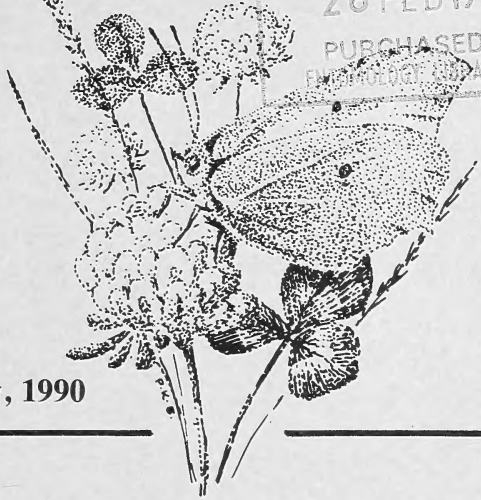


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**The Bulletin
of the Amateur
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Society**

EDITOR

BRIAN O. C. GARDINER, F.L.S., F.R.E.S.

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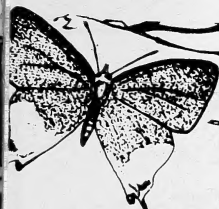
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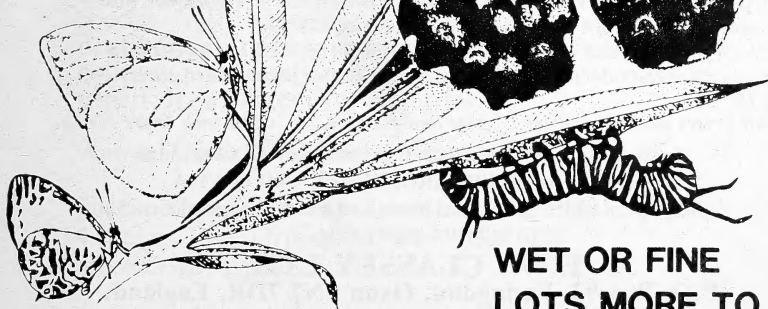
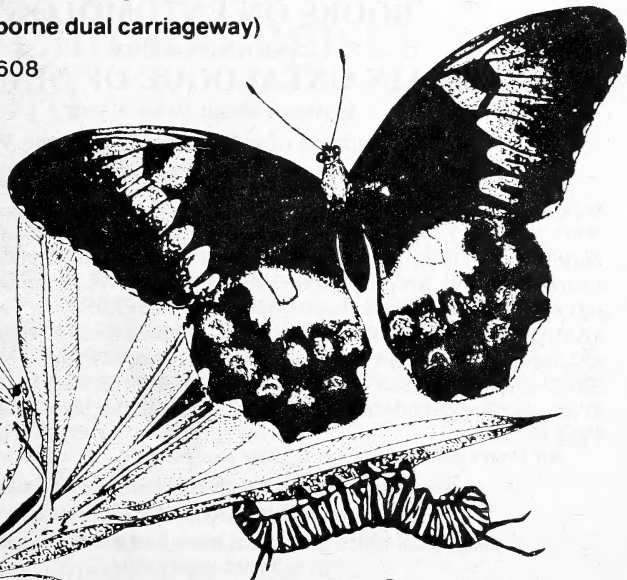


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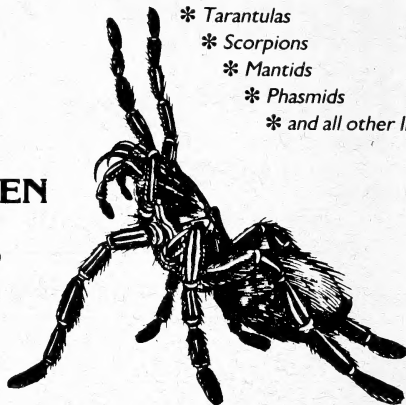
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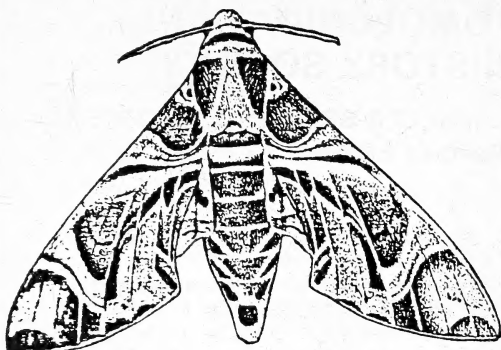
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AES BULLETIN

