1974, both nests were again observed in battle at 17.30 (air temperature 12.5°C.). On this occasion foragers from nest B had reached nest A, the surface of which was now the fighting area, and dead ants were being transported back to nest B. Observation along the route connecting the two nests suggested that activity was greatest near nest B — possibly due to the imminent cut-off in foraging activity at the low evening temperature. Two counts of foraging activity were made (cf. figure 1), and gave these results:

Count 1 (10 minute count in both directions):
To nest A — 47 workers
To nest B — 29 + 5 carrying dead ants.
Count 2 (5 minute count in both directions):
To nest A — 82 + 2 carrying dead ants
To nest B — 91 + 16 carrying dead ants.

There were many (about 100) myrmecophiles running about on the nest surface during the attack (the staphylinids *Nototheca flavipes* Gr., *N. anceps* Er., and *Thiasophila angulata* Er. were the most common, and a single specimen of the spider *Thyreostenius biovatus* O.P.-Camb. was also taken). This is the only occasion I have ever seen such numbers of these myrmecophiles on the outside of the nest.

Nest A was totally destroyed by the end of May, and a route from nest B continued past nest-site A during 1974 and 1975. Hence, nest B gained additional territory as a direct result of the attack. The inter-nest battles may be an important territory regulating machanism when nests occur in proximity — as they do locally under certain plantation conditions in Ireland. Furthermore, the timing of the battles is interesting — early in the foraging year when the activity is focused on obtaining protein food (insect prey) for the larvae. One can speculate on the importance of a certain degree of cannibalism at this time of year. In contrast, from the end of May onwards, about 75% of returning foragers carry honeydew (Breen 1976).

Specimens from nest B, labelled "MW 256b" will be placed in the National Museum, Dublin.

Acknowledgements

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THE PRESENCE OF THYMELICUS LINEOLA OCHS. IN EASTBOURNE. — While collecting in the little known locality of Ratton Wood, near Willingdon, Mr. Parsons and I took an example of this species. This is not the first time it has been taken in the Eastbourne area, but the earlier colony has long since vanished owing to the completion of a housing project. No references are given in my literature to this species occurring in the county (except in the Biological Records Centre Provisional Atlas of British Butterflies). — M. HADLEY, 7 Beverington Close, Eastbourne.

DIANTHOECIA COMPTA D. & S. (LEP.: HADENIDAE) IN NORTHAMPTONSHIRE. — Following a male specimen of this species being taken in the actinic light trap in my Northampton garden on 8th July, 1975, I have this year taken two further specimens, a male on 9th July and a female on 22nd July, also in my actinic trap in Northampton. I was pleased to present the specimen obtained in 1975 tc the B.M. (Nat. Hist.). All three specimens were in perfect condition, which would seem to preclude their having travelled any long distance, and it seems hardly possible that they could have migrated so far inland. It appears, therefore, that this species has become established as a resident breeding species in Northamptonshire. A correspondent informs me that the larva feeds on sweet william, and that he has taken this species in Norfolk. — S. J. PATEL, The Studio Flat, 13 East Park Parade, Northampton.

Central and Northern Spain, May-June 1976

By H. G. Phelps*

When I had the pleasure of inspecting Lt. Col. Manley's fine collection of Spanish butterflies, I much admired his series of *Lysandra bellargus* Rott., particularly ssp. *alfacariensis* Ribbe which is a large race with particularly well-marked females. *Plebejus hesperica* Rambur is another interesting butterfly well represented in the collection. In the hope of obtaining specimens of these butterflies and also with the possibility of capturing *Iolana iolas* Och., I decided on a May-June visit to Spain in 1976.

Arriving with my car at Bilbao on the Swedish-Lloyd ferry ship S.S. Patricia on 15th May in a drizzle of rain, I took the coast road towards Santander. At Torrelavega I struck inland to Reinosa where I took the road south over the Puerto de Pozazal where I hoped to find *Zerynthia rumina* L. A cold wind was blowing over the pass and there were no butterflies on the wing. It was good however to be back in the lush countryside of Northern Spain, and my spirits rose at the sight of a hen harrier gliding low over the road. I later spotted two storks following a plough and picking up titbits turned up by the ploughshares. After negotiating the busy city of Burgos, I camped in a wood near Salas de los Infantes and lay awake to a late hour listening to nightingales and grasshopper warblers. This is a district rich in bird life and in the early morning other warblers joined in the chorus.

The next day the weather warmed up and in a flowery field on the other side of Salas I found *Aricia morronensis* Ribbe, *Polyommatus icarus* Rott., *Philotes baton* Berg., *Melitaea cinxia* L., and *Anthocharis cardamines* L. Further on towards Soria a clearing in pinewoods near Hontoria del Pinar produced *Boloria dia* L. and several *Everes argiades* Pall.

The village of Abejar was reached in the evening. It was apparent that this was a late season as the scrub oak was still in bud, and in this usually prolific area, butterflies were scarce. The following day in a field purple with masses of pasque flowers (*Pulsatilla vulgaris*), the following species were observed: *Clossiana euphrosyne* L., *Cyaniris semiargus* Rott., *Hamearis lucina* L., and a single specimen of *Heodes tityrus* Poda.

After lunch at Abejar I travelled on to Medinaceli and beyond the town I camped in a rough field just off the busy Madrid road. Here I was pleased to find a few fresh specimens of *Glaucopsyche alexis* Poda flying over a lush growth of bird's-foot trefoil (*Lotus corniculatus*). A fine warm morning saw me on the road at an early hour. I left the Madrid road at Alcala de Henares and made for Arganda where I obtained a room at the only hotel in this busy small town. The proprietor's daughter is married to a young Englishman from

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Blandford, Dorset, who kindly took me on a tour of the local bars.

During the evening I telephoned Dr. Gómez Bustillo of Madrid who is the co-author with Prof. Fernández Rubio of two books on Spanish butterflies. He kindly agreed to meet me the following morning at the village of Loeches for a day's collecting. He promised to show me a secret habitat of *I. iolas* which sounded very interesting. The doctor turned up in the morning with two charming lady companions all with nets. We went to a hillside where several bushes of bladder senna (*Colutea arborescens*) were growing. This is the foodplant of *I. iolas.* The ova are laid on the pods and the larvae feed on the seeds. It was a great thrill to see specimens of this fine blue coming to the bushes. I obtained several males and two females all in good condition. This race has been given the name *fidelis* Gómez Bustillo. A few *L. bellargus* ssp. *aidae* were also flying and I caught several females which have large orange submarginal spots and in some cases blue markings on the upperside. The habitat is a rather arid hillside with spiny plants and an occasional clump of horseshoe vetch (*Hippocrepis comosa*), rather dfferent from an English chalk down. I also took specimens of *P. hesperica* ssp. *matildae* Gómez Bustillo—another butterfly I had come a long way to see. This species was uncommon and only found near the foodplant — *Astragalus.* Other species on the wing were *Melanargia ines* Hoff., *M. psyche* Hbn., *Euphydryas desfontainii* God.. *Melitaea phoebe* D. & S., *Pontia daplidice* Hbn., *Melitaea didyma* Esp., *Pyronia bathseba* Fab., and *G. alexis.* After our enjoyable morning's collecting, Dr. Bustillo kindly entertained me to a fine meal at a local restaurant.

During the next four days I collected in the area of Arganda, Loeches and Campo Real in glorious weather. While exploring a cornfield which appeared to have been abandoned to flowering weeds, I was pleased to see *Zegris eupheme* Esp., and I caught several specimens of this beautiful fast-flying butterfly in fair condition. *Euchloe ausonia* Hbn. was also present with a few *P. daplidice.* In the same area I saw several worn specimens of *Z. rumina.* A notable capture one afternoon was a *L. bellargus* f. *ceronus*—a fine violet blue female. On 27th May, while collecting near Loeches, another collector turned out to be Prof. Fidel Rubio, the co-author with Dr. Bustillo of the books on Spanish butterflies, taking a few hours off from his work at Madrid Hospital. We had a little chat and he kindly invited me to accompany him to another locality. We spent an enjoyable morning collecting and talking about butterflies.

On 28th May I left Arganda and went via Chinchon to Aranjuez. Leaving this town I took the wrong road and finished up on a dirt track over the moor through which an almost dried-up river wound its way. Stopping the car to examine some marbled whites I disturbed a colony of black-winged stilts. They appeared to have eggs or young as they

flew around me presenting a curious sight with their long pink legs extending well beyond their tails.

I eventually reached the main road and was soon driving through the beautiful and historic city of Toledo. Taking the Torrijos road I had a meal in that small town and reached the village of La Mata in the afternoon. This is the district where Col. Manley and Mrs. Manley collected *P. hesperica* ssp. *galani agenjo* in 1968. Col. Manley had advised me to contact Dr. Galán Martin who discovered the race in 1960. I eventually found the doctor who was lamenting a flat car battery. He was pleased to accept my offer to drive him into Torrijos for another battery, and on our return he kindly showed me the *P. hesperica* site. This consists of two uncultivated hillsides in an area cultivated with vines, olives and corn. That evening I camped in the shade of some wild olive trees by the side of a mule track. A soft chorus of turtle doves could be heard in this peaceful spot, and at dusk I heard the plaintive cry of a stone curlew.

It rained hard all night and prospects did not look very bright in the morning. Although it was still cloudy in the afternoon I decided to have a walk over the *P. hesperica* site. I soon found the foodplant which is a fine tall-growing species of *Astragalus* and which was in full bloom with large yellow flowers. Tapping the plants lightly with my net I disturbed several *P. hesperica* and caught two or three specimens in fair condition, although it was obvious that I was a bit late for this race. Here again the butterfly was never far from its foodplant and could now appreciate its Spanish name of "Nina del astrágalo".

The following day was hot and sunny and I was able to explore the local hills. Several specimens of *P. hesperica* were taken but I did not find them at all common. A few *P. bellargus* were also flying, and like Col. Manley I took several *obsoleta* forms. I also potted up some females on horseshoe vetch (*H. comosa*). Eggs were laid and the butterflies emerged in September after my return. There were no aberrations except one female of the *ceronus* form. It is possible that the frequent recurrence of aberrations at La Mata may be the result of environmental influences.

The bird life was interesting at La Mata. I disturbed a hawk-like bird from a tree and later identified it from my bird book as a great spotted cuckoo. Several hooppoes and one great grey shrike were also seen.

On 1st June I drove eastwards through some rather uninteresting country through Ocana, Tarancon and Cuenca to Una. Beyond this small town I found some good butterfly country where *Papilio machaon* L., *Z. rumina, C. semiargus* and *Plebicula dorylas* D. & S. were flying in good numbers. I camped that evening near Tragacete and it was a delight to hear nightingales singing in a thicket of blackthorn. The following day I collected along the banks of the River Valdemeca and found this a pleasant spot where in the heat of the

day I was able to have a refreshing dip in the clear water. Species caught here included *Erebia triaria* de Prunner ssp. *noguerae* Manley and *Euphydras aurinia* Rott. ssp. *beckeri* Ledr.

On 2nd June I took the Teruel road out of Tragacete which necessitated a rather tortuous climb over the Puerto del Cubillo. At the summit it was much colder and there was not much flying except fresh *E. triaria* and a few *P. bellargus.* As I drove along forestry roads further into the Montes Universales, the weather became overcast and put an end to collecting for that day. I spent my coldest night in Spain near Bronchales camping in a wood carpeted with miniature daffodils.

In cold windy weather I drove to Albarracin. In the gorges near the town it became warmer and I stopped at a field of sainfoin (*Onobrychis viciifolia*) and caught several fresh *Plebicula thersites* Cantener. After shopping in the town, I took the Teruel road and about three miles from the town explored the rocky hills on the north side of the road in my search for *P. hesperica.* I eventually found the foodplant—a rather inconspicuous species of yellow *Astragalus* growing amongst clumps of blue-flowered flax (*Linum narbonense* L.) and other spiny and aromatic plants. Here it probably was that Sheldon found the butterfly in 1913 and he described his delight in discovering this desired species (*Entomologist,* **46**: 311).

The following day (5th June) I drove to Moscardon in the Sierra de Albarracin. Later on in July this district, which is well-known to collectors, is alive with butterflies but at this early date only a few *E. triaria* and *Coenonympha iphioides* Stdgr. were on the wing. I returned to Albarracin for the afternoon and found several more *P. hesperica* in the same area as before. A fairly common species here was *Cupido sebrus* Hbn. During the afternoon a large blue butterfly flew swiftly up the hill, and I was delighted to know that *I. iolas* was in the vicinity. The next day I had a long climb over the rocky hills east of Albarracin in very hot conditions and had another sighting of *I. iolas.* This time three flew overhead in line astern but unfortunately out of reach of my net!

On 7th June I explored the hills to the west of Albarracin. *Anthocharis euphenoides* Stdgr. was flying here and I took two females which I have never found to be common in Spain. An interesting species to turn up here in small numbers was *Scolitandides orion* Pallas. Returning later to the other side of Albarracin I was lucky to take a male and female of *I. iolas.* This race is described as ssp. *thomasi* Hemming. In the afternoon I set off for Abejar, near Soria, and after a few stops I reached my old camp site near the village. That night I heard the lovely song of the woodlark for the first time in Spain. A fair number of butterflies were flying in the morning including *Plebejus argus* L., *C. semiargus, A. morronensis* and *M. phoebe.* Continuing north I stopped near S. Leonardo de Yague and found quite a big colony of *A. morronensis*

along the roadside where its foodplant Storksbill (*Erodium cheilanthifolium*) was growing in abundance.

Passing through Burgos the weather became wet and cold and I put up for the night at a hostal in the village of Soto-palacios and spent a pleasant evening in the bar with some army officers who were on manoeuvres in the district. In the morning I continued my journey north. My only capture en route worth recording was a fresh *Plebicula amandus* Schr., near the Puerto del Escudo. I eventually reached Reinosa where it appeared to be as cold as when I was there almost three weeks previously. The following day I took the secondary road to Guardo and from there a fairly good road to Riano. Before reaching that small town I collected at Alto de las Portillas where flying with a number of *P. dorylas* I caught what appears to be a hybrid between either *P. dorylas* or *P. bellargus* and *Lysandra coridon asturiensis* Sag. The upperside of this butterfly looks very much like *P. dorylas,* but has chequered fringes, while the underside is like *L. coridon asturiensis.* Passing through Riano I collected in the valley below the Esla Bridge where butterflies were quite numerous along the road verges and included *Melitaea trivia* D. & S., *P. dorylas, L. bellargus* and *Celastrina argiolas* L. I was pleased to catch a fresh male and female of *Eumedonia chiron* Rott. at this spot.

On 11th June I went to a beautiful valley beyond Portilla de la Reina where a friend and I found a wealth of butterflies two years ago. Wild daffodils were still blooming in the fields and butterflies were scarce. In addition to *M. trivia* and *Mellicta parthenoides* Kef., I saw a few skippers in the damp meadows. I do not feel sufficiently certain of the identity of the skippers that I caught there and elsewhere to include them in this record. Afterwards I returned to the Esla valley where a worn *Nymphalis antiopa* L. was taken and released. I was surprised to see two specimens of *Parnassius apollo* L. at this early date. Another surprise on the same day was the capture of two "blues" that could be specimens of *polonus* Zeller, the rare hybrid between *L. coridon asturiensis* and *L. bellargus.* That afternoon I inspected a dam that had been built and there are ominous signs that Riano will soon be flooded to form a big reservoir. Collectors who have visited the district will be sorry that such a good area will be lost for ever.

On 13th June I went to a marshy valley leading off from the Puerto Viejo road. Baron de Worms collected here in 1966 and found a plentiful supply of butterflies (*Ent. Rec.,* **78**: 275-283). A few *Issoria lathonia* L. were on the wing and *Argynnis niobe* L. was beginning to emerge. I spotted a large *C. argiades* flitting about in the long grass and on netting it found I had taken a nice striated male. Deciding it was time to move on, I drove up the valley towards the Puerto de San Glorio. This is the home of *Erebia palarica* Chapman and I found a few fresh males flying with *E. triaria* near the top of the Pass. *E. aurinia* ssp. *kricheldorffi* Collier was also flying

here in a restricted area. I caught a few of each species until a heavy thunderstorm put a stop to collecting and I returned to the village of Llanaves de la Reina. In the morning the weather was fine again and I returned to the Pass. Just over the top I was pleased to find a colony of *Paleochrysophanus hippothoe* L. near a stream which trickled down the mountain on the north side of the road. I caught a few fresh specimens including some fine females. Another species flying near the summit was *Euchloe simplonia* Freyer, also newly emerged.

On 15th June I explored the lower slopes of the Pass but did not find any new species. After lunch in Potes I took the winding road through the River Deva gorge and reached the coast town of Laredo in the evening, where I stopped for the night and caught the ferry ship from Bilbao the following day.

My total of species excluding skippers was 40, not very impressive, but I was well satisfied with the results of an enjoyable trip.

Acknowledgements

I would like to express my thanks to Col. Manley and Mrs. Manley, Dr. Gómez Bustillo, Prof. Fidel Rubio and Dr. Galán Martin for their help.