No. 368



GYPSY MOTHS — AN APOLOGY AND AMENDMENT

Licence only required for Asian specimens

(Last October (*Bulletin* 48: 188) we published a note by Duncan Reavey that a licence was now required in order to import or breed Gypsy moths. We have now heard from Mrs S. M. Halliwell, of MAFF, as well as from Duncan, and it turns out that this information was incorrect, and that only Asian stock requires a licence. We print below the relevant paragraphs from the letters we received. — Editor.)

From Duncan Reavey (6934)

I have just received a letter from MAFF with respect to my note on Gypsies and must apologise to members for the wrong information given. I believed I was on safe ground because I have had correspondence with MAFF on Gypsies over the last 18 months; furthermore their publication *Guide for Importers — Importing Invertebrates* did not mention any exemption to European stock. At no time during the correspondence did MAFF suggest a permit would NOT be required for European stock (clearly if they had said this, I would have obtained stock from dealers in the UK and saved lots of time and trouble in obtaining it from another licensed source in order to keep everything above board). More infuriating, from my own point of view, is that the requirement to license American stock (which I had) was removed in September 1988, yet I was not informed of this and was asked to apply for an extension to my licence in spring 1989!

From Mrs S. M. Halliwell, MAFF, Harpenden Laboratory

It has come to our attention, through some of your members, that an article appeared in the October *Bulletin* which gave some incorrect information. The article concerned the Ministry of Agriculture, Fisheries and Food's policy on the licensing of *Lymantria dispar*. The correct situation is that only stocks of *L. dispar* originating from Asia require a MAFF licence. Livestock of this species from any other source may be imported, kept, sold or exchanged without restriction. However, the release of this species into the wild is restricted by the Wildlife and Countryside Act, 1981.

FURTHER SIGHTINGS OF PAINTED LADIES IN WARWICKSHIRE

by J. A. Hardman (1234)

Brian Mitchell's notes (*Bulletin* 48: 119) on *Cynthia cardui* in Warwickshire during 1988, prompted me to recall some supplementary records. His records of fresh specimens in early August would coincide with my own first-ever finds of larvae. On 23rd June 1988, at the National Vegetable Research Station (now re-named Institute of Horticultural Research), Wellesbourne (SP 270570), I happened to notice caterpillar damage on the leaves of an isolated clump of eight creeping thistle stems. On inspection it was obvious by the characteristic spun-together leaves, conspicuously "disguised" with discarded thistle spines, that this was the work of about three-quarter grown Painted lady caterpillars. I collected all the ones I could find — fourteen — and sleeved them on spear thistle. On 11th July I found another caterpillar plus a vacated feeding site and on 19th July yet another caterpillar, again at the Wellesbourne site, on another group of creeping thistle stems about thirty yards from the first. Single vacated sites were also found on creeping thistle at Ettington Park (SP 250470) on 9th July and at The Pleasance, Kenilworth (SP 68724) on 13th August.

The caterpillars I had sleeved all pupated without any being parasitised and all emerged between the 10th and 26th July. These I released. My records for total sightings of adult butterflies in Warwickshire during the decade 1980-89 have been 6;1;16;6;1;9;4;1;2;0 respectively.