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THE CONTINUING SPREAD OF THE BROAD-BORDERED BEE HAWK-MOTH (HEMARIS FUCIFORMIS L.) IN THE NEW FOREST. — Since Dr. Craik's report (*Ent. Rec.,* **89**: 188) of the occurrence of *fuciformis* in Ashurst in 1976, I have had a reliable report of its appearance near Lymington in that year. Also, Mr. F. Courtier saw two specimens feeding at wallflower in his garden at Denny Lodge, Lyndhurst earlier this year, and this August my cup has been filled by taking a young larva feeding on honeysuckle in my own garden. — L. W. SIGGS, Sungate, Football Green, Minstead, Lyndhurst, Hants. [This moth is subject to very marked periods of scarcity and it would be interesting to hear of any other recent reports of it, either for Hampshire or elsewhere. Until recently, *fuciformis* seems to have been at a very low level for a number of years but in 1976 it showed an appreciable increase and in that year Mr. Siggs was actually the first ever to record the occurrence in Britain of a second generation of this moth (in *Ent. Rec.,* **88**: 270), which was followed by two more reports of a second brood in 1976, by Dr. Craik (Craik, *loc. cit.*) and by Mr. Chipperfield (in *Ent. Rec.,* **89**: 249). — J.M.C.-H.]

CORRIGENDA

On page 95 (*antea*) line 7 down, for "of" read "to".
On page 223 (*antea*) line 19 down, delete "third".

Silpha carinata Herbst (Col.: Silphidae) Confirmed as a British Breeding Species

By David R. Nash*

In an earlier paper (Nash, 1975) *Silpha carinata* Herbst was re-instated in the British list on the basis of a single specimen captured in April 1974 on the edge of a wooded area near Salisbury, Wiltshire, and a table was given to facilitate the separation of the species from *S. tristis* Illiger.

In an attempt to prove that *S. carinata* was resident in the locality and refute any suggestion that the single example found was merely a casual immigrant, the site of the original capture was visited on 29th October, 1975. As might be expected after a lapse of 18 months, the straw heap which had contained the single example of *carinata* had completely rotted down and now supported a flourishing bed of stinging nettles. Grubbing at the roots of these proved painfully unproductive and searching at the roots of vegetation nearby, and under stones, was fruitless.

The locality was not visited again until 12th August, 1976. On this occasion, with the temperature in the mid-80's Fahrenheit and drought conditions prevailing, nine pitfall traps made from plastic beakers (8 cm. deep x 7 cm. aperture) were set up around the site of the straw heap within a circle of about 20 m. radius. Each trap was baited with just enough fresh fish to cover its base to a depth of about 1 cm. In addition, small pieces of fish were placed in cavities excavated under large flints, and entrance holes allowing access to the bait were dug out of the turf around the stones. Searching in this area once again proved unproductive as did a day-long diligent search of adjacent areas. However, just as I was completing my planned collecting circuit for the day and was about ½ km. from the straw site, I came upon a narrow, mown ride on the woodland edge with the cut vegetation lying where it had fallen. Turning over the relatively dry vegetation quickly revealed two teneral examples of *Silpha carinata* on the slightly damp ground beneath, together with cast Silphid larval skins. The desiccated remains of three other adults (two of them partly eaten) were found lying in the open on the mown surface of the ride.

Returning to the locality on 16th August, I found that four *carinata* had been attracted to the baited pitfall traps. Three were alive but the fourth was dead, its abdomen having been eaten—presumably by the other insects attracted to the fish. Other Coleoptera found in the traps included *Thanatophilus sinuatus* (F.), *Nicrophorus vespilloides* Herbst, *N. vespillo* (L.), *N. investigator* Zett., *Ontholestes murinus* (L.), *Creophilus maxillosus* (L.) and numerous Histerids. A single example of *Silpha tristis* was found near fish bait placed under a polythene fertiliser sack. One *carinata* had been attracted to fish bait under a flint and a further example was observed under a non-baited flint close by. Further searching under the

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now very dry and dusty grass in the mown ride which had yielded examples of *carinata* four days earlier failed to turn up any more examples, but a single specimen was found under a stone further along the ride.

A further visit was made to the locality on 12th April, 1977 to try to obtain further data concerning the life-cycle of the species. No *carinata* were found under stones in the straw heap area, but a male and female, both with damaged legs, were discovered in moss in a clearing on the woodland edge in a new 1 km. N.G. square. The beetle is thus recorded from three adjacent 1 km. squares. (A single *S. tristis* was also found in the moss.)

The capture of these two examples in the Spring, plus my original specimen (also found in April), would appear to confirm that *carinata* overwinters as an adult as suggested by Heymons *et al.* (*loc. cit.*). The presence of teneral examples in mid-August also supports the latter author's finding that the new generation of *carinata* emerges as adults of the old generation die off in July and August.

Facilities away from home did not allow precise and detailed experiments to be carried out to investigate the food preferences of *S. carinata.* The summer specimens retained, however, were placed in individual plastic containers with grass cuttings, etc. and were supplied with a selection of animal and plant foodstuffs, only one food item at a time (apart from the grass) being placed in each container. The following were eaten: a piece of runner bean, a blackcurrant leaf, a dead blowfly maggot, a dead earthworm, and a dead Tipulid larva. Live maggots did not produce much response from the beetles when introduced into their containers, but one live maggot left with a beetle was consumed, only the skin being found a day or so later. Dead, squashed maggots appeared in almost every case to initiate immediate feeding. If a beetle was touched when resting or during feeding, it usually raised its abdomen and often emitted a brown fluid from the anus. Such disturbance often resulted in thanatosis.

These meagre and inadequate data do not appear to support the findings of Heymons *et al.* (1926-33) who stated that *S. carinata* would *only* feed upon flesh. (Unfortunately, I have been unable to study this work in the original.) Available data would seem to suggest that, while a few of our Silphidae are exclusively predaceous, e.g. *Dendroxena* (=*Xylodrepa*) and *Ablattaria,* fhe majority will probably often feed as adults on both animal or plant material. Even in the genus *Nicrophorus* in which most adults of our species (apart from *N. vespilloides*) have been shown to feed almost exclusively on carrion or Dipterous larvae, there are occasional exceptions. Three specimens of *N. vespillo* (L.), for example, have been reported as feeding immediately and actively for three days upon the leaves and buds of *Cichorium endivia* L. in preference to meat which was readily available at the same time (Leclercq, 1954). The presence of *carinata* in fish-baited pitfall traps could indicate only that the beetle seems to be especially attracted to rotten

flesh or that it is particularly active on the surface of open ground and readily falls into such traps.

Examination of the specimens of *S. carinata* obtained, indicates that all save one of the characters presented in the table in my original paper (*loc. cit.*, 286) hold good. It was stated there on the basis of the then unique British specimen, that the middle elytral keel was reflexed for its last mm. to run parallel to the suture. This was found to occur in only about half the *carinata* subsequently examined. In the others, the keel tended to become evanescent towards the elytral apex with little, or no, indication of any continuation parallel to the suture.

Mr. A. A. Allen has very kindly drawn my attention to an additional important character concerning the elytral keels which I had overlooked. In *carinata,* the inner and outer keels are almost equally strongly continued to the elytral base; the middle keel, however, does not reach so far forward and becomes gradually weaker in the scutellary region, eventually fading out entirely before the elytral base. In *tristis,* all three keels are more-or-less equally strongly continued to the base of the elytra.

It was also noted (*ibid.*, 287) that the scutellum of the beetle studied was punctured only in its middle part and was smooth and shining—particularly towards its upper corners. Study of further material indicates that the scutellum usually tends to be rather thickly punctured over most of its surface. However, in all examples of *carinata* studied, the sides forming the apex of the scutellum 'V' are convex, unpunctured and shining, and border a distinct apical depression. In *tristis,* the sides of the scutellum at its apex are not markedly convex, usually sparingly punctured, and there is either no apical depression, or else only a very shallow one.

A further useful character not remarked upon in my original paper, is afforded by the elytral sculpturation. In *carinata* the punctures are large and crater-like and the surface between them is uneven. Each puncture has at its base a distinct, shining, thorn-like tubercle which bears a seta. In *tristis* the punctures are smaller and shallower, notched, and with the surface between them relatively smooth and even. The punctures bear tubercles with setae, but these are smaller and less prominent than in *carinata.*

Specimens of *carinata* are to be presented to the British Museum (Nat. Hist.) and Manchester Museum.

Summary

(a) Further examples of *Silpha carinata* Herbst are reported from Wiltshire proving that the insect is a breeding British species. (b) The feeding habits of *carinata* and other Silphidae are briefly discussed. (c) Additional notes on the separation of *S. carpinata* from *S. tristis* Illiger are provided.

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TRICHOPTERYX POLYCOMMATA D. & S. IN EASTBOURNE. — Upon the 12th and 14th of April, 1977, in the company of Mr. S. Pooles, I investigated some large stretches of privet near Friston Forest. Our visits were repayed with a combined total of 16 specimens seen, several of which were captured. This is the first time this species has been taken in Eastbourne since the records in Adkin (1930). — M HADLEY, 7 Beverington Close, Eastbourne.

WALL BUTTERFLY, PARARGE MEGERA L. IN WEST YORKSHIRE. — On 8th July, 1977, whilst on holiday near Heptonstall above Hebden Bridge in Yorkshire, I visited Walshaw Dean where three reservoirs supply water to Halifax. At a spot below the reservoirs and about 900 feet above sea level, there is a little two-arched stone bridge over the Alcomden Water reminiscent of pack-horse days. It was a short distance below here beside the path which forms part of the Pennine Way that I observed a Wall Butterfly, *Pararge megera* L. It settled on the grass and I was able to see it from about two feet distance and note that its forewings were slightly chipped. The grid reference was SD 955320. As a boy I lived at Todmorden and often collected lepidoptera in the area but I never encountered this species. Walshaw Dean nestles below Withins and Haworth Moor of Brontë fame and it was with some nostalgia I revisited it after 45 years absence. My first visit had been on 19th July, 1932. On that occasion I walked from Todmorden by way of Whirlaw, Limpus Field, Chisley, Jack Bridge, Gorple and Blakedean where I looked into the little Baptist chapel graveyard and then continued up Walshaw Dean. It was while sitting on the twin-arched bridge over the Alcomden Water that I was favoured with the visits of two Pied Wagtails, a pair of Water Voles and a swiftly flying Kingfisher — an experience which I began to think was a dream until today I unearthed an old notebook and found the written record. This year (1977) I found Wild Thyme growing on the roadside and at Blakedean there were Goldfinches, a pair of Whinchats and the forewing of a male Northern Eggar, *Lasiocampa quercus* ssp. *callunae,* which may have fallen victim to the Whinchats. The Small Heath, *Coenonympha pamphilus* L. was on the wing in grassy spots near Blakedean and more than one Grey Mountain Carpet, *Entephria caesiata* D. & S., started out from its rocky resting place. But one wonders if other observers have noted the Wall in these upland parts of West Yorkshire? — ALBERT G. LONG, Hancock Museum, Newcastle-upon-Tyne.

Lough Derrygeeha, Co. Clare, a New Locality for *Cyrnus insolutus* McLachlan (Trichoptera: Polycentropodidae)

By J. P. O'Connor*

The caddisfly *Cyrnus insolutus* McLachlan was recently collected at Lough Derrygeeha, Co. Clare, Ireland (grid reference R155563). In Britain, this species is only known from Blelham Tarn in the English Lake District (Hickin, 1967). It was first discovered there in July 1942 when adults were found along a few yards of rocky shore shaded by trees. They occurred mainly on rocks covered with moss at the water's edge or at the roots of grasses growing close to or in the water (Kimmins, 1942). *C. insolutus* still inhabits this tarn and the larvae have been described by Edington (1964). An additional Irish specimen has been taken in the Killarney area of Co. Kerry (O'Connor and Wise, *in press*).

Lough Derrygeeha is a small pond surrounded by dense vegetation including coarse grasses and *Phragmites. Juncus, Typha, Equisetum* and water-lilies (Nymphaeceae) are also common and alders (*Alnus glutinosa* (L.)) line part of the shore. In the littoral region, the substratum between the plants is composed mainly of decaying plant debris.

When the pond was first visited on the 8.vii.73, the thick cover prevented the efficient utilisation of a hand-net. In an effort to collect material, a section of vegetation was sprayed with a commercial aerosol containing pybuthrin. Only a very restricted area near the water was subjected to the chemical however in order to prevent undue damage to any associated fauna. Within a short period after application, caddisflies emerged from amongst the roots and stems. These individuals mainly attempted to climb up the plants or to take flight and they were readily captured. A few became trapped in the surface film of the water. Altogether nine males of *C. insolutus* were collected. A larva was obtained in a littoral sample taken on the same day and it closely resembles Edington's (*loc. cit.*) description. Minor differences exist in that there is some lightening of pigment on the genae adjacent to the constriction of the frontoclypeus, but otherwise the markings are quite distinct from those of *C. flavidus* McLachlan larvae (Edington, *in litt.*).

On the 25.iii.77, an attempt was made to collect additional larvae. Since a search of the littoral area failed to reveal any specimens, substrate samples were taken and subsequently live-sorted. This procedure yielded a total of six *C. insolutus* larvae, all of which have similar markings to those described above. The immature stages of *Holocentropus picicornis* (Stephens) and *H. dubius* (Rambur) were also obtained. Presumably these animals either spin their nets between the living plants or attach them to the debris.

Klingstedt (1937) considers that the scattered occurrence of *C. insolutus* throughout the western section of continental

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Europe from Fennoscandia to Iberia suggests an old specialised branch of *Cyrnus* on the way to becoming extinct. It is interesting therefore that this caddisfly has now turned up in Ireland. On the continent, it has been recorded from ponds and lakes (Nybom, 1960). Since Ireland abounds in these habitats, it is hoped that this unusual insect will be taken at many more Irish stations.

Voucher specimens have been deposited in the National Museum of Ireland and in the British Museum (Natural History).

Acknowledgements

The greater part of this work was carried out in the Department of Zoology, University College, Dublin, and I wish to thank Professor C. F. Humphries and Dr. J. J. Bracken for their interest and encouragement. I am also very grateful to Dr. J. M. Edington for confirming my identifications, Mary Norton for her help with field-work and the Department of Fisheries, Dublin, for providing me with a Fisheries Science Studentship.

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Notes and Observations

CURIOUS BEHAVIOUR OF THE GREY DAGGER (ACRONICTA PSI L.) OR DARK DAGGER (A. TRIDENS D. & S.). — A friend, Mr. M. K. Swales, the biology master at Denstone College, Uttoxeter, Staffs., telephoned me recently with an account of the behaviour of a moth he and his family had noticed in the garden and I asked him to write it down for possible inclusion in *The Record.* The moth I had no difficulty in identifying from his description as *A. psi* — or, of course, *A. tridens.* Mr. Swales writes, 10th July, 1977, as follows:

"This afternoon, we observed what you confirm to be a grey dagger moth behaving in a most interesting way on the south-facing wall of our house, which is built of two colours of sandstone — "white" (grey in the weathered state) and "red" (pink). When first seen, the moth was on grey stone and remarkably well camouflaged. However, the wall, being in full sunlight at between 3.00 and 4.00 p.m., was presumably too warm for the moth to stay in one place, so it moved quite

frequently (every two or three minutes) and then remained motionless and camouflaged as before. However, before long it moved off the grey stone on to a pink one where it was at once more conspicuous. On this stone, it moved more frequently (about every half minute) and was quite soon off that stone on to the mortar between it and the next red one where it remained stationary for the longer period of time; but by further intermittent movement it reached a shaded place, still on the mortar and well camouflaged, where it remained motionless and we left it. We observed all this from a distance of over a metre and therefore trust the moth's movement was in no way influenced by our presence."

Mr. Swales adds that he wonders if these observations indicate an ability on the part of the moth to detect when it is camouflaged and when it is not, and regrets he had no means of measuring the surface temperature of the stone. — R. G. WARREN, Wood Ridings, 32 Whitmore Road, Trentham, Stoke-on-Trent, ST4 8AP.

SOME LESS COMMON MOTHS TAKEN IN CAERNARVONSHIRE. — The following moths were among the less common species taken by operating a Robinson mercury-vapour trap almost nightly during the period June 1973 to December 1975 at Capelulo, Gwynedd (at the foot of the Sychnant Pass). Map. ref.: 23/745767. Altitude: 250 ft. Vice-county: 49 (Caerns.).

If only one or two individuals of a species were taken during this period, this is indicated by (1) or (2). Two asterisks denote first record for Caerns. One asterisk denotes rarely recorded in Caerns.

**Polyploca ridens* (Fab.) (1); *Rhodometra sacraria* (L.); *Larentia clavaria* (Haw.) (1); *Coenotephria salicata* ssp. *latentaria* (Curt.); *Triphosa dubitata* (L.) (1); *Perizoma bifaciata* (Haw.) (1); *Venusia cambrica* (Curt.); **Lobophora halterata* (Hufn.) (1); *Acasis viretata* (Hübn.) (2); *Abraxas sylvata* (Scop.); *Selenia lunularia* (Hübn.); *Menophra abruptaria* (Thunb.) (1); *Dyscia fagaria* (Thunb.); *Diacrisia sannio* (L.) (1); *Agrotis trux* (Hübn.); *Eugnorisma depuncta* (L.); *Standfussiana lucernea* (L.) (1); *Graphiphora augur* (Fab.) (1); *Diarsia dahlii* (Hübn); *Xestia ashworthii* (Doubl.); ***X. rhomboidea* (Esp.) (6); *X. castanea* (Esp.); *X. agathina* (Dup.); *Naenia typica* (L.); *Hadena confusa* (Hufn.); *Panolis flammea* (D. & S.) (1); *Dasypolia templi* (Thunb.); **Parastichtis suspecta* (Hübn.); **Xanthia gilvago* (D. & S.); **Mormo maura* (L.) (at sugar); *Cosmia affinis* (L.) (2); **Apamea characterea* (Hübn.) (2); *A. scolopacina* (Esp.) (1); *Rhizedra lutosa* (Hübn.); *Autographa bractea* (D. & S.); **Syngrapha interrogationis* (L.) (1).

The following is a similar list for the grounds of the Zoology Department, University College of North Wales, Bangor, Gwynedd for the period June to October 1974. Map ref.: 23/577719. Altitude: 100 ft. Vice-county: 49.

***Tethea ocularis* (L.) (1); *Coenotephria salicata* ssp. *latentaria* (Curt.); *Semiothisa wauaria* (L.) (1); *Agrotis trux* (Hübn.); *Standfussiana lucernea* (L.) (1); *Graphiphora augur*

(Fab.); *Xestia agathina* (Dup.); *Naenia typica* (L.); *Acronicta leporina* (L.) (2); *A. alni* (L.) (1); *Apamea ophiogramma* (Esp.) (1); *Rhizedra lutosa* (Hübn.); *Autographa bractea* (D. & S.) (2).

The following is a similar list for Treborth Gardens, near Menai Bridge, Gwynedd for the period February-May 1976. Map ref.: 23/553711. Altitude: 100 ft. Vice-county: 49 (Caerns.).

Selenia lunularia (Hübn.); *Panolis flammea* (D. & S.); *Orthosia miniosa* (D. & S.); ***O. populeti* (Fab.) (1); *Dasypolia templi* (Thunb.).

Thanks are due to Mrs. S. Mowday who operated the trap at Capelulo and to Mr. H. N. Michaelis who assisted with identification and advised on previous occurrences. — Dr. J. C. A. CRAIK, Dept. of Oceanography, The University, Southampton.

CHLOROCLYSTIS CHLOERATA (MAB.) IN SOUTH WESTMORLAND AND NORTH LANCASHIRE. — Reading of the occurrence of *C. chloerata* in various parts of the country, especially in the neighbouring county of Yorkshire, there seemed to be no reason why with the magnificent display of sloe blossom in South Westmorland and North Lancashire, the species should not occur here.

Beating the masses of sloe blossom near Yelland, a few yards on the Lancashire side of the border with Westmorland on 4th May, 1976, sure enough produced seven pug larvae, which if they were not *C. rectangulata* could only be *C. chloerata.* From these only four moths emerged, all on 9th June, 1976. Three of these escaped while I boxed the odd one, which I duly set. As this specimen resembled one which I took at m.v. at Beetham, South Westmorland, 3rd June, 1969, and one taken at Askham Bog, Yorkshire, 5th June, 1959, I decided after all it was *C. rectangulata.*

On 4th May, 1977, in company with Mr. Arthur Watson of St. Annes-on-Sea, five of these larvae were again beaten out of sloe blossom, this time in Black Tom Lane, Witherslack, Westmorland, and on 7th May I took three more from the same blackthorns as last year, near Yelland in N. Lancs. On 11th May, Mr. Watson and I took a further three of these larvae from the now fading sloe blossom, near Silverdale, Lancs. The moths from these emerged 5th to 12th June and were exactly similar to the 1976 specimens.

On the occasion of the Lancashire and Cheshire Entomological Society outing on 9th July, which took place here, I showed these specimens to Mr. Peter Crow, Dr. Neville Birkett and Mr. Ian Rutherford, and it was agreed that they were indeed all *C. chloerata.* Incidentally, two further specimens of this species appeared at my m.v. trap here at Beetham on 6th and 17th July, 1977, which in past years I have recorded as *C. rectangulata.* — J. BRIGGS, Frimley House, Deepdale Close, Slackhead, Beetham, Cumbria.

More Hazards of Moth Hunting — Mr. Hadley's item in last month's *Record* on the "Hazards of Moth Hunting" reminded me of the many brushes I have had with the police, generally friendly and often humorous. Here is one.

Bernard Kettlewell and I were collecting in the Ham Street woods. This was many years ago, before they became well known and collectors frequent. It was also before the era of m.v. lights. We pulled the car off on to one of the wide grass verges and spread a sheet in front of the headlights and over some grass tussocks to give a good reflection. We also sugared in the wood. While doing our sugaring round we heard a speeding car and police siren; then another; then a third. Not taking much notice, we completed our round and returned to the road. The three police cars were round our car. The headlights were off and the sheet was gone. At that moment the local bobby also arrived on his motor bike.

What had happened was as follows. A boy bicycling home had passed the car with its headlights blazing, and after a cursory examination, had hurried on to tell his father the following story:

"There has been a terrible car accident in the woods. The car is right off the road. There is a body in front of the car covered with a sheet. The driver has run away leaving the headlights burning." This information produced an area police alert.

We explained to the police what it was all about. They told us, with much laughter, the information they had received. Only the local bobby was annoyed "misuse of headlights, serious danger to other traffic". After all, the others had been on night patrol, but he had doubtless been dragged out of bed. — R. P. Demuth, Watercombe House, Oakridge, Stroud, Glos., 12.viii.77.

Remarkable Numbers of Moths at Light near St. Davids, Pembroke, July 1977. — Mr. J. L. Messenger and I visited Whitesands Bay, some two miles north of St. Davids, in late August 1975 with fairly good results so that we thought of paying a further visit earlier in the season. We reached this locality on 9th July, 1977 and put up in the same chalet belonging to the Whitesands Bay Hotel as on the previous occasion. The site overlooks a low cliff on the edge of the wide bay just south of St. David's Head and our m.v. trap was placed in the same position as before. The weather was calm and the wind easterly. We were amazed on this first night to find a vast concourse of insects after the lean catches we had had in Surrey. Every carton was filled to capacity and the whole catch must have weighed several pounds. By far the largest proportion of the 2,300 individuals comprising 43 species of the macros was *Agrotis exclamationis* L. (72%) and *Apamea monoglypha* L. (22%). This was to be the pattern on the eight subsequent nights with a total of 700 on the 16th when the wind changed to the west and on the last three nights the visitation was minimal. Altogether we estimated a

total of nearly 12,000 insects at the trap covering 12 nights and comprising 98 species of macros. Of the four species of Sphingids by far the most numerous was *Deilephila porcellus* L. There were quite a lot of *Arctia caja* L. and *Malacosoma neustria* L., with a fair number of both the Ermines. Among the noctuids possibly the most plentiful was *Cucullia umbratica* L. *Hadene lepida* Esp. appeared in a light brown form in some plenty with a remarkable assortment of *Ceramica pisi* L. and some fine *Agrotis trux* Hübn. Of the less frequent noctuids we saw, mostly in single specimens, were *Hadena barrettii* Doubleday, *Apamea furva* D. & S., *Cucullia asteris* D. & S., *Plusia bractea* D. & S., *P. festucae* L. and several *Leucania putrescens* Hübn. Mr. Stewart Coxey, who joined us just before we left on 20th July, said shortly afterwards he had at light a few *Plusia chryson* Esp. Geometers were distinctly scarce with a few *Scopula promutata* Guen., *Lygris mellinata* F., *L. pyraliata* D. & S., *Pseudoterpna pruinata* Hufn. and *Ortholitha plumbaria* F. — C. G. M. DE WORMS, Three Oaks, Shores Road, Horsell, Surrey.

AN UNUSUAL LOCALITY FOR MICROTHRIX SIMILELLA (ZINC.). — I have had the good fortune to record at light four specimens of this conspicuously white-banded oak-feeding Phycitid from four widely separated localities this year. Three of the records were from areas of old-established oak woodland and were: Denny Wood, New Forest, Hampshire on 18th June (B.E.N.H.S. field meeting); Hoads Wood, near Ashford, Kent on 29th June and Bisley Camp, near Woking, Surrey on 23rd July. The other record however was from Westbere marsh, near Canterbury, Kent (also on a B.E.N.H.S. field meeting) on 9th July. This is an extensive area of reed marshland bordering flooded gravel pits beside the river Stour. The main trees were various *Salix* species and the only oaks observed were saplings. — P. J. JEWESS, 378 London Road, Aylesford, Kent.

A NOTE ON BREEDING THE DEATH'S HEAD HAWKMOTH (ACHERONTIA ATROPOS L.). — With reference to Dr. Neville L. Birkett's very interesting article (in *Ent. Rec.*, **89** : 152), I would like to comment on his experience with *A. atropos* L., since I have reared well over one hundred specimens of *atropos* during my annual visits to Cape Town, with a failure rate of less than 1%.

Regarding the free-lying pupa mentioned by Dr. Birkett, and the failure of the moth from this to expand its wings, I think the reason for this was probably that it had failed to free itself of the pupa case in time. This problem can be avoided by covering free-lying pupae with about an inch thick layer of wood wool (kept moist) and the moth, whilst penetrating this, gets rid of the pupa case.

Larvae ready to pupate should be provided with damp soil, about four inches deep, in which they will construct the pupal chamber (the inside of which is about the size of a

small hen's egg with walls about half an inch thick). The emerging moth gets rid of most of the pupal skin while still breaking out of the chamber, the empty skin being invariably found well below the surface of the soil.

It may be of interest that Dr. F. W. Gess, of the Albany Museum, Grahamstown, Cape, S. Africa, informs me that the following plants upon which I have found *atropos* larvae feeding, are new host plants for this species in S. Africa: *Fraxinus americana* L. (Oleaceae); *Solanum giganteum* Jacq (Solanaceae); *Nuxia floribunda* (Loganiaceae); *Cardiospermum hirsutum* (Sapindaceae); *Jasminum multipartitum* (Oleaceae). — H. L. O'Heffernan, c/o Maye House, Chillington, Kingsbridge, S. Devon.

Eupithecia phoeniceata (Rambur), Etainia decentella (H.-S.), Esperia oliviella (Fab.), Homoeosoma nebulella (D. & S.), Bucculatrix thoracella (Thunb.) and other Notable Moths in the Winchester District. — Although 1977 has in general been a poor year, there have been a few good things appearing in this area, notably a single specimen of *Eupithecia phoeniceata* (Rambur), which came to the garden m.v. trap on the night of 6th/7th July. Besides being a new Winchester record, this seems an unusually early one. Other new or unusual species for this neighbourhood include: *Etainia decentella* (H.-S.) (conf. D. W. H. ffennell) about 10 at m.v. 2nd July and later, also one mine in sycamore key; the rediscovery of *Bembecia scopigera* (Scop.) (Six-belted Clearwing) near Farley Mount, a locality given by Fassnidge; *Esperia oliviella* (Fab.) one in woods just outside Winchester on 15th July; *Microthrix similella* (Zinck.) seven at m.v. between 7th and 19th July; *Homoeosoma nebulella* (D. & S.) one on 17th July at m.v. (a specimen caught in 1976 is also now confirmed as this species); *Idaea straminata* (Borkh.) (Plain Wave) one at m.v. 2nd August; *Meganola albula* (D. & S.) (Kent Black Arches) one at m.v. 18th August; and *Conistra rubiginea* (D. & S.) (Dotted Chestnut) one at m.v. 23rd March. An interesting record from last year now confirmed is a single *Bucculatrix thoracella* (Thunb.) taken at m.v. 6th June, 1976. — Col. D. H. Sterling, 2 Hampton Lane, Winchester, Hants. [These appear to be the first confirmed records for Hampshire of *E. oliviella* (Fab.) and *B. thoracella* (Thunb.). — J.M.C.-H.]

Two Important Butterfly Records from Greece. — On 25th June, 1977, two male and one female *Strymonidia w-album* Knoch were captured just above the village of Peristera, on Mt. Chelmos in the Peloponnese, at an altitude of about 1,300 m. The butterflies were found in rather open country, feeding on the flowers of *Viburnum* bushes. This is the first record of this species from the Peloponnese and constitutes the southernmost record of the species from the Balkans.

On 29th July, 1977, during a joint expedition with John Brown of Sutton, England, to Mt. Kaimakchalan (Voras Mts.),

on the Greco-Yugoslavian border, a single female *Thecla betulae* Linnaeus was captured at an altitude of 1,500 m., inside the forest zone. This record of *betulae* is the first ever from Greece and is the southernmost known from Europe. — JOHN G. COUTSIS, 4 Glykonos Street, Athens 139, Greece.

NYMPHALIS ANTIOPA L. IN SCOTLAND IN 1977 AND A FURTHER RECORD FOR 1976. — Two further records of the Camberwell Beauty may be added to those listed in J. M. Chalmers-Hunt's papers (*Ent. Rec.*, **99**: 89-105, 248-249). On the 5th July, 1977, while examining a local population of *Maniola jurtina* (L.) on a railway embankment in Dunblane, Perthshire, I noticed the slow moving shadow of a large flying insect travelling along the ground to my left. Looking up I saw the spectacular shape of a very worn *N. antiopa* flying steadily at about 15 feet above the ground in a westerly direction. It disappeared over the top of some sallows. The time was 11.45 a.m.

On the 24th July, 1976, while watching *Quercusia quercus* (L.) fly round an oak at the side of Loch Ard, near Aberfoyle, Perthshire, a specimen of *antiopa* landed briefly on the tree, flying off out of sight in a few seconds. — GEORGE THOMSON, Humblesknow, Ramoyle, Dunblane, Perthshire, FK15 0BA.

A FURTHER RECORD OF A CAMBERWELL BEAUTY IN WORCESTERSHIRE AFTER HIBERNATION. — On 22nd May, 1977, Mr. Jack Oliver, a very observant countryman of Quarry Cottage, Crews Hill, Alfrick, watched a *Nymphalis antiopa* L. settle twice low down on some bushes by some oaks on a ridge near Crews Hill. — J. E. GREEN, 25 Knoll Lane, Poolbrook, Malvern, Worcs.

LIMNEPHILUS HIRSUTUS PIC. (TRICHOPTERA: LIMNEPHILIDAE) IN KENT. — Two specimens of this species came to m.v.l. at Sandwich Bay on the night of 14.viii.1977. This appears to be the first record for Kent. I am grateful to Dr. Ian Watkinson for their identification. — T. W. HARMAN, Little Oaks, Church Lane, Westbere, Canterbury, Kent.

NYMPHALIS POLYCHLOROS L. IN N.W. KENT, 1975. — Mr. J. H. Hider, a keen and active local naturalist and, I have every reason to believe, an accurate observer, lately gave me a list of species noted by him in this area which, to my surprise, included the Large Tortoiseshell. It was early in June 1975, in Maryon Wilson Park, Charlton; he tells me he had a good view of the butterfly and is in no doubt concerning its identity. In the absence of further sightings, it would seem to have been only a straggler. It should, however, perhaps be mentioned that there were then a number of elms in the park (now sadly reduced by disease). For possible past occurrences in the district one would probably have to go back to the extraordinarily favourable period of 1946-8, during which *polychloros* was recorded two or three times at Lewisham, not far away (cf. Chalmers-Hunt, 1961, *Lepidoptera of Kent*: 70). — A. A. ALLEN, 49 Montcalm Road, Charlton, London, SE7 8QG.

THE ENTOMOLOGIST'S RECORD
AND JOURNAL OF VARIATION

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

TO OUR CONTRIBUTORS

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CONTENTS

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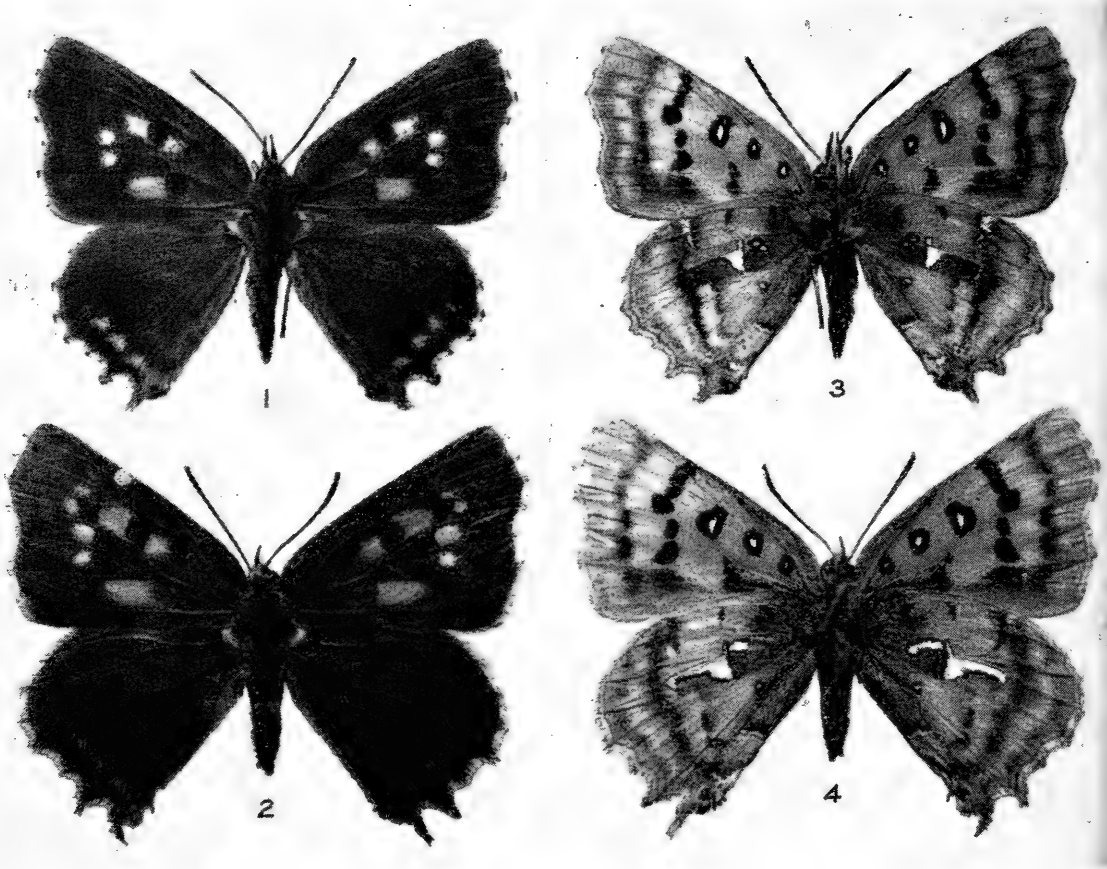

Photo: H. N. Wykeham

Phasis pringlei spec. nov.