A PART GYNANDROUS BRIMSTONE IN WILTSHIRE

by K. W. Thornton (8543)

I would like to report the sighting of a partly gynandromorphic Brimstone butterfly (*Gonepteryx rhamni*) which my wife and I sighted. On a warm day early in September last year we were walking through a sunny ride in a wood near Marlborough, Wiltshire, and watching an abundance of butterflies feeding on a large patch of knapweed. Among these, many Brimstones of both sexes were fluttering about. However, one butterfly a considerable distance away caught my eye, for it appeared to be a chequered yellow colour, and on closer inspection proved to be partly gynandromorph. The butterfly was largely the female pale lemon yellow but had several streaks of sulphur yellow male colouring, asymmetrically distributed on both the fore and hind wings. The butterfly was caught for inspection and then released to resume his/her feeding.

DOWN THE TUAK ROAD

by Leigh Plester (2968)

Five hundred degrees Celsius, an RH of around one thousand. The fans were sluggish and the silence was that of a Buddhist temple as two lines of people snailed through passport control in Kuching airport. It had taken eight months to obtain a filming permit. Since mentioning department of agriculture entomologist Stephen Kueh's name, I hadn't heard from him. Convinced someone had intercepted our letters, I now stood in the lion's den; and sweated.

A dark man in a crisp uniform approached, deadpanned me, and glanced at a photograph. I wondered what gaols were like in Malesia. Suddenly he clapped a hand on my shoulder. "Frass me," I thought, "they've got me." "Mr Plester?" I was shocked rigid. "I am Wong of the Department of Agriculture. Stephen is off duty tonight, so he asked me to look out for you." He whisked us through customs control like an over-ripe papaya and suddenly we were free. From that moment on I loved Sarawak.

Stephen, slim, Sarawak Chinese, a sideways oblique glance on quiet legs, master of HASH, loaded our equipment into his car. Keeping to the right in a country where one keeps to the left, he unnervingly got us to his house. Sounds of froggies in concrete culverts, a dog barking, blackness, traffic down the bypass to Bandar Kuching, geckoes rubber-necking towards moths and slim, yet dangerous, bees on the ceiling under the balcony, the pulse and scent of the tropics. Stephen showed us round his newly purchased house — white walls, cockroaches, screens at the windows, midges under neon lights — the while speaking Chinglish, which took a bit of getting used to after two decades of English. "I'm sorry," he said eventually, "but your room (with the large mahogany bed and enormous Asian wardrobe) is the only one they left me a fan in. May I sleep at the foot of your bed?" He did so on his Chinese mat and continued to do so whenever we were in Kuching. Nick had a mattress on the floor in another room. Served him right for being a "sound man" instead of a cameraman/scriptwriter/producer. I gazed at the silhouettes of the 16mm Bolexes. Were they already growing mould? Clad only in my thoughts, I drifted into velvet sleep. Europe sloughed off like a nymphal case. Tuan Plester had arrived.

We had come with three natty towels from Singapore. Blithely we entered the Sarawak Plaza and began to look for the expected tropical gear and jungle boots. Bevies of desirable young ladies barely out of school surrounded us. I regularly walk under snakes with a top hat on but I dwarfed these girls, who smiled or giggled every time I looked at

them. Nick snook about like a bloke looking for a beanstalk, straw planter's hat tipped back, grunted into shoes three sizes too small. In the event we had to settle for what we considered most unjungly boots, one or two shirts that were a tight fit even on me, some snazzy hankies and some short shorts ex-Hong Kong.

In the afternoon we strolled down the road towards the Kuching bypass. Two moths sat on it, a magnificent *Cethosia* came bowling down it and a large bush cricket eyed us warily (but not warily enough) from a bush. Crickets sang on the waste ground at the other end of Stephen's road and building workers sang out to each other in Bahasa Malaysia as they put up rows of startlingly modern semi-detached houses.