Fig. 1. ♂ Holotype (upperside).
Fig. 2. ♀ Allotype (upperside).
Fig. 3. ♂ Holotype (underside).
Fig. 4. ♀ Allotype (underside).

Figures 1.3 times nat. size.

A New Species of the *Phasis thero* (L.) Group (Lepidoptera: Lycaenidae) from the Roggeveld Escarpment

By C. G. C. Dickson, M.Sc.*

No. 42

This insect was discovered by Mr. Ernest Pringle in a valley near Sutherland, Cape Province, on 19th December, 1975, and more specimens were found by him when re-visiting the same spot almost exactly a year later. It can be separated at a glance from any other species of its group by its remarkably distinctive hindwing underside. The habitat is about 5,000 ft. above sea level.

Phasis **pringlei** spec. nov.

In this insect the forewings are inclined to be deeper in relation to their length than in *Ph. thero* (L.), and the distal-margin less undulating (with some approach to that of *Ph. clavum* Murray), while the hindwings are more rounded at their upper angle. The anal-angular lobe is distinctly less prominent than in *thero,* but both "tails" (at the ends of veins 1b and 2) are present as in this species. In occasional or even a fair proportion of males the orange-red spots of the upperside of the forewing are partly or mostly much reduced in size, in much the same manner as occurs in so many examples of *clavum.*

Male (Upperside):

Forewing. Orange-red spotting reduced, in comparison with males of *thero* in which it is most fully developed, but (as in the holotype of *pringlei*) not infrequently like that of some specimens of *thero* in which its development is relatively restricted.

Hindwing. The orange-red submarginal spotting either developed to a variable degree (sometimes up to vein 4) or entirely absent.

Cilia in all wings tend to be more uniformly light throughout than in *thero,* but without loss of some definitely dark spacing.

Underside:

Forewing. The extensive orange-red area tends to be lighter than in *thero;* postdiscal series of black spots less out of line at vein 4 than is usually the case in the latter species. The submarginal area at least partly of a distinctly more fawn tone than in *thero* in its normal form.

Hindwing. A large area mainly below a dark strip in and beyond cell, very distinctly fawn-coloured, and at least the greater part of the wing lacking the widespread, noticeably grey tone of that of *thero.* The light markings with a metallic sheen (and which have a more golden tone than in *thero*) are reduced in size to a remarkable degree and many or most of them are frequently absent, with only their dark edging remaining. The development of the remaining part of the

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

"key" marking beyond the end of the cell varies in individual examples, as does that of other light markings, but in all specimens seen no more than its basal end has been present. Distal-marginal area grey or bluish-grey to a depth of at least 1.5 mm., and inner-marginal area more broadly so.

Cilia in all wings, though somewhat variegated, not differing greatly in colour from adjoining wing-surface.

Length of forewing: 18.5-20.5 mm. (19.25 mm. in holotype).

FEMALE (Upperside):

Essentially as in male. Orange-red marking of forewing more prominent and more fully developed towards apical region, in some specimens (and as in the allotype), than in male, but in individual females also decidedly reduced.

Cilia sometimes (as in some males), with light coloration markedly predominent.

Underside. As in male, generally, but the fawn coloration more widespread, and striking, in all wings. In the allotype the light "key" marking is comparatively well developed (but decidedly less so than in *thero*), as is a light streak immediately above the cell.

Length of forewing: 21.25-22.25 mm. (the latter measurement that of allotype).

♂ Holotype, WESTERN CAPE PROVINCE: Sutherland, 2.xii.1976 (E. L. Pringle); British Museum Reg. No. Rh.18674.

♀ Allotype, W. CAPE PROVINCE: data as for holotype, 1.xii.1976 (E.L.P.); British Museum Reg. No. Rh.18675.

Paratypes in author's coll.: as holotype, 19.xii.1975, one ♂, one ♀; 1.xii.1976, two ♂♂, one ♀ (E.L.P.).

Paratypes in coll. E. L. and V. Pringle: as holotype, 19.xii.1975, five ♂♂, one ♀; 1.xii.1976, nine ♂♂, eleven ♀♀ (E.L.P.). A pair of these paratypes will be presented to the Transvaal Museum.

In a careful comparison of the male genitalia with those of *Ph. thero* no material differences have been observed, but in the present group such negative results do not indicate that the taxa concerned are not specifically distinct. All other factors that have been taken into account, do, in the writer's view, provide convincing proof of *Ph. pringlei* representing an entirely separate species. It is of interest, and significant from this point of view, that Dr. J. Kaplan should have caught, apparently in the neighbourhood of Sutherland, two rather small, dark specimens, very different from *pringlei,* and which appear to represent a quite striking race of *thero* itself. *Ph. clavum* is widespread in this district, having been found there by Dr. Kaplan as well as by the writer, and possibly others, too.

Mr. Pringle has made the following remark concerning the present species, in a letter dated 4th December, 1976: "We [himself and his father] have, as you know, just returned from a brief trip to Sutherland and Namaqualand. At Sutherland we caught some more nice specimens of the proposed *Phasis pringlei,* and succeeded in finding a second colony of

the species up a gulley in Verlaten Kloof (the pass leading to Sutherland)." It was also ascertained that the butterfly was closely associated with a species of *Melianthus* (Melianthaceae). This is doubtless the larval foodplant, in view of *M. major* L. being one of the principal foodplants of *Ph. thero* (L.).

Specimens which represent the holotype and allotype, and two paratypes, of this butterfly are being figured in colour in Pennington's *Butterflies of Southern Africa* (1978).

Current Literature

Insects and the Life of Man. Collected Essays on Pure Science and Applied Biology by **Sir Vincent Wigglesworth,** C.B.E., M.D., F.R.S. Chapman & Hall. Science Paperbacks, pp. 217. £3.25.

This collection of essays and lectures spans the forty years up to 1971. Many of the papers have only an historical interest today, though it is interesting to observe how early doubts on the value of insecticides have been justified and how there has been a return to the control of pests by applying ecological methods.

The main theme behind most of the papers is the need to strike the right balance between the Pure and Applied aspects of entomology. Sir Vincent pays tribute to the role of the amateur, not only in building up the systematic entomology of this country, but also in laying the foundations of many branches of the science. He shows that the role of the pure scientist is often to provide a rational basis for the practical application to problems which have been long established on empirical grounds. At the same time he stresses the need for continued support for Pure Science which should be free of compulsion to show an immediate application.

Another aspect of the book is to stress the value of insects as a medium for physiological studies.

Also included are a fascinating study of the versatility of insect epidermal cells; an account of the contribution to insect physiology made by Sir John Lubbock; an amusing sketch of Wordsworth's view of science; and a final essay entitled "The Religion of Science", in which it is suggested that a scientist's entire system of thought is based on a faith that natural laws must exist. — E.H.W.

Also received:— **The Developmental Biology of Plants and Animals.** Edited by **C. F. Graham** and **P. F. Wareing,** D.Sc., F.R.S. Blackwell Scientific Publications. £7.75. This brings together for the first time an up-to-date account of the embryology of plants and animals with contributions from other specialists in their particular fields. Well illustrated and set out, it seeks to cut across traditional divisions into botany, zoology and the allied sciences, and to integrate their different approaches. — E.H.W.

April in the Highlands, 1977

By P. M. STIRLING*

After delaying our visit to Scotland due to the poor weather conditions at Easter, Mike Britton and I finally left the home counties at 9.30 on the evening of the 20th April and arrived at Struan, Perthshire, about 7.30 the following morning.

Intermittent rain on the motorways dampened our hopes a little and we found the posts at this well known locality quite wet. However, we did see a fresh male *Cleora cinctaria bowesi* Richardson and several specimens of *Trichopteryx carpinata* Bork. of both sexes. Females of *Agriopis marginaria* Fab. were also patronising these posts, although it appeared that *Nyssia lapponaria* Boisd. must have been over at this locality as we failed to see this species here throughout our stay. A single larva of *Diacrisia sannio* Linn. was found here on heather.

In the afternoon we moved on to Loch Rannoch and tried for the second successive year to locate *Conopia soliaformis* Bork., but the species eluded us again and all that we found was a vast quantity of holes caused by some other insect. Sweeping the heather in the Black Wood at Rannoch produced a number of larvae of *Xestia castanea* Esp., *Phragmatobia fuliginosa* Linn., *Lycophotia porphyrea* D. & S. and *Alcis repandata* Linn., but no *Dasychira fascelina* Linn. which we had found not uncommon here in 1976; we also found single specimens of *Ectropis bistortata* Goeze and *Archieapis parthenias* Linn. That evening the rain became rather heavy and our lights at Rannoch only attracted a few *Orthosia gothica* Linn., *O. stabilis* D. & S. and *O. crude* D. & S.

On the 22nd we left the Rannoch area and on the way to Aviemore stopped first near Tummel Bridge and were delighted to find four female *N. lapponaria* Boisd. on posts, together with *T. carpinata* Bork. and *E. bistortata* Goeze. At the last minute we again decided to stop at Struan and were surprised to find a number of fresh *C. cinctaria bowesi* Richardson on the posts of the deer fence. We had thought that the heavy rain and wind would have driven most insects to cover, but we were delighted to be proven wrong. Again *T. carpinata* Bork. and a single *Colostygia multistrigaria* Haw. were also present.

En route to Aviemore we stopped on some fairly high ground and were excited to find the first male *N. lapponaria* Boisd. of our stay. About twenty were located on posts along a stretch of about half a mile. However, only a couple of females were seen, indicating that the high elevation had retarded their emergence. We also found a single fresh *Achlya flavicornis* Linn., another species which appeared to be over in all other localities we tried on this visit.

That evening we pitched the tent in some woodland near Aviemore and with high hopes of exciting things to come set

* 83 Grasmere Road, Purley, Surrey CR2 1DZ.

out the lights and commenced to work the sallows. Despite not having a sheet, which we later found buried in the car, we managed to dislodge some fine*gothicina* forms of *O. gothica* Linn. and some attractive specimens of *O. incerta* Hufn., as well as several *Xylena vetusta* Hübn. from whch we eventually obtained a number of ova. *Cerastis rubricosa* D. & S. in its silvery northern form appeared quite common also.

The next morning the traps held most of the previous evening's species, with the addition of several specimens of the large northern form of *Lycia hirtaria* Clerck. However, there were no *Brachioncha nubeculosa* Esp. for which we were undoubtedly too late.

Later in the morning after a brief snow shower we ventured out on to Granish Moor, although with the exception of a few *A. parthenias* Linn. we drew a blank at this locality, and in the afternoon returned to the woods of our previous night's activity. After scanning miles of posts our only reward in the way of lepidoptera was a single female *Lycia hirtaria* Clerck, although we were treated to some fine close sightings of a pair of buzzards at their nest and shortly after discovered that we had pitched our tent about ten feet below a pair of nesting long-tailed tits.

In the evening we laid out a fairly extensive sugar run on posts and birch trunks and hardly had we put the brushes away before one of these patches had attracted a fine *Xylena exsoleta* Linn., and a further specimen was on another patch much later in the evening. Another birch trunk yielded *Orthosia incerta* Hufn. *in cop.*, and we noted all the species from the previous evening again at sallow, with the addition of *O. populeti* Fab.

On the 24th we returned to Struan and en route revisited the *N. lapponaria* Boisd. colony where we found the species to be even more common and stretching further along the posts. A pair were noted *in cop.* and eventually we did find both sexes sitting on bog myrtle well away from any posts and seemingly just basking in the sun. We had the pleasant surprise at this locality of finding a number of *Macrothylacia rubi* Linn. larvae sunning themselves on the grass, although it required a great deal of walking as they were spaced very widely apart. Most had pupated within about forty-eight hours, and nearly all had emerged by the end of May. A cocoon was found on heather very reminiscent of the Ruby Tiger, but on 17th May it proved to be a fine female *Acronicta menyanthidis* Esp.

Arriving back at Struan we briefly scanned the posts and found several more *C. cinctaria bowesi* Richardson and a single female *A. marginaria* Fab. That evening the lights were placed in some unopened sallows and a sugar run was put out on alders by the river. Some fine sallows in blossom were duly shaken and produced specimens of *X. vetusta* Hübn., *O. stabilis* D. & S., *O. gothica* Linn., *O. incerta* Hufn. and *C. rubricosa* D. & S. However, apart from a single *cinctaria* the sugar proved a complete blank.

We inspected the trap the following morning but found nothing new, although several more large *L. hirtaria* Clerck were very welcome, and finally we again noted *cinctaria* sitting on the posts. Leaving Struan at 10.30, we were home for supper.

BEGINNER'S LUCK! COSCINIA CRIBRARIA L. SSP. ARENARIA LEMPKE (LEP.: ARCTIIDAE) IN KENT. — On the 6th July, 1977, I found in the Rothamsted light trap which I run in my garden a moth which I did not immediately recognise. This is not an unusual occurrence, as I have only extended my interests to moths in the last two years or so. However, after consulting South, I concluded that I had caught something pretty unusual. As far as I could judge, it was a fresh male *C. cribraria,* and since it was very lightly marked I concluded that it might be ssp. *arenaria* Lempke, which "has been taken occasionally at Dungeness, no doubt immigrants from the Belgian coast sand dunes" (South, 1961 edition).

At this point I went to work feeling very pleased with myself! My doubts that I had really got *C. cribraria* increased as the day wore on and by the time I got home again, I was sure I must be wrong. A second examination, however, confirmed my opinion. Then I consulted Mr. Chalmers-Hunt's *Butterflies and Moths of Kent,* Vol. II, and discovered that, far from occasionally being taken at Dungeness, only one had ever been taken there—on 21st July, 1934—and that only four altogether had ever been taken in Kent, the other three occurring at Sandwich, the latest in 1937. This renewed my doubts! I decided that it would be foolhardy to rush into print and I would wait for a second opinion. This I have now received and I am pleased to record that Mr. R. F. Bretherton confirmed that it is a male *Coscinia cribraria* L. ssp. *arenaria* Lempke. (Taken 5th July, 1977 at Minster, Sheppey.) In the hope of taking further specimens of the moth, I ran an m.v. lamp, in addition to the Rothamsted trap, over the following week or so, but without any success.

It would seem most likely that it was a migrant from the Belgian coast, as there are certainly no sand dunes in this area, although it would have received little or no wind assistance for its fairly long trip, as conditions had been calm for some days. Particularly surprising is the freshness of the specimen. There is little or no loss of scales. (Perhaps it came by ferry from Flushing to Sheerness!) The black markings on it are very scarce and it lacks completely the streaks which normally run the length of the fore-wings.

My thanks to Mr. R. F. Bretherton for confirming the identification. I hope to be able to report more specimens next year! — GEOFFREY N. BURTON, "Mar-y-Mar", Minster Drive, Minster-in-Sheppey, Kent, ME12 2NG.

Mycetophila strigatoides (Landrock): an Overlooked British Fungus Gnat (Diptera: Mycetophilidae)

By Peter J. Chandler*

During a visit to the Cambridge University Museum, I found that the two males referred to *Mycetophila bialorussica* Dziedzicki in the collections there, were not conspecific and one of them was subsequently found to be *M. strigatoides* (Landrock), a widespread Holarctic species according to the synonymy established by Plassmann (1970b). Although apparently less frequent in Europe than in North America, its occurrence in Britain was expected.

M. strigatoides resembles *bialorussica* in many respects, including the fore tarsi thickened in both sexes; apart from genital characters (notably the bifid distal portion of the dististyle), *strigatoides* has the male tarsi less strongly enlarged and the wing markings smaller; the preapical band is less intense and is not always touching the tip of vein R1.

Mycetophila strigatoides (Landrock)

Mycetophila strygata (sic) Zetterstedt: Dziedzicki, 1881, Tab. VII, 9-12.

Fungivora strigatoides Landrock, 1927, 177 nom. n. for *strygata* Dziedzicki, 1884 nec Staeger, 1840, 242; Plassmann, 1970a, 391; 1971, 78.

Fungivora venusta Laffoon, 1956, 290; synonymy, Plassmann, 1970b, 399.

Mycetophila strigatoides (Landrock); Plassmann, 1973, 17.

Male. Wing length 3.2 mm. Head brown; scape, pedicel and base of first flagellar segment yellow, rest of antenna grey; palpi brownish yellow.

Mesoscutum mainly shining dark brown, clothed with pale hair; anterior margin, broad humeral margins and small postalar patches yellow. Prothorax brownish yellow; rest of pleura, metathorax and scutellum brown. Three propleurals, four bristles on mesepimeron, two pairs of scutellars. Halteres yellow.

Legs entirely yellow except faint darkening at extreme tip of hind femur. Anterior setulae of hind tibia dark. Hind coxal setae short. Mid tibia with 3 a, 1 a-d, 5 d (last more p-d), 2 p, 2 v. Hind tibia with 6 a, 5 d (1 short above), 3 short p near tip. Segments 2-4 of fore tarsi a little thickened below.

Wings yellowish with yellow veins. M before r-m with 1 setule below near tip; r-m about twice m-stalk. R5 a little down curved towards tip. A small dark brown central spot from R to base of m-fork; a lighter preapical shade filling end of cell R1 but stopping a little short of vein R1, contracted basad in cell R5, faintly extended across median fork to just reach Cu1 (according to Laffoon's description of *venusta*, preapical band may begin at, just before or just beyond R1; M before r-m may have 1-2 setulae below).

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Abdomen mostly dark brown, narrowly paler at bases and apices of tergites. Hypopygium brownish yellow, figs. 1a-b.

Material examined: STIRLING: Auchenbowie, 7-11.ix.1904, 1 ♂ (F. Jenkinson, Cambridge Univ. Mus.).

The above description agrees substantially with Laffoon's (*op. cit.*) description of *venusta.* He stated that Nearctic specimens had a basally constricted process on the posterior margin of the dististyle not apparent in Dziedzicki's figures of *"strygata"* or in Bukowski's (1934) figures of his *pseudoquadra,* which is closely similar. Plassmann considered that the discrepancy resulted from the aspect figured and based the synonymy on specimens collected by him in Germany.

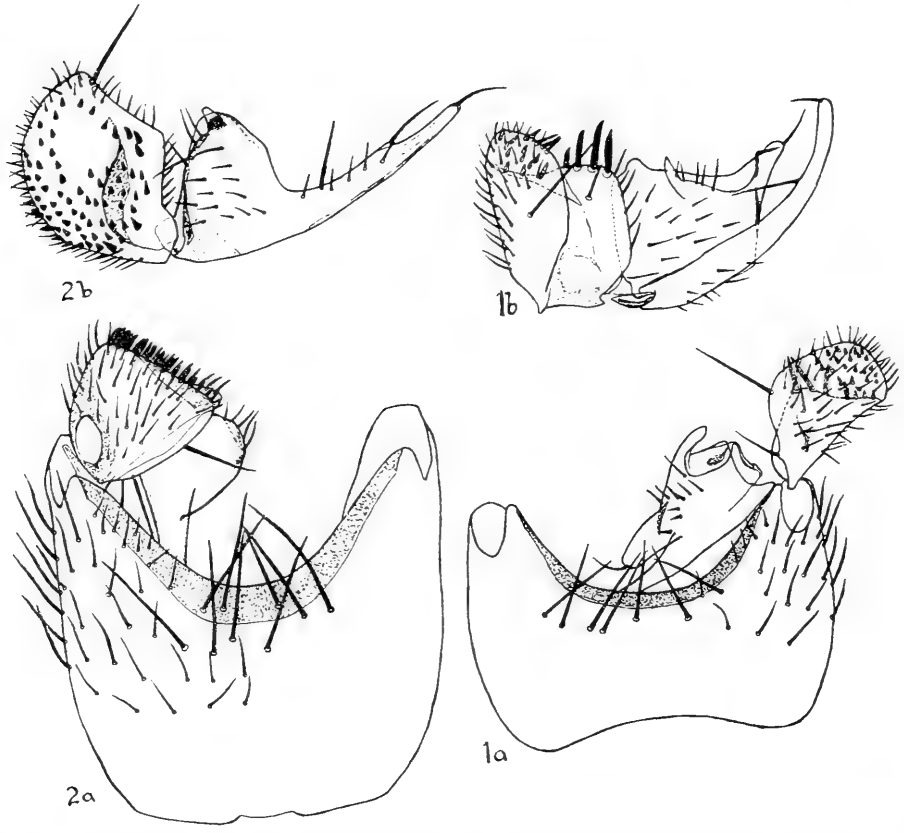

Fig. 1 a-b. *Mycetophila strigatoides* (Landrock), male hypopygium; a, ventral view; b, dorso-internal view of stylomeres.
Fig. 2 a-b. *M. bialorussica* Dziedzicki, male hypopygium; a, ventral view; b, internal view of stylomeres.

A further closely similar form was described in both sexes by Matile (1967) from the Pyrenees as *psedoquadroides,* which he compared with *bialorussica, quadra* Lundström (1909, 61, figs. 143-5) and *pseudoquadra* Bukowski, without mentioning *strigatoides.* The constricted process of the dististyle is omitted from his figure but the genitalia do not otherwise differ appreciably from *strigatoides* and I consider it likely that both *pseudoquadra* and *pseudoquadroides* will prove to be synonymous with *strigatoides. M. quadra* has a few spines and many spinules on ventral and dorsal lobes of the basistyle respectively, i.e. in reverse positions to *str.gatoides,* and the dististyle is also shorter and not bifid.

Mycetophila bialorussica Dziedzicki

This too is scarce in Britain and records are fully quoted by Chandler (1977) where the ovipositor is figured. I have also seen 1 ♂, BANFFSHIRE: Logie, 27.ix.1913 (F. Jenkinson, Cambridge Univ. Mus.). The male genitalia (figs. 2a-b) are figured here for comparison with *strigatoides*; external differences are as follows: —

Legs orange yellow with apical quarter of hind femora and tip of mid tibia darkened; fore tarsi with segments 2-4 more strongly enlarged than in *strigatoides,* especially 2 near tip and 3; mid tibia with 3 v; hind tibia with 7 a, 7 d (first weak), 4 short p near tip.

Wing markings similar but larger and darker, both of same intensity; preapical band touching extreme tip of R1, reaching Cu1 but interrupted in m-fork, 0-2 setulae below tip of M before r-m.

Acknowledgements

In am indebted to Dr. W. Foster of the Cambridge University Museum for the opportunity to study the Mycetophilid collection there and for the loan of selected material.

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EUMICHTIS LICHENEA HBN. ON THE NORTH KENT COAST. — I found five male specimens of the Feathered Ranunculus at rest in the ticket office alcove at Chestfield and Swalecliffe station on 29th September, 1977. It was a blustery night and other moths were also present. — J. PLATTS, 11 Maydowns Road, Chestfield, Whitstable, Kent.

Corfu Butterflies in Spring 1977

By Major General C. G. Lipscomb*

Various articles have appeared in *The Record* from time to time covering entomological activities in most parts of Europe but never, as far as I am aware, has the Island of Corfu had so much as a mention.

This spring, my wife and I decided to visit the island on a package tour to enjoy the spring flowers for which it is well known and at the same time we hoped to see something of its butterflies.

Flying time from Gatwick was about three hours and we arrived on the afternoon of 18th April. The weather was hot and sunny and the countryside looked delightfully green as we motored to our hotel in Corfu town. Between the hotel and the sea was a large public garden with many oleander bushes and in one corner a bed of stocks where a number of *Vanessa cardui* Linn., all very worn, were feeding on the flowers. Surprisingly no other butterflies were seen, nor did a cursory inspection of the oleander bushes produce a larva of the Oleander Hawk-moth, which I felt was a possibility. From some large trees lining one side of the garden the monotonous call of a scops owl could often be heard at night. The bird seemed quite undisturbed by the passing traffic.

The following day our bus took us to the coast at Paleo Castritsa in the N.W. of the island, where the country is hilly with many olive trees and low mixed scrub. Several *Gonepteryx cleopatra* Linn. could be seen flying about the hillsides and white butterflies were common on the cultivated ground. All of the latter I was able to examine were *Pieris rapae* Linn., although its near relatives *Pieris mannii nayei* and *Pieris ergane* H.G. could well have been present but undetected as the locality seemed suitable for them. Also seen that day were *Pararge megera* Linn. and *Pararge aegeria* Linn., although neither were common. A single *Vanessa atalanta* Linn. was observed and *Callophrys rubi* Linn. proved relatively plentiful. I see I made a note in my diary that this was not a very rich collection, but at least it was a start.

The 20th and 21st were overcast and occasionally wet, so we were able to concentrate on the flowers and make the acquaintance of many of the fine orchids which were the real highlight of the tour.

We awoke on the 22nd to cloudless skies and our bus took us part of the way up Mount Pantocrator, the highest point on the island and from whose summit one can look across the mile and a half wide Corfu channel to the barren coastline of Albania. Many fine orchids were found on this mountain but *cardui* and *megera* were the only butterflies seen.

The following day, when there was no planned expedition, I took the opportunity to explore some rough ground within walking distance of the hotel on the outskirts of the town.

* Crockerton House, Warminster, Wiltshire.

The results were not without interest as the area supported the only colony I found of *Coenonympha pamphilus* Linn. They were particularly interesting because the undersides of the hind wings of both sexes were almost unicolourous. *Pieris brassicae* Linn. and *P. rapae* were also seen and it was noted that the former were all considerably smaller than those one is famaliar with at home.

On the 24th we visited Aghios Gordis beach on the west coast and spent the day in its vicinity. While there we saw the first of many *Iphiclides podalirius* Linn. — also noted were *Leptidea sinapis* Linn. in some numbers and odd specimens of *Aricia agestis* Schiff. and *Polyommatus icarus* Rott.

On the 26th, while at Aghios Mattheos, I met a young English bird-watcher who told me that a few days ago he had seen *Nymphalis polychloros* Linn. sunning itself while at rest on a tree trunk. I thought this very probable as there was no lack of its foodplant on the island. On this day too, I saw the first *Papilio machaon* Linn. The foodplant, fennel, is locally common in the more low lying parts of the island.

The next day our bus took us across the island to a point on the coast near the village of Kellia from where a rough path led down a steep slope to a lovely little beach backed by high cliffs. On the way down, red rumped swallows were collecting mud from a wet patch on the path to build their nests and several pairs of blue rock thrushes were seen flying about the cliffs. A single early *Limenitis reducta* Staud. was identified flying along a wooded path under the cliffs and later on the first *Nymphalis antiopa* Linn. appeared near the bus when we returned for our lunch, as well as further *machaon* and *podalirius.*

On the 29th we paid a second visit to Mount Pantocrator and found more butterflies about. At the very top of the mountain in an area of stony ground I netted a small black butterfly which proved to be *Erynnis marloyi* Boisd., the Inky Skipper, a butterfly I had not seen before. *Podalirius* in some numbers seemed to favour this high ground and were easily photographed as they fed on the low-growing flowers. Further down a single *Lycaena phlaeas* Linn. was identified, together with the blue *Glancopsyche alexis* Poda and the first *Melitaea cinxia* Linn.

On the 30th we hired a car and motored down to the southern end of the island, which is rather flat and uninteresting. As we sat in the shade of some tall willow trees near Lake Korisson, we watched a second *Nymphalis antiopa* Linn. sailing round the upper branches and periodically settling on a convenient sprig. This second sighting was interesting as the butterfly is reported in Higgins & Riley as not occurring on any of the Mediterranean islands.

On 1st May, our last day, the bus took us to Sidari on the north coast. Here I noticed the first *Colias croceus* Fourcroy flying over rough ground by the sea and captured a fine fresh ♀ *Pontia daplidice* Linn. on the shore as it fed on the flowers of a maritime plant.

So ended a most pleasant fortnight and although, as I noted in my diary, the island was not rich entomologically, I feel it has possibilites and a further visit, possibly in May, might well prove more fruitful.

A THIRD BRITISH SPECIMEN OF PAMMENE LUEDERSIANA (SORHAGEN). — This species has so far been recorded in Britain only from the Aviemore district (Youden, 1975, *Entomologist's Rec. J. Var.*, **86**: 197 and Emmet, 1976, *ibid.*, 88: 88). The latter record was of a moth reared from bog myrtle (*Myrica gale*). A female specimen was captured by me flying over bog myrtle near Camghouran, Rannoch, Perthshire, on the evening of 18th June, 1977.

It is strange that this species seems to have been overlooked by those microlepidopterists who used to work the Camghouran area for long periods. Perhaps earlier specimens are yet to be found hidden in a series of other species. — E. C. PELHAM-CLINTON, The Royal Scottish Museum, Edinburgh, EH1 1JF, 24.viii.1977.

BISTON BETULARIA LINN. AB. CARBONARIA JORDAN AND OTHER LEPIDOPTERA IN IRELAND IN 1976 AND 1977. — On July 5th, 1977, I caught one *Biston betularia* Linn. ab. *carbonaria* Jordan at Blackrock, Cork City. As far as I am aware, this is the first Irish record of this ab. away from the Northern and Eastern coastal counties.

Other interesting Lepidoptera seen during Summer visits to Ireland in the last two years include: *Cyclophora linearia* Hübn., one, Carrigrohan, near Cloghroe, Mid Cork, 24.vii.77. *Euphyia biangulata* (Haw.), one, Knockalisheen, Mid Cork, 24.vii.76; one, Carrigrohan, Mid Cork, 31.vii.76; and one there again on 24.vii.77. *Apeira syringaria* (Linn.). Although described by Baynes as "Scarce and of sporadic distribution", I have found this insect on three occasions as follows: one, Clonsilla, Co. Dublin, 11.vii.76; one at Douglas, Mid Cork, 6.vii.77; and one at Dunshaughlin, Co. Meath, 14.vii.77. *Nudaria mundana* (Linn.), four, Carrigrohan, Mid Cork, 24.vii.77. *Atolmis rubricollis* (Linn.), one, Carrigrohan, Mid Cork, 24.vii.77. *Lithosia quadra* (Linn.), five, Carrigrohan, Mid Cork, 31.vii.76, and eleven there on 24.vii.77. *Agrotis trux* Hübn. s.sp. *lunigera* Steph., one, Oysterhaven, Mid Cork, 22.vii.77. *Hadena perplexa* (D. & S.) s.sp. *capsophila* (Dup.), two, Oysterhaven, Mid Cork, 22.vii.77. Along with the last two species, on 22.vii.77 a perfect specimen of *Aphantopus hyperantus* (Linn.) was found in the trap. All the above records are of examples obtained at m.v. trap. *References*: Baynes, E. S. A., 1964. *A revised Catalogue of Irish Macrolepidoptera.* Baynes, E. S. A., 1970. *Supplement to a revised Catalogue of Irish Macrolepidoptera.* — K. G. M. BOND, Lutzowst. 4, 32, Hildersheim, West Germany.

Eucosma metzneriana Treitschke (Lep.: Tortricidae): a Species New to the British List

By R. J. Revell*

On 22nd July, 1977, whilst using portable m.v. equipment in the company of Jonathan Scoble at a waste chalky locality near Cambridge, a large unfamiliar-looking Eucosmid was captured from the sheet at about 11.30 p.m. Further examination the following morning confimed its unfamiliarity, and subsequent comparison with the S. Wakely and other collections at the Cambridge University Department of Zoology, failed to establish an identification. The specimen is a female in very good condition with wing markings reminiscent of *E. pupillana* Clerck, but much nearer *E. foenella* L. in size.

Through the good offices of Col. Emmet, a brief description was transmitted to Dr. Bradley at the British Museum (Nat. Hist.), who tentatively suggested the name *E. metzneriana* Treits. Later, Dr. Bradley kindly examined the moth and confirmed this identification.