The next day (11th April) it rained. The humidity rose by several hundred per cent and Stephen succeeded in backing his car into an unyielding concrete oval filled with an *Isora* bush covered with delightful dark salmon pink blooms. We set off in a Land Cruiser belonging to the "Jabatan Pertanian" (the Dept of Agriculture, thereafter referred to as "The Jabatan") and drove along to Samarahan, a village with a Jabatan HQ and a post office. Here the rain ceased. It was 1pm before,



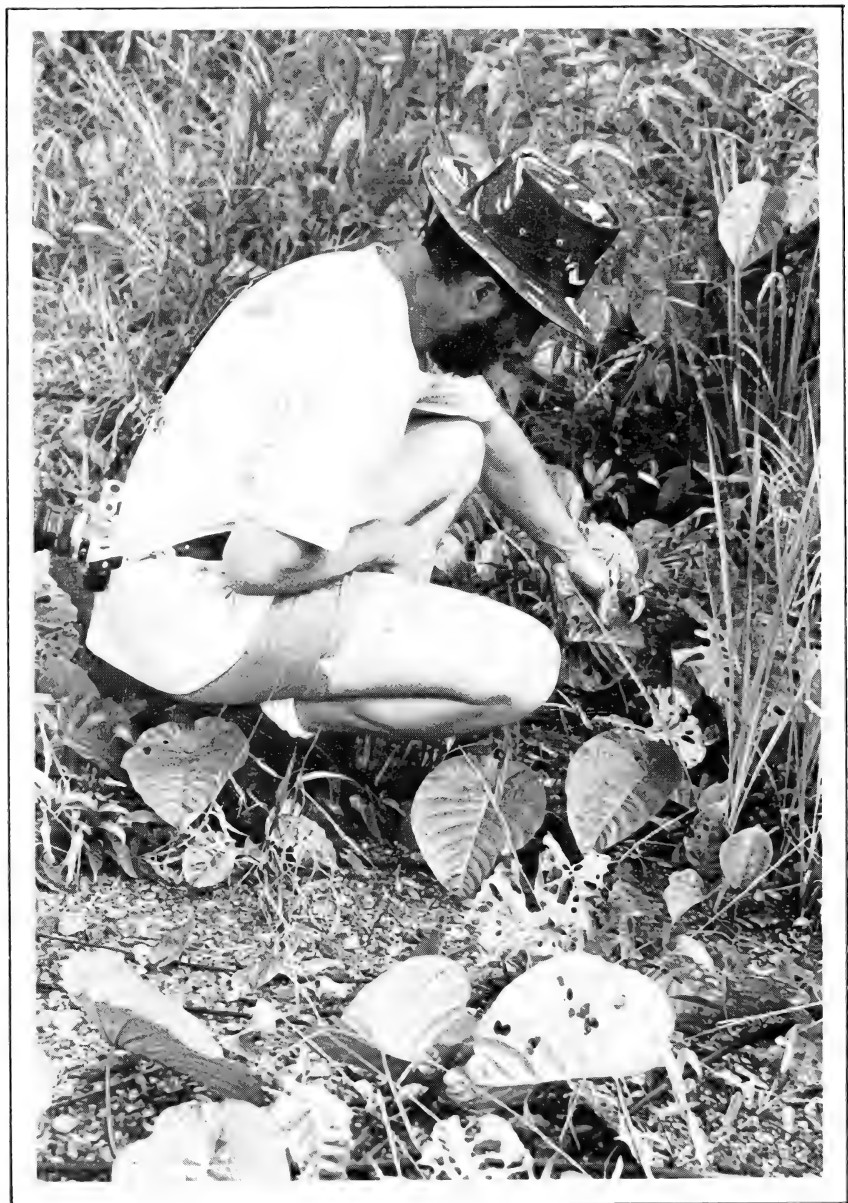
accompanied by several Jabatan officers, we boarded the Jabatan longboat and sped down the brown river towards a *kampung*, Sambir, where there were Jabatan guest houses. Unloading, we carted our filming gear up vertical steps to the wharf, whence we trooped along to our bungalow, a one-off sardine can on which every man-jack slept on the floor to save on expenses. Apologies, said Stephen, who had booked us a separate rest house that, owing to some oversight, was now occupied. We moved there the next day and were able to sleep in an air-conditioned palace, the air being lethargically stirred by a fan in the next room.