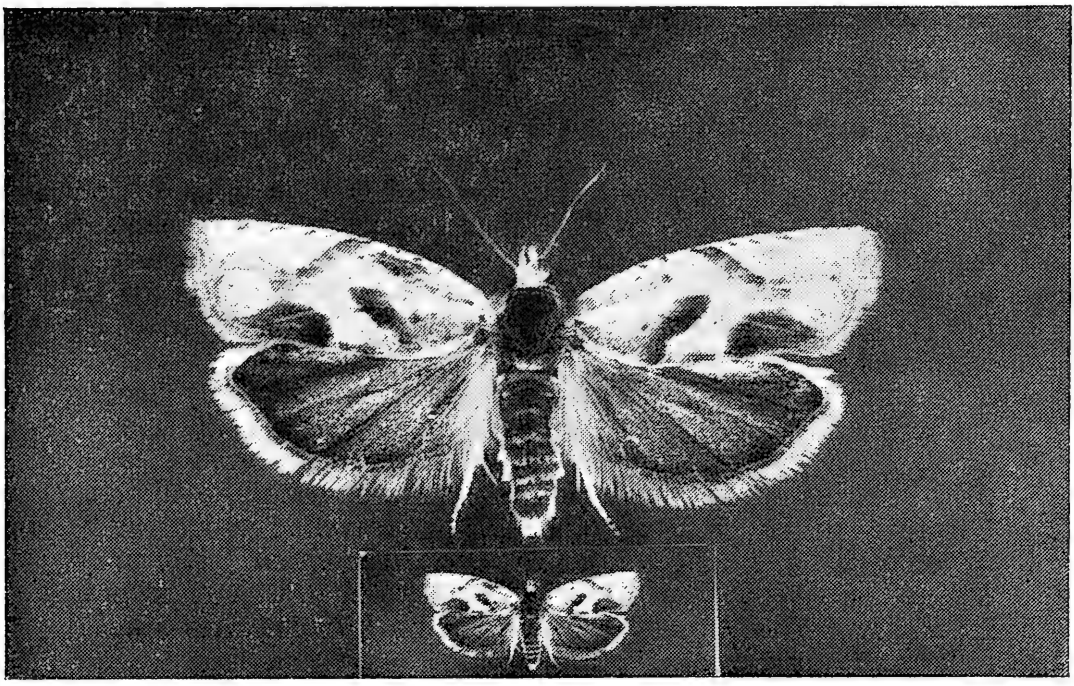

Fig. 1. *Eucosma metzneriana* Tr., near Cambridge, 22.vii.77. Life size al. exp. 22 mm., and enlarged.

E. metzneriana, which is new to the British list, is known from Europe, through Asia to Japan. Its larva is stated by continental authors (including Lhomme, 1946) to feed inside the terminal shoots of *Artemisia absinthium* (Wormwood) during the Autumn and Spring. Hannemann (1961) also gives as a foodplant *A. vulgaris* (Mugwort). Wormwood has not yet been located at or near the site of capture, but Mugwort abounds — as it does almost everywhere.

The occurrence of this insect near Cambridge raises the usual three questions: (1) is it a chance migrant?; (2) a representative from a recently established colony?; or (3) one

from an old established colony unknown to earlier entomologists? The second possibility seems the most likely, and if further investigations show that a colony exists here, one must surely assume the presence of the species elsewhere in Britain.

Acknowledgements

I wish to thank Col. Emmet and Dr. Bradley for their help in identification, and Mr. D. E. Wilson for kindly photographing my specimen here shown.

* 1 The Furrells, Linton, Cambridge.

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A CASE AGAINST THE AUTOMOBILE. — Some months ago mention was made to me by Dr. J. V. Banner of the damage caused to the countryside, and nocturnal macro-lepidoptera in particular, by road traffic. Several aspects were discussed but deaths caused by physical collision took precedence. Although somewhat sceptical at first, I took the trouble to note such fatalities as and when they occurred during 1977—not a good year for moths, numerically speaking. The simple survey carried out covered the months of May to August inclusive, and for the purposes of the final figure quoted are taken as the annual toll—possibles and probables being disregarded, as were micros.

Almost 144,000 million miles were travelled by motor vehicles on the roads of Great Britain during 1972 (Dunn, J. B., 1974. *Transport and Road Research Laboratory Report* 618)—the last year for which figures are personally available. Of this traffic approximately 20% travelled nocturnally (Gyenes, L., 1973. *Transport and Road Research Laboratory Report* 549) dependent on site. Thus a total of 28,800 million miles were covered during the hours of darkness—9,600 million during the survey months.

The survey totalled some 355 miles of relevant motoring, with fatalities numbering 69 moths. A simple calculation reveals the incredible figure of over 1,800 million moths killed annually by motor vehicles alone. The highest rate of deaths noted was 10 per 10 miles and the lowest nil. These figures are not quoted as an accurate total but rather as a strong guide to the undoubted slaughter that is occurring on our roads and to indicate the perhaps unrealised magnitude of the deaths.

To end on a more hopeful note, a similar survey on butterflies totalled "only" six deaths during the year—interestingly they were all Pieridae and therefore of the genus that could perhaps best withstand such losses—COLIN PRATT, "Oleander", 5 View Road, Peacehaven, Newhaven, Sussex.

The Glanville Fritillary (*Melitaea cinxia* L.) in Gloucestershire

By J. E. Green*

On the afternoon of the 8th June, 1977 in warm sunshine following a spell of poor weather, my wife and I set out to explore a remote part of the Cotswolds. At about 4 p.m. we had arrived by chance and paused on a rough piece of ground near a wood where a considerable number of insects was on the wing. Numerous species had been noted, when an odd looking butterfly appeared which I followed until it settled. To my utter amazement I saw that it was a fresh Glanville Fritillary ♂. During the next hour it reappeared at intervals and I succeeded in taking a number of photographs.

The next day I contacted Charles Cuthbert, the Executive and Conservation Officer for the Gloucestershire Trust for Nature Conservation about the discovery, and on 16th June I took him to the site. After about half an hour when it began to look as if our journey was in vain, the Glanville suddenly appeared, and again a photograph was taken. Subsequent detailed study of the colour slides revealed that it was not the one seen on the 8th.

Constraints of bad weather, work and distance precluded another visit until 23rd June, when I took my old friend and butterfly enthusiast Gordon Haines to the site, and in good weather we saw at least three different Glanvilles, a fresh ♀ and two ♂, one slightly worn and one freshly emerged, about 150 yards from the main area. It was now clear that this was a small wild colony. Only one other visit was possible, on 4th July with G.H. again, when another ♀ was seen.

This appears to be the first record of the species in Gloucestershire. Knowledge of the location has been limited to four people for the present. However, if the butterfly has been introduced, which seems highly probable, then someone else will know unless the release was made some distance from the site. The Trust are appealing to anyone who knows of any release of stock of this species in the county to come forward and give details. In the absence of such evidence, the origin of the colony so far from the Isle of Wight will remain a mystery. Could it possibly be an example of this species attempting to increase its range northwards during that totally exceptional summer of 1976? Other species turned up well away from their normal haunts, but the Glanville is so local on the I. of W., and Gloucestershire so far away, that it must be extremely unlikely.

Another intriguing factor about the site is that there is an adjacent meadow, and so there is quite good agreement with the description given by Stephens in 1827: "This is a very local species and is found in meadows by the sides of woods." It is a beautifully sheltered warm spot with plenty of narrow leafed plantain. May be released stock found it in some mysterious way, or is it conceivable that the Glanville

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has been present all the time in Gloucestershire? It could never be proved, but one can reflect on cases like the discovery of *Carterocephalus palaemon* Pallas in North Scotland in 1939, when everyone thought it was confined to the East Midlands.

It is perhaps of interest to list the other species originally found at the site, which caused us to pause awhile on that memorable afternoon. They were: *Aglais urticae* L., *Callophrys rubi* L., *Pyrgus malvae* L., *Erynnis tages* L., *Hamearis lucina* L., *Coenonympha pamphilus* L., *Gonepteryx rhamni* L., *Anthocharis cardamines* L., *Pieris napi* L., *Aricia agestis* D. & S., *Polyommatus icarus* Rott., *Ectypa glyphica* L., *Euclidimera mi* Clerck and *Ematurga atomaria* L. We look forward eagerly to a visit next year.

In conclusion, it is worth noting that no specimens have been taken and that photography has proved a valuable aid in assessing the colony.

A Recent Occurrence of Phyllotreta vittata F. (=sinuata auct. Brit.) (Col.: Chrysomelidae). — This "turnip flea" is, as Fowler (1890, *Col. Brit. Isl.*, **4**: 367) states, a rare species with us; though at least one instance is known of its occurrence in plenty, when the eminent coleopterist just mentioned found it commonly at Eskdale, Cumb., in 1911 (Fowler & Donisthorpe, 1913, *ibid.*, **6**: 292). Donisthorpe himself never took the species, despite being—as he told me—particularly desirous of so doing in order to complete his series of the Phyllotretae. Yet the records are comparatively numerous, except for the last half-century for which period there are hardly any; the former fact may, I think, be due to its having long been known as a rarity to collectors who therefore took the trouble to publish their captures, which could give the impression that it is commoner than it really is. For the extreme southern counties there are only two quite old records (N. Kent and N. Cornwall); the bulk are for East Anglia and Wales across the Midlands and through the north of England.

I was pleased to find *P. vittata* for the first time at Foulden, near Swaffham in W. Norfolk, at the beginning of September 1973, while spending a few days with my friends Mr. and Mrs. A. W. Gould. It was in their kitchen garden, then only just "reclaimed" from the fallow state and overrun with horseradish (*Armoracia*). I was unable to decide whether the flea-beetles—obtained by general sweeping—were coming off that or other equally suitable crucifers present (cabbage, charlock, etc.) or from all indifferently; it was distinctly uncommon, and patient work was needed to secure a fair series. Its close relative *P. undulata* Kuts. occurred with it in similar numbers. Under a lens, the *P. vittata* were easily discriminated by the form of the yellow elytral stripes, which is its chief characteristic. It should be noted that this species has always been ascribed in our literature to the *sinuata* of Stephens, whereas the latter is now ascertained to be synonymous with *flexuosa* Ill. — A. A. Allen.

Artificial Chambers for Wood-associated Sesiid Larvae

By Colin Pratt*

After spending much time during the last two years searching in Sussex for Clearwing larvae and rearing them, it occurred to me that the following successful results of experimentation may be of interest to other enthusiasts of these most interesting lepidoptera.

By far the most wide ranging and authoritative account of the general collection and rearing of British Sesiidae was published over 30 years ago in an A.E.S. leaflet (1946) and, as far as I know, this excellent pamphlet has yet to be equalled. The now standard technique of section cutting using a damp sand treatment with larva or pupa *in situ* was therein described and illustrated. A further treatise was published by Fibiger and Kristensen (1974) detailing the Clearwings present in Fennoscandia and Denmark — with especial regard to the biology of the species treated, much of which is relevant to the British Isles.

As the problem of a larva made homeless by human intervention was not mentioned in either publication, and necessity being the mother of invention, I thought of the possibility of using artificial galleries which would yield high success rates with larvae in their final year. The following techniques were evolved to supplement the method of rearing Sesiidae detailed in the above publications, but differ in that the larvae would continue to function, pupate and successfully emerge, from a simple but somewhat artificial environment.

Bark Dwellers

When bark inhabiting larvae are encountered, artificial homes are occasionally necessary either because their natural habitat has been inadvertently broken during the search and subsequent safe extraction, or because of inaccessibility of the complete chamber.

When collecting larvae, representative portions of bark were taken from living tree stumps felled not more than two years previously. The section of bark thought necessary consisted of a vertical strip which included sap containing the lower portion found on or near the tree-roots. Holes were drilled vertically through the dead section well into the moist layer to a depth of approximately 5 cms., but without breaking through; and, to allow room for larval manoeuvrability, a drill diameter of some 4 mm. was used. The larvae were then introduced head first, one each to a hole. All the larvae encountered took readily to their new homes, which were then lightly plugged with cotton wool and gently mist sprayed with water. Their apparent love of moisture was later illustrated by the semi-immersed position of the cocoons in the water-soaked sand.

This simple technique proved extremely successful with species such as *Aegeria culiciformis* L. and *Synanthedon vespi-*

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formis L., despite the former's penchant in nature for wood as a pupation site.

Gall and Twig Inhabitors

Artificial chambers are sometimes needed for this type of larvae due either to accident, when for example seeking immediate species confirmation in the field, or design, if a gallery is urgently required for the cabinet.

Transference to an artificial mine was again a relatively simple matter. After cutting a fresh strong twig of the appropriate wood, it was split for half its length of roughly 25 cms. A cylindrical artificial mine was carved from the pith of the wood laterally, commencing as far down the split twig as was practicable — a groove being cut from both half sections. An adequate chamber length is usually 25 mm., with a diameter commensurate to larval size but again ensuring sufficient space is available for movement. Introduction of a larva to the artificial chamber was made as soon as practicable after cutting, either head up or down. After insertion, the split ends of the twig were brought together, taking care not to pinch the larva within, and held in place by elastic bands or small Terry clips.

The larva will, after a short examination of its new circumstances, vigorously commence to exclude all light with chewed wood and fine webbing. Occasionally, if the twig is sufficiently fresh and held in a suitable environment, the split will heal over sealing the occupant "naturally" inside — species of *Salix* being especially prone.

With regard to *Conopia flaviventris* Staudinger in particular, despite almost two years spent constructing an often complex peripheral mine in nature, this species takes quite happily to the relatively crude man-made tubular gallery.

Tree Trunk Borers

These species, being the most difficult to extract successfully from their natural sites, are perhaps those that require artificial galleries more often than most. Although section cutting is preferable to a purist collector, this is often neither possible nor desirable.

A variation of the preceding techniques was used for these relatively large larvae — yielding favourable results when applied for example to *S. bembeciformis* Hübn. After peeling back a large shaving of bark using a knife, a steeply sloping hole some 10 mm. in diameter was drilled into a limb of appropriate green wood. Before larval introduction, the orifice was sprayed with water to offset any dehydration of the wood due to the heat of drilling. After larval insertion, the bark strip was replaced and held in place by a drawing pin. As usual, a routine of mist spraying was carried out avoiding the formation of mould. A few larvae tended to wander at pupation time but it was thought to be a natural occurrence rather than the result of larval irritation. This was partially confirmed on consulting Buckler (1887) and Fibiger & Kristensen (1974).

In conclusion, the above techniques formed a simple method of successfully rearing Sesiidae larvae, when their original excavations were unavailable.

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The Genetics of East African Lepidoptera — XIV

By D. G. Sevastopulo, F.R.E.S.*

Danaus chrysippus (L.) (Danaidae) (3)

In two previous papers (Sevastopulo, 1970, 1976) I have given strong indications that the nomino-typical form is recessive to f. *dorippus* Klug.

A recent brood has confirmed this, without a shadow of doubt.

A nomino-typical female, caught in my garden in June 1977, laid approximately 50 eggs over a period of four days, and died completely spent. All the eggs laid on the first two days hatched, but some of those laid on the third, and all those laid on the fourth day, failed to colour up and were, obviously, infertile.

There were no larval casualties and eventually 40 pupae were obtained. Unfortunately, despite denuding the leaves fed to the larvae of their underside tomentum, five pupae produced Tachinid parasites. All the emergences from the remaining 35 were f. *dorippus,* 18 males and 17 females, a result that could only be obtained from a pairing between a homozygous dominant (*dorippus*) and a recessive (*chrysippus*).

An interesting point is that whilst Kenya Coast *dorippus* usually have both fore- and hind-wings an almost uniform golden-brown, all the present brood had the basal two-thirds of the forewing distinctly darker and redder than the rest.

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NOTICE TO SUBSCRIBERS

Despite inflation and increased postage costs, we will be able to hold the subscription rates for 1978 the same as for 1977. This is mainly because of an increase in the number of subscribers to the journal. Would you therefore please endeavour to encourage others to take out a subscription to *The Record* to enable the present subscription rate to be held for a further period.

LETTERS TO THE EDITOR

Dear Sir,

Whilst I am aware that Mr. Brown is well able to reply to Mr. Turner's letter (see *Ent. Rec.*, **89**: 252), his modesty will prevent him making certain points which should be offered in his defence.

As a non-collector, and one actively concerned with the conservation of British insects, I would like to point out that Mr. Brown is one of a few collectors who fulfil both the letter and spirit of the "Code for Collectors" issued by the Joint Committee for the Conservation of British Insects.

Robinson and Heath traps do not, unlike the Rothamsted apparatus, kill "hundreds of moths" if they are properly packed with egg-cartons and operated on time-switches. Accidental mortality is of rare occurrence and the number of insects that Mr. Brown collects, whether for breeding or the cabinet, represents a minute fraction of those recorded and released (the numbers listed should not be equated with the number collected!).

He is careful, wherever possible, to secure permission of entry to reserves and private sites, and he has permission to work in several Forestry Commission woodlands. Not all of the Wyre Forest is in F.C. ownership and the original collecting ban on their land came in response to petitions from Midland conservationists requesting protection for such day-flying species as *aurinia* and *versicolora* (now, alas, no longer recorded there).

I have accompanied Messrs. Brown and Gardner on numerous mothing expeditions in Warwickshire and elsewhere and I can assure Mr. Turner that they are not guilty of those practices he understandably deplores. — ROGER SMITH, Chairman of Conservation Committee, Warwickshire Nature Conservation Trust Limited, Northgate, Warwick CV34 4PB.

Dear Sir,

I would like to reply to the letter by Mr. N. E. Turner in the September issue, in which he openly criticises a collector Mr. D. C. G. Brown for, in his opinion, apparently operating too many light traps during the season.

I am at a loss to understand Mr. Turner's statement that "normal collecting should be carried out with a tripod lamp and sheet, where a proper degree of selectivity can be practised". Why cannot selectivity be practised when operating a trap? My trap merely acccommodates those moths that enter it; it doesn't kill them, whereas those traps used for "genuine scientific research" often do. According to Mr. Turner, collecting from a sheet is acceptable whereas using a trap is not. The fact that an identical light source is used makes nonsense of this statement. Even more ludicrous is his view that traps should only be operated on one's own property, and yet it is quite in order to run the same equipment elsewhere only with a sheet.

In my opinion, Mr. Turner is engaging in "Collector Bashing", something that appears to be in vogue in recent years, and I sympathise with Mr. Brown for what seems to be an unwarranted attack upon his credibility as a collector. — J. PLATTS, 11 Maydowns Road, Chestfield, Whitstable, Kent.

Dear Sir,

I am fully in agreement with Mr. Turner (*antea* **89**: 252) on the way in which Mr. Brown and colleague go about their collecting. Mr. Ron Skipworth, who is Durleston Country Park Warden, told me they entered the area without asking permission, they used an unauthorised road clearly marked as such, and their equipment was smashed not by vandals but by one man who in my view justly put an end to the noise and light by his caravan.

This sort of behaviour on the part of Mr. Brown and colleague could before long see widespread banning of m.v. traps. — R. A. BELL, Northwood Lodge, Northwood Park, Sparsholt, near Winchester, Hampshire.

Dear Sir,

I was interested to read an article in the April issue of *The Record* by David C. G. Brown entitled "Collecting in the hot summer of 1976".

While deploring the action of the person who damaged Mr. Brown's equipment, I think it only fair to put forward facts which are not mentioned in the article.

On arrival at the Country Park, Mr. Brown did not call on me — either at the Information Centre or at my home. Had he done so he would have been advised of the best places to set up his lamps and generator — certainly not near an occupied caravan. He drove without authorisation down a path where vehicles are not permitted — there are signs giving this information. He also spent the night in his vehicle which is contrary to the bye-laws which state — "no vehicle can be parked in the Country Park between sunset and sunrise".

Trapping and releasing moths in the Country Park is permitted but collecting specimens is not encouraged, although it is agreed that certain knowledge can only be gained by selective collecting.

Finally, I did not like the phrase he used — "determined to give Durlston Head a wide berth". We have many entomologists who visit Durlston Country Park again and again, and if Mr. Brown had observed simple courtesies he would have been spared his unfortunate experience. — RON SKIPWORTH, The Warden, Durlston Country Park, Durlston, Swanage, Dorset.

Notes and Observations

EURRHYPARA PERLUCIDALIS HUEBNER (LEP.: PYRALIDAE) IN LINCOLNSHIRE. — On the morning of 1st August, 1977 I noticed in the bottom of a light-trap which Mr. G. M. Haggett had run near damp forest not far from Wragby, central Lincolnshire, a slightly battered specimen of *E. perlucidalis*. This appears to be the first record of it in that county. Its British status is not wholly clear. It was first caught by Mere in Woodwalton Fen, Hunts., in 1951, though not identified until 1957. Captures in that and several succeeding years showed that it was resident and fairly common; but I do not know of any report of it there in this decade. It has also been found in Wicken Fen, Cambs.; and in several years in Walberswick Marshes in Suffolk, where it was probably also resident. However, some at least of the single recorded captures in Kent, Essex, Norfolk and Hampshire were made in circumstances which suggest immigration rather than residence. The late H. C. Huggins considered that it was probably a "settler" species which became established, perhaps only temporarily, by immigration. More information is needed to determine its true status in Britain. — R. F. BRETHERTON, Folly Hill, Birtley Green, Bramley, Guildford, Surrey GU5 0LE.

A NOTE ON EURRHYPARA PERLUCIDALIS HUEBNER (LEP.: PYRALIDAE). — Apropos of Mr. Bretherton's note on *E. perlucidalis* above, this moth has occurred annually in Essex and Norfolk for the past few years, and in 1976 was particularly plentiful very locally at light and on being disturbed from rough vegetation by day. Some years ago I found a number of the larvae on *Cirsium oleraceum* Scop. in August and September in Belgium, in a marshy locality where *perlucidalis* had long been known to occur.

I had thought that the species was breeding in Britain, but since *C. oleraceum* does not occur where the moth is found, suspected it fed here on some closely allied plant. These suspicions were realised when, early in October 1976, I was rewarded by finding two nearly full-grown larvae on *C. arvense* Scop. (Creeping Thistle) in Norfolk at the spot where the moth was present in numbers in July that year. One of these larvae died shortly after, but the other after continuing to feed for a while, formed a habitation in a dead blade of grass in which it successfully hibernated and in due course pupated. This summer upon examining the pupa in its habitation, I noticed with satisfaction that the imago had partly formed within the pupal case, but on peering closer saw with dismay that the abdomen had been partly eaten by some predator.

In places where the moth is known to occur, the larva should be searched for beneath the basal leaves of the foodplant, stretched along the mid-rib under a thin silken covering.

Holes in the leaves indicate the presence of a larva. Early September would probably be the best time to look for it in a normal year. For detailed description of the larva *see* P. Chrétien, in *Le Naturaliste* for 1893, p. 65 where the species is referred to under *commelalis* Chrét. — J. M. Chalmers-Hunt.

Pediacus depressus (Herbst, 1797) (Col.: Cucujidae) New to Scotland. — On the evening of 9th July, 1977 at about 21 30 hrs. my wife tubed a single example of *Pediacus depressus* as it walked on the net curtain at the kitchen window of our home at Milton of Campsie, Stirlingshire.

Records of this species have been admirably summarised by Mr. A. A. Allen (1956, *Ent. mon. Mag.*, **92**: 212), further captures being recorded by Moore (1958, *Ent. mon. Mag.*, **94**: 92) from Langley, Buckinghamshire, Johnson (1963, *Ent. mon. Mag.*, **99**: 209) Knole Park, Kent, and by McNulty (1970, *Proc. Brit. ent. nat. Hist Soc.*, **3** (3): 94) from Suffolk (vice-county or locality not mentioned). To these can be added one further Surrey record—Esher, July 18th, 1977, J. A. Owen, one specimen under oak bark.

All the above records refer to specimens captured in the wild, exceptionally it has occurred under domestic conditions, for example see Fowler (1889, *Col. Brit. Isl.*, **3**: 297) " . . . taken by Mr. Wollaston sparingly, among British stores, on board a yacht at Dartmouth." Fowler and Donisthorpe (1913, *Col. Brit. Isl.*, **6** (suppl.): 263) refer to a capture in the Sheerness district, in fact the record is for the specmen captured by Donisthorpe in the room of an hotel at Port Victoria.

With regards to the Scottish specimen, it is very unlikely that it was breeding in the house, but the possibility cannot be ruled out altogether. The house was built during autumn 1976, and if a breeding nucleus exists, I would have expected to have found more than one example indoors. The beetle is more likely to have flown in by chance and have been captured while trying to escape. The evening of capture was quite warm, with a gentle breeze, on reflection, an ideal night for evening sweeping. At the back of the house, about 30 yards distant is a deciduous wood, predominantly birch but with some oak, including a prostrate trunk visible from the kitchen window. Beyond this is a larch wood and more broad-leaf trees. Many other woods and plantations are in the surrounding area, including Lennox Forest, and not too far away, Mugdock Wood.

When my wife brought the beetle to me, it was at once recognised as *depressus,* being smaller than *dermestoides,* of more uniform paler coloration and relatively more shining even to the naked eye. The identity was easily confirmed by using the excellent characters given by Mr. Allen (1956, *Ent. mon. Mag.*, **92**: 212). The photographs illustrating the article by McNulty (1971, *Proc. Brit. ent. nat. Hist. Soc.*, **4** (1): 9) are somewhat confusing as they lack any form of scale, but the relative portion of the basal margin of the pronotum in each species is a useful character.

I thank my friends Prof. Owen for allowing me to record the specimen from Esher, and Mr. Allen for confirming my identification. — J. COOTER, Department of Natural History, Art Gallery and Museum, Kelvingrove, Glasgow, G3 8AG.

ABUNDANCE OF ECTOEDEMIA SUBBIMACULELLA HAW. (LEP.: NEPTICULIDAE) IN KENT. — During the field meeting of the British Entomological and Natural History Society to Northwood Hill, Halstow, Kent, on the 25th June, 1977, the leader, Mr. M. J. Newcombe and I, happened upon some large oak trees on the higher ground of the reserve, and inspecting a trunk of one, observed several Neps thereon. We saw more, then more, and quickly became aware that the trunk was covered with Neps. Another tree nearby and several others were inspected, and moths in the same profusion found on them also, many *in cop.*

After the excitement of seeing so many, it was decided to do some counting and get a rough estimate of the numbers present. We each counted the moths on a strip of bark approx. one inch wide by six feet in height. Amazingly we both arrived at a figure of twenty-two moths! This gave us around 250 specimens on an area of six square feet. A slight breeze was blowing at the time and the greater proportion of Neps were on the lee side of the trunks. Although we only looked at about seven trees with large numbers of Neps on them, there were many more that could have, and may have had, equally large numbers on their trunks. A genitalia preparation was made of several specimens taken at the time, confirming the identity of the species. — E. S. BRADFORD, 6 Maple Court, Drayton Road, Borehamwood, Herts.

THE CAMBERWELL BEAUTY IN SOMERSET IN 1977. — One was seen by J. K. Comrie in the North Petherton area on 17th April; it was basking in the sun on some shale. — B. W. MOORE, Church Cottage, Batheaston, Bath.

OTIORHYNCHUS LIGNEUS OL. (COL.: CURCULIONIDAE) IN PLENTY UNDER A STREET LAMP, ETC. — Contrary to expectation, perhaps, some at least of the largely nocturnal and flightless weevils of the above genus, which pass the daytime under plants or other ground cover, prove to be strongly attracted by artificial light. Their inability to fly, and the resulting unlikelihood of their often entering most types of illuminated trap, doubtless causes this liking to be seldom observed; but an incident that lately occurred to me shows it clearly.

On the night of 14th August, happening to pass under a street lamp (m.v.) beside a path near here, I paused to glance at a portion of low rough concrete wall below it, and was surprised to see—mostly along the top—rather numerous specimens of one of the smaller Otiorhynchi basking in its rays; some motionless, others moving slowly about. A sample brought home showed them to be, as I suspected, *O. ligneus*

Ol.—in this area a species very rare to me up to that time. Among them was a single *O. sulcatus* F., a much larger species quite common here. In contrast, the vertical faces of the wall on both sides, ill-lit or in deep shadow, had no weevils on them as far as I could see, and the numbers about the top thinned out rapidly to zero well away from the lamp; indicating that the light from it was indeed the real attraction. All or most had probably ascended the wall on its inner side which bounds some plain grass-land, since on its outer side the pavement comes right up to the foot of the wall with only a few tufts of grass, etc., at its very edge. Among the beetles on the wall a number of earwigs (*Forficula auricularia* L.) were interspersed—this too familiar insect also being fond of artificial light (and, I might add, present here this season in such prodigious quantity as to constitute a veritable plague). The night was windless and overcast.

Casual specimens of *Otiorhynchus* of various species are not seldom found indoors during the summer at least. Of these, some may be brought in with plant roots or garden soil, but I suspect that others gain access by climbing house walls at night and entering windows when open with a bright light showing. *O. rugosostriatus* Goeze has repeatedly appeared indoors at sundry times and places—much oftener than mere chance could account for*—and *O. sulcatus* less frequently, though a far commoner species.

For a London suburb, the genus is quite respectably represented in this district. Besides *sulcatus* and *ligneus* we have *rugosostriatus, singularis* L. (in part diurnal), *ovatus* L., and *raucus* F.—the latter being the rarest with one example hitherto, and all the others but *ligneus* occurring in my small garden. — A. A. Allen, 49 Montcalm Road, Charlton, London, SE7 8QG.

* See, for instance, J. M. Chalmers-Hunt, 1960, *Ent. Rec.*, **72**: 72. Just lately this weevil has twice dropped out of roses I had brought in from the garden—doubtless a source of some of the specimens found indoors.

The Status of the Purple Emperor (Apatura iris Linn.) in the Isle of Wight. — Goater (*The Butterflies and Moths of Hampshire and the Isle of Wight,* 1974) gives the exact date for only one Purple Emperor on the island, a female in Parkhurst Forest on 2nd August, 1890. From Morey (*A Guide to the Natural History of the Isle of Wight,* 1909) he quotes four further localities but without specific data, and adds that he has no recent record.

Since this species has been extending its range on the mainland for several years, the possibility that it may breed on the island becomes ever more likely, even if it has not done so hitherto. It seems worth while, therefore, to publish recent sightings, if only to alert visiting lepidopterists to the existence of the problem.

Mr. Andy Keay, Warden of the Hampshire and Isle of Wight Naturalists' Trust Reserve at Stag Copse, near Newport,

reports that he and two young people watched a specimen of *A. iris* sunning itself on a bramble leaf in the copse at 0840 hrs. BST on 16th July, 1977. Mr. Keay made four further visits in the ensuing week, but without success.

As a result of his report, I contacted Mr. O. H. Frazer of Mottistone Mill, Brighstone, who tells me that he and his wife saw a Purple Emperor near their home at 1600 hrs. BST on 28th June, 1952. On each occasion the observer mentions being struck by the purple sheen on the insect, thus identifying it as a male.

I have visited both these localities, and although neither are ideal breeding grounds for *A. iris,* this seems of little significance since distances on the island are so small, and each is in close proximity to an area which looks quite suitable. Mr. Frazer tells me that a diligent search was made for larvae in Parkhurst Forest in 1954 and 1955 by Mr. J. Lobb, without success; but it does seem likely that the pleasure of adding the Purple Emperor to the Isle of Wight list of breeding butterflies is there for the taking by a lepidopterist with the requisite skill, diligence and luck. — D. W. H. FFENNELL, Martyr Worthy Place, nr. Winchester, Hampshire.

A NOTE FROM NORFOLK AND GUERNSEY. — The season in Norfolk was very late this year. At Hickling during the first week in August, *Phragmataecia castaneae* (Hbn.) was still out in plenty, and a single example of *Mythimna obsoleta* (Hbn.) was noted, the latest I have ever seen them. *Stathmopoda pedella* (L.) was frequent on alder leaves, and a few came to m.v. light. The only migrant noted was a single worn *Celerio lineata* (Esp.) on the night of 3rd/4th August.

I have just commenced trapping in Guernsey. There is ample opportunity for recording here, particularly the micro-lepidoptera which have not been updated since the days of Luff 50 years ago. At this time (mid-October) the commonest Noctuid is *Trigonophora flammea* (Esp.) with up to 25 examples in one night to m.v. It has been recorded on the island, from the local Horticultural Research Station, since 1971, and is undoubtedly resident. English entomologists should be on the look out for it, and it would be interesting to know its status on the adjacent French coast. — Dr. T. N. D. PEET, Le Chene, Forest, Guernsey, C.I.

A FURTHER RECORD OF INFURCITINEA ARGENTIMACULELLA STAINT. (LEP.: TINEIDAE) IN KENT. — On the 9th of July, 1977, whilst on my way to Faversham Creek to search for species of the Gelechiidae, I happened to espy the spire of St. Mary of Charity Parish Church of Faversham. I had seen the spire a number of times, but on this particular occasion wondered whether there were mossy walls in the churchyard, where I might find larvae or imagos of any of the moss-feeding species of the Gelechiidae.

I did find moss and lichen on the walls, but no evidence of the Gelechiidae. What I did find was larvae of *I. argenti-*

maculella Staint. The area colonised by this species is a damp wall of several square yards containing moss and lichen, and on which there were numerous meandering larval tubes. I scraped away a patch of lichen, gathered some larvae, and took them home, hoping to breed out a few moths.

I have since been surprised and dismayed by the number of parasites that have emerged. The final count was one moth, and fifteen parasites. This amazed me, as the amount of lichen I took home covered a space of about six inches by six inches. There must have been many more larvae embedded in the lichen. I have only once encountered but one parasite of *I. argentimaculella,* and that from a larva taken at Folkestone some years ago. Two weeks later I visited the wall again and found one solitary moth.

The evidence on the wall seemed to suggest the colony to be quite vigorous, but it looks as if there might have been a population crash; and next year may see very few moths at all, if the small patch of lichen I took home is any indication. — E. S. Bradford, 6 Maple Court, Drayton Road, Boreham-wood, Herts.

A Bilateral Gynandromorph of Scotopteryx chenopodiata (L.) (Shaded Broad-bar) in Sussex. — On the 29th July, 1977, I caught a halved gynandromorph of *S. chenopodiata* on the downs near Seaford, the left side being wholly male and the right side wholly female. The specimen is in good condition. My attention was drawn to the gynandromorph as it fluttered to rest in the grass beside me and closed its wings, showing a colour contrast between the two sides. — R. M. Craske, 29 Salisbury Road, Hove, East Sussex.

Agonum gracilipes Duft. (Col.: Carabidae) in Sussex, and its Deletion from the Irish List. — My friend Mr. P. J. Hodge (who already has to his credit the addition of *Magdalis memnonia* Gyll. to our list, and other highly notable captures) took and correctly identified a specimen, which I have seen, of the above ground-beetle at m.v. light at Ringmer, near Eastbourne, 8.vii.75. *A. gracilipes,* one of our two very rare species of *Agonum,* has its headquarters on the Suffolk coast about Lowestoft, where it has been taken singly, often at longish intervals, from 1831 to the first decade or so of this century and possibly later; and might probably still be found there occasionally if worked for. It has occurred also on the Norfolk coast at Yarmouth, and perhaps on that of Yorkshire at Hornsea (cf. Fowler, 1887, *Col. Brit. Isl.,* **1**: 91; Fowler & Donisthorpe, 1913, *ibid.,* **6**: 207). Moore (*v. inf.*) marks it also for Cambs., but I feel that this should be queried, and his indication for Yorks. certainly should be. Claude Morley (1898, *Ent. mon. Mag.,* **34**: 221-3) gave a history of the species in Britain up to that date. Its occurrence for the first time on or near the south coast is interesting, particularly if it results from, or heralds, an extension of the very restricted British range of this *Agonum*; but, of course, the beetle might equally have been a casual immigrant or wanderer.