The object of the exercise was the "Cocoa Moth Project". With the worldwide rise in cocoa prices, illegal importation of cocoa beans from neighbouring Sabah had taken place, bringing with it the cocoa moth, a dreaded pest the size of a clothes moth. Its *ulat* (larva) feeds inside the cocoa pod, destroying the beans before turning (believe it or not) into a *kepompong*, which may seem an apt description of the old cabbage moth larva, but in fact is Malay for pupa. Incidences of up to 70% of an entire crop had already been reported and the Jabatan lads were now comparing untreated control plantations with "dusted" (crop sprayed) ones.

Insecticides are used with abandon in Sarawak. Where temperate zone farmers find the weather their biggest antagonist, tropical farmers fight a constant battle against pests, many of them insects. When asked whether the chemicals were dangerous Stephen replied "Yes" in his usual bland manner and went on to tell of the "dusted" locusts that had fallen from the skies into the laps of the Iban, one-time headhunters. Famed for their catholic taste for anything containing proteins, the Iban gathered them up, ate them with relish and then explained to the distraught health authorities next week that, well, here we still are so what do you mean toxic?

Kampung Sambir consisted of a long line of crossways laid planks on battens raised above ground level. Bungalows on stilts and open fronted shops cum cafes lined this main street, which also went over the remnants of a river well stocked with sedges and vociferous frogs. The planking made walking about easy but unfortunately the main beast in Sarawak is now the motor cycle. The villagers were largely fishermen who motor-cycled down to the wharf before dawn to launch their boats. Most of the plant nails had worked loose, which meant something like 3000 double thuds per motor cycle per pre-dawn. Which made alarm clocks obsolete.

Each evening, as the sun went down (around 7pm), the frogs started up and just as they reached the height of their belching and burping crescendo, the Moslems started up and that was the end of the evening's recording. Trying to single out a cricket's chirps from the croaking of a



The author searching for larvae. Note the nibbled leaves and the camouflage hat designed to attract cryptic moths to settle thereon. (Photo Raija Majuri.)

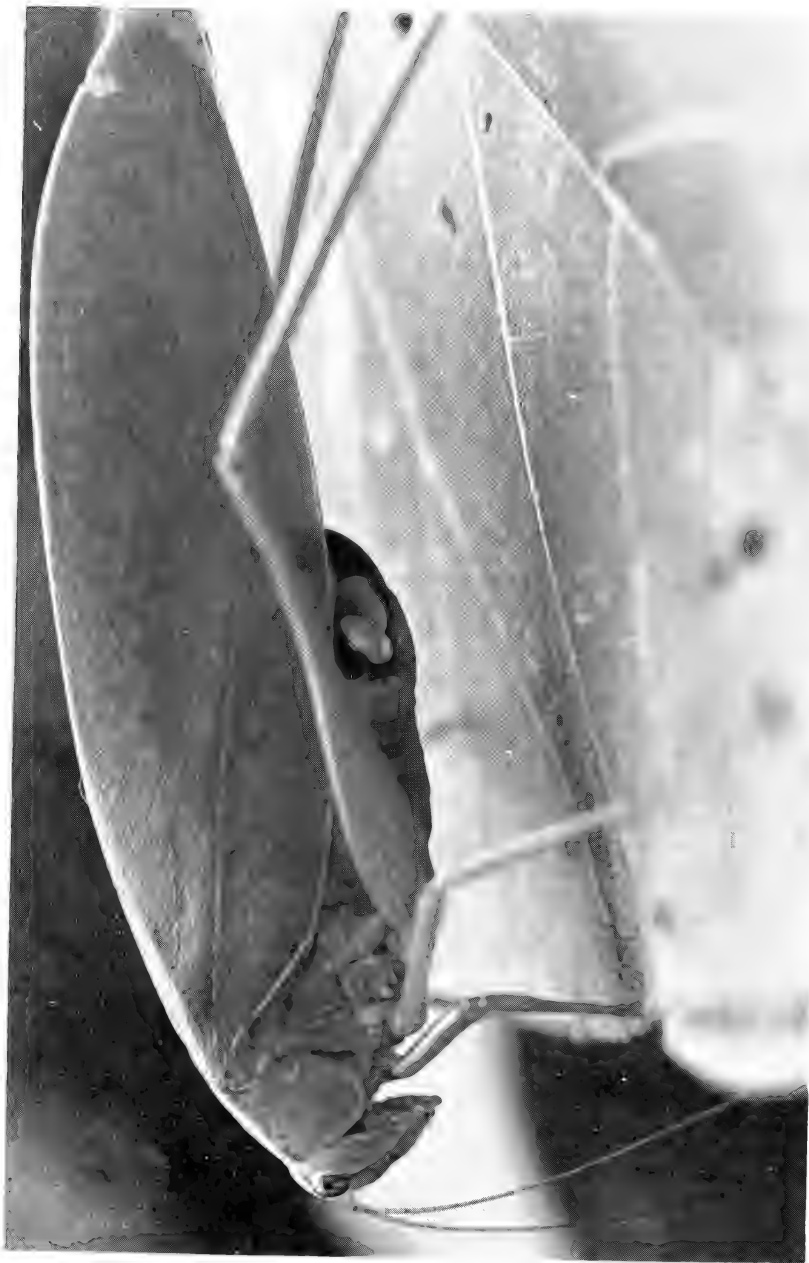
platoon of sex-starved froggies backed by the ululations of the devout was more than modern electronics could cope with, even with the help of a "rifle mike" and Allah.