Morley (*l.c.*: 222) drew attention to an Irish record of *A. gracilipes* (Ardara, Co. Donegal), which he was inclined to doubt—with reason, since it was later withdrawn as having been erroneously based on a specimen of *A. muelleri* Hbst. (Johnson & Halbert, 1902, *A List of the Beetles of Ireland*: 579). From what is said there it appears there was also a record for Armagh by Johnson, which I cannot trace, but the point is now of no consequence. What *is* important is to delete the indication of *A. gracilipes* as Irish in Moore, 1957, *Ent. Gaz.*, **8** (3): 179 (species 228), this being the definitive work on British Carabid distribution and widely used. For this mistake I fear I was—in all innocence! —partly responsible, since in earlier correspondence with Dr. Moore I had pointed out to him the existence of the Irish record; remarking on its interest *if genuine,* but counselling due caution in accepting it. Unfortunately at that time neither of us was aware that a correction had been published! — A. A. ALLEN.

INSECT FAUNA OF BUDDLEIA DAVIDII. — Mr. Antram's record (*Ent. Record,* September 1977) of the larvae of *Cucullia verbasci* L. feeding on *Buddleia davidii* prompts me to report that in July 1977 I too found the larvae of this moth on *Buddleia* in my garden at Leicester.

In a recent article (*Country Life,* 1st September, 1977) I outlined the history of *Buddleia davidii* in Britain. The bush was introduced from China about 80 years ago and, as every entomologist knows, its flowers are extremely attractive to butterflies, moths, bees, hoverflies, and many other nectar-feeding insects. *Buddleia* belongs to a family of plants unrepresented in the native British flora and we would therefore not expect its leaves to be palatable to many species of moth larvae. But records are beginning to accumulate suggesting that several species have switched to it. In addition to *C. verbasci,* I have found larvae of the following species feeding on the leaves: *Melanchra persicariae* (L.), *Orthosia stabilis* (Denis & Schiffermüller), *Phlogophora meticulosa* (L.), *Polymixis flavicincta* (Denis & Schiffermller), and *Odonoptera bidentata* (Clerck).

In collaboration with colleagues at Oxford, I have this year initiated a small research project aimed at assessing the importance of *Buddleia* to the British insect fauna. I would thus be glad to receive all records of insects (other than nectar-feeders) found eating the leaves, flowers, stems, or seeds of *Buddleia davidii.* — D. F. OWEN, 66 Scraptoft Lane, Leicester, LE5 1HU.

THE DEATH'S HEAD HAWKMOTH (ACHERONTIA ATROPOS L.): A SWEET ADVENTURE? — Recently, September 1977, I had occasion to have my generator and m.v. equipment tested at a firm in Guildford which I have patronised for this purpose for some time. The foreman who knows my interests, mentioned that a member of their staff had a huge moth come into their house at nearby Normandy. The young lady, Mrs. Carol Chitty, was duly summoned and told me how in the

autumn of 1976 she was about to go to bed when she noticed a huge insect at rest by the fireplace in their living room. It was duly captured and contact was made with Haslemere Museum who pronounced it to be a Death's Head; but it later transpired that its arrival, probably down the chimney, was due to a wild bees nest being lodged in it. Doubtless this insect had in some way been attracted to this source of sweetness which has often been recorded in the literature, but this is the first time I have had direct evidence of this phenomenon. It has even been said that the high-pitched whistle which the moth emits, has a mesmerising effect on the bees, but this theory is very problematical. Incidentally, the specimen in question had its portrait in the *Surrey Advertiser,* and it is still preserved by its captors. — C. G. M. DE WORMS, Three Oaks, Shores Road, Woking, Surrey.

A NOTE FROM DOVER. — I was pleased to find one male *Lithophane leautieri* Boisd. in my trap last night. It is certainly spreading. Also of interest is a *Palpita unionalis* Hbn. that came to my trap on 11th October, the first I have had here for ten years. On the 19th October last, a *Dioryctria abietella* D. & S. came to my trap. This species has always puzzled me. It is usually out in July/August; the latest date I have previously recorded it being 26th August. This latest specimen is a small one, al. ex. 2.21 cm. — G. H. YOUDEN, 18 Castle Avenue, Dover, CT16 1EZ, Kent, 22.x.1977.

SOME REMARKS ON LYTTA VESICATORIA L. (COL.: MELOIDAE) IN BRITAIN. — Apropos of the Editor's record of this striking beetle in Kent some 40 years ago (*antea*: 198), it may be worth recalling that there was an "outbreak" of the species, likewise in the Canterbury district (Stourmouth), in July 1948—as reported by the late Dr. A. M. Massee in the annals of the Kent Field Club (ref. not to hand). The beetles swarmed on a privet hedge enclosing a tennis court, and were, I understand, in such numbers as to cause annoyance to the players, in consequence of which Dr. Massee's professional advice was sought. A year or so later they had quite disappeared. This is the last British occurrence of the "Spanish fly" in quantity that I know of, though there have since been one or two isolated captures elsewhere.

Although it is generally assumed that the status of *Lytta vesicatoria* in Britain is that of a casual visitor from the Continent which occasionally breeds very freely for a season or two in a particular locality, it seems never to have been noted in the act of immigration despite its very conspicuous and unmistakable appearance. On the other hand there is some evidence that a minimal resident population may persist year after year—perhaps indefinitely—in certain localities favoured by the insect, where it has appeared often at long intervals but sometimes in profusion. There seem to be two main areas, a southern and an eastern, in which the outbreaks have mostly been concentrated: S. Hants. (including Isle of Wight) west-

ward into Dorset, and N. Essex through Suffolk into Cambs. The latter of these areas of distribution now evidently requires to be extended southward to N.E. Kent. It further seems very possible that during periods of scarcity the beetles live rather high up—beyond the reach of the ordinary beating-stick—in some of the larger ash trees*, so that only stragglers, at most, would probably ever be seen; and that only after a build-up in their numbers do they spread to related shrubs such as privet and lilac, where, naturally, they soon attract attention. The larva has been found here perhaps only once, in Suffolk, but as an inhabitant of the underground nests of certain solitary bees it would in any event be seldom observed. — A. A. ALLEN.

* The late Horace Donisthorpe told me that he obtained his series in an East Anglian locality where it had occurred in the past, by spreading very large sheets under a suitable-looking ash and jarring the boughs and foliage with a long pole.

LASIOCAMPA QUERCUS SSP. CALLUNAE PALMER (NORTHERN EGGAR) ATTRACTED BY CITRONELLA? — On the 12th July I took a lady visitor to the top of Tallabrig on the low hill on the island of Sanday to see the view of other islands and also inspect the *Z. purpuralis* colony nearby. Being stockingless, she had anointed her ankles with citronella to repel the midges. To our surprise a male *L. quercus* (*callunae*) came up, circled around and landed on her feet, around which it fluttered, apparently attracted by the odour of the citronella. — J. L. CAMPBELL, Isle of Canna, Scotland.

OBSERVATIONS ON THE PUPAL STAGE OF THE PURPLE HAIRSTREAK (THECLA QUERCUS L.). — In 1976 and 1977 I reared a small number of Purple Hairstreaks (*Thecla quercus*) from larvae collected on Inchcailloch, part of the Loch Lomond National Nature Reserve. Particular attention was paid to the length of the pupation period, as there is a general lack of agreement in the entomological literature on this aspect of the butterfly's life history. As examples: "a fortnight or so" (Rowland-Brown, 1912), "20 days" (Acworth, 1947), "about 30 days" (Frohawk, 1934), "about 36 days" (Sanders, 1939). It is noteworthy that most of the early standard works are silent on the subject.

Just prior to the onset of metamorphosis, all of the captive larvae went beneath the surface of the pupating mixture provided, there taking about 2-3 days to achieve the final pupal state. Following a cool June/early July in West Scotland during 1976, the butterflies emerged 22 days after the larvae had begun the pre-pupal stage, but with much warmer weather over the same period in 1977 the complete metamorphosis from larva to butterfly was unexpectedly prolonged by a further 4-5 days. Similar observations have been made by Dr. C. J. Luckens of Southampton, who also reared a number of *T. quercus* in 1976 (*Ent. Rec.*, **89**: 170) and 1977. In southern Britain, however, the weather pattern during the pupation

periods of both years was reversed, being warm in 1976 and cool in 1977, the butterflies emerging after 21-25 days and 17-21 days respectively (Dr. C. J. Luckens *in litt.*). It would appear therefore that air temperature can significantly influence the duration of the pupal stage of *T. quercus,* and may account for the wide differences of opinion given by the authors cited above.

References: (1) Acworth, B., 1947. *Butterfly Miracles and Mysteries,* London. (2) Frohawk, F. W., 1934. *The Complete Book of British Butterflies,* London. (3) Rowland-Brown, H., 1912. *Butterflies and Moths at Home and Abroad,* London. (4) Sanders, E., 1939. *A Butterfly Book for the Pocket,* London. — J. Mitchell, 22 Muirpark Way, Drymen, Glasgow, G63 0DX.

Lepidoptera in Co. Mayo. — On 10th June, 1977, while collecting lepidoptera with Mr. B. K. West on some Burren-type terrain about two miles south of Partry, Co. Mayo, among the more interesting species noted were: *Zygaena purpuralis* Brünnich (several), *Photedes captiuncula* Tr., *Platyptilia tesseradactyla* L., *Aethes piercei* Obraztsov, *Leucoptera lotella* Stainton and *Glyphipterix schoenicolella* Boyd. Beating juniper produced larvae of *Thera cognata* Thunb., from which we bred numerous moths. — J. M. Chalmers-Hunt.

Foodplant of the Juniper Pug (Eupithecia pusillata D. & S. = sobrinata Hbn.). — Both Allan (*Larval Foodplants*) and South (*Moths of the British Isles*) give juniper as the only foodplant of the pug of that name, although the latter remarks that the moth is sometimes noted in localities where juniper appears to be absent. It is perhaps worth recording that while staying at North Kessock on the Moray Firth this August, *E. pusillata* was one of the commonest visitors to m.v. although I could find no juniper in the area. — R. G. Chatelain, 65 East Drive, Orpington, Kent.

Ova of the Common Swift Moth: Hepialus lupulinus Linnaeus. — I notice with some surprise, in Vol. 1 of "The Moths and Butterflies of Great Britain and Ireland", that the ova of *Hepialus lupulinus* are "not known". This must surely be because no one has bothered to record so common a species.

The ova, which are slightly ovoid in shape, are broadcast by the female and, when laid, are a clear, shining white. Within an hour they have turned grey and after 4-6 hours are pure black. They remain like this for 8-10 days and then become slightly paler again before the larva hatches. They therefore follow a similar pattern to that of the other *Hepialus* species.

Two females which I took laid c. 80 ova within half an hour, but anyone who wishes to obtain ova of the species has only to examine the bottom of his m.v. trap after taking the appropriate females. — Geoffrey N. Burton, "Mar-y-Mar", Minster Drive, Minster-in-Sheppey, Kent, ME12 2NG.

AGONOPTERIX CAPREOLELLA ZELLER (LEP.: OECOPHORIDAE) AND MOMPHA LACTEELLA STEPH. (LEP.: MOMPHIDAE) IN KENT. — I have single specimens of these two local and perhaps rare species which I have never before recorded until now. The *capreolella* I netted among the short turf on the downs above Otford on the afternoon of 29th April, 1967, and suspecting it might be this, I submitted it to Dr. J. D. Bradley who kindly confirmed the determination genitalically. I am not aware of any previous record of *capreolella* for Kent. The *lacteella* I netted in Kiln Wood, near Lenham, on the afternoon of 19th June, 1967. It was flying in the sun and is in excellent condition. I know of no other confirmed record of this species for Kent. (The record in Scott, *Lep. of Ashford* (1964), p. 77, is doubtful.) — J. M. CHALMERS-HUNT.

THE CAMBERWELL BEAUTY IN YORKSHIRE IN 1977. — Mr. J. Dixon, a member of the Grange-over-Sands Natural History Society, saw a *Nymphalis antiopa* L. at aubretia at Burley in Wharfedale on 1st May, 1977. — D. W. KYDD, 6 Yewbarrow Road, Ulverstone, Cumbria. [This appears to be the fourteenth post-hibernated *antiopa* noted in Britain in 1977. — Editor.]

NYMPHALIS POLYCHLOROS L. IN FOLKESTONE. — On the 23rd August, 1977 a single Large Tortoiseshell in perfect condition appeared on the buddleias in our garden on the Leas in Folkestone, remaining there most of the day, together with ten *Inachis io,* five *Cynthia cardui,* and several *Aglais urticae.* The 23rd August was an absolutely perfect, sunny, windless day, but the day before had been very bad with 1.95 inch of rain and a very strong south-east wind, which I think must have brought the *polychloros* in from France. The 24th August was again very bad with a terrible south-west gale and rain and the *polychloros* was never seen again. — B. C. S. Warren, F.R.E.S., 31 Clifton Crescent, Flat 2, Folkestone, Kent.

The Camberwell Beauty in August and September 1977

IN MIDDLESEX. — One of my students, Clive Harper, told me that on 27th August, 1977, at about 4.15 in the afternoon, he saw "a large, dark-coloured butterfly with pale margins to the wings" flying on Northwood Golf Course, Middlesex. When he was shown the drawer of Nymphalidae in the school collection, he immediately pointed to *Nymphalis antiopa* and said he was certain that was the butterfly he had seen. I see no reason to doubt this record. — B. GOATER, 22 Reddings Avenue, Bushey, Herts., WD2 3PB.

IN KENT. — On the afternoon of Wednesday, 7th September, I saw a butterfly here in my garden that I had not seen before. It was sunny at the time, the butterfly was quite large, brown with a creamy-yellow edge to its wings. After looking at the books I realised that it must have been a Camberwell Beauty and that I was very lucky to see it. — EUNICE CHANDLER (Mrs.), 2 Rusland Avenue, Orpington, Kent, BR6 8AU, 9.xi.1977.

ODONATA SURVEY:

North Hampshire and Berkshire

At the suggestion of Mrs. Beth Savan, who has been working for the Nature Conservancy this year on a survey of the distribution of Odonata in the two vice-counties, it has been decided to set up a long-term project to plot their distribution on an O.S. grid basis. The survey is initially being conducted by Graham Vick and David Keen, but it is hoped that other enthusiasts will come forward to assist. Despite the popularity of these vice-counties amongst entomologists generally, it is most noticeable that they are at present very much under-recorded. Many 10 km. squares have no Odonata records at all and most have only a few.

We should be most grateful if any entomologist with records for the area would send them to the address below giving, where possible:

(i) the species;
(ii) the name of the locality and description where relevant;
(iii) the date of the record;
(iv) an indication of the commonness of the species at the locality;
(v) whether imago or larva; was oviposition witnessed?; and
(vi) the grid reference (if possible) — four or six figure.

If all these are not possible, please write nevertheless. All records will help. Even better, why not join us?

Graham Vick,

"Crossfields", Little London, near Basingstoke, Hants.

(Telephone: Basingstoke 850718)

EXCHANGES AND WANTS

Records Wanted. — I am currently up-dating my card-index list of lepidoptera records for Cumbria with a view to early publication of a modern list. Any records from any part of Cumbria would be gratefully received and duly acknowledged. Particularly desirable are records of microlepidoptera and any from remote and relatively unknown parts of the district. — *Dr. N. L. Birkett,* Kendal Wood, New Hutton, Kendal, Cumbria, LA8 0AQ.

For Sale. — We hold a few copies of a large number of separates of papers that have appeared in the *Record.* These are available at reasonable prices. — Please advise your requirements to: *P. A. Sokoloff,* 4 Steep Close, Orpington, Kent, BR6 6DS.

For Sale. — Separates of Col. Emmet's "Notes on the British Nepticulidae". Unbound, with printed paper cover. Price 90p, including postage. — Apply to *P. A. Sokoloff,* 4 Steep Close, Orpington, Kent, BR6 6DS.

THE ENTOMOLOGIST'S RECORD
AND JOURNAL OF VARIATION

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

TO OUR CONTRIBUTORS

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CONTENTS

The Entomologist's Record and Journal of Variation

SPECIAL INDEX

For British Lepidoptera this Index follows the nomenclature of "A Check List of British Insects", Part 2, 1972 by Kloet & Hincks. Where the contributor has used a synonym, a cross reference is given. Any newly described taxa (species, genera, etc.) are distinguished by bold (Clarendon) type, and taxa new to the British fauna by an asterisk. Moreover, (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* synonymy, i.e. published for the first time; italics without this sign, recent synonymy that may be unfamiliar to many.

Vol. 89, 1977

PAGE

LEPIDOPTERA

COLEOPTERA

DERMAPTERA

DIPTERA

[1] Not now on British list (records referred to forms of *rufimanus*).