By day we roved in the peace of the plantations. Farms with palm frond roofs, stilts and open walls, children sitting silent and polite round a table, chickens scratching busily in the living room, a fridge humming somewhere, boiled water unbelievably cool, Hibiscus bushes hung with bright red blooms round which *Papilio memnon* and Orange-dog swallowtails danced. Inter-crops consisting of large coconut palms, wilting, droopy fronded, and cocoa bushes, their new leaves bronze-coloured and hanging limp like those of many tropical trees. A maze of paths, some with concrete slabs set along them, and deep ditches with a smear of water that would rise slightly as the tide came in a few kilometers away. Bulbous-eyed mud skippers goldfished-bowled you from the viscous mud and brown snakes lay inert, while small, bright red dragonflies flitted by, seemingly unaware of the mudskippers.

A small black and white bird which (in view of its ditty, a constantly repeated "wittu") we dubbed with a procreative expletive in Finnish, occasionally exploded into song. Golden Yellow *Eurema* butterflies flitted among the sparse undergrowth and you would frequently meet along the path a small butterfly the spitting image of a wood white with bigger spots. Several species of brown and slate blue danaids flapped past and, wherever there was a convenient perch, another small dragonfly with just the tips of its wings transparent, the remainder glinting brown, would perch and twist its head to get to see you better.

Evenings were devoted to sitting in an earthen floor cafe cum shop run by Sim, a typical Chinese Sarawakian — an "inscrute" as Nick called them — hospitable and unobtrusive as only a Chinese proprietor can be. I am not a beer drinker, preferring wine and the occasional small glass of Irish whisky when I'm writing up my notes. But Sarawak serves the world's silkiest soft drinks, the hard stuff in that climate was out, and so it was either beer or boiled water. During the daytime we drank water but in the dark of the evenings we would bloat ourselves on beer, after which we would repair to the delicious communal Jabatan feast which a couple of chaps (who were obviously at the wrong end of agriculture) had spent most of the meanwhile cooking. Round about nine o'clock Nick and I would slip off back to "Sim's Saloon" and before we could raise our dew-beaded glasses to our lips the first *Amathusia* butterfly would drift in, to bounce along a neon light, buffet a wall, find another lamp and repeat the process, before coming to rest on one of the dark, non-reflective walls covered with old-fashioned adverts.

Having viewed this evening routine before, I naturally had my kite net handy and on the second day I rose, propped a chair on the table and did



"A bush cricket regarded us warily". Note the eggs ready for laying. (Photo Majuri and Plester)

a reasonable mime of a batman serial up near the ceiling. A cascade of dangerous bees and a huge black wasp came buzzing down. Two spiders vacated their webs and the chair (obviously drunk) began to teeter. Give them their due, the clients (who were all on soft drinks of tea) hardly reacted at all, but a few minutes later the shop entrance was swarming with *kampong* children. Nobody said anything until, as my *Amathusia* made good its escape, I let loose a stream of obscenities in colloquial Finnish.

“You want to try in the cocoa groves,” said my mentor, Stephen, next morning. So we plodded through the cool of the trees ostensibly bent on an agricultural survey but in fact trying to catch *Amathusia*. A mouse on wings, it would dupe you into believing it had settled under a dark leaf, only to spring out from under your elbow and dash off through the plantation. But not too far. Just enough to give you acute heat-stroke getting along to it. Wise in the ways of *Amathusia*, Stephen finally caught one, giving it a sharp nip to the thorax. Hands trembling (I was by now ready for my sun-downer), I pulled aside the white gauze. And there it lay — a coleopterist’s dream! Disappointed, I turned it over, expecting to find a dung beetle lurking underneath. Why on earth a butterfly living in a cocoa plantation should see fit to look like a dollop of horse manure, I do not know; it completely ruins the theory of natural selection.

(to be continued)

BOOK REVIEWS

Natural history excursions in Teneriffe by Myrtle and Philip Ashmole. Small 8vo, pp.252 illustrated. Kidston Mill Press, Peebles 1989. Price (paperback) £7.95.

A guide for the casual entomologist on holiday, limited in its entomological content, but in the few pages on insects there are Keys to dragonflies, butterflies and hawkmoths of the area.

CHE Guides to Insects of importance to man: 2. Thysanoptera by J. M. Palmer, L. A. Mound and G. J. du Heume. Edited by C. R. Betts. A4, pp.73, illustrated. C.A.B. International Institute of Entomology, London 1989. Price £10.00 spiral bound.

This is number two in the series, and it is keeping up the standards of the first. In this publication the economically important thrip species are dealt with in sections on their biology and collecting and preserving techniques. The key only takes you as far as genera in most cases. Although not a very popular group of insects, this publication is sure to stimulate some new interest in thrips.

A SECOND BROOD LARGE SKIPPER

by Paul W. Batty (8926)

Last year while rearing large skipper *Ochlodes venata* butterflies on cocksfoot, planted in a greenhouse, I had a single specimen emerge on 5th September. Has anyone had a similar experience with double brooding in this or related species?

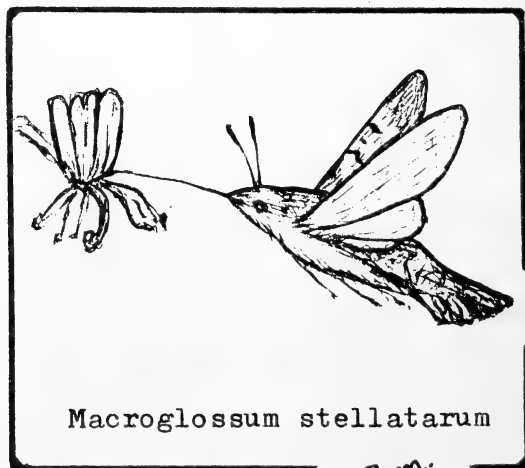
OBSERVATION OF A HUMMING-BIRD HAWKMOTH

by Frank Marples (8226)

Moments after I had cut back my Buddleia bush, and thrown a mass of flowering branches onto my shed roof, a hawkmoth appeared — perhaps attracted by the strong aroma of the disturbed panicles. For a while I puzzled over its identification.

I observed its coloration and general form, its hovering flight, and the manner in which it probed the nectaries of the flowers, and I was forced to conclude that for those few moments my small “back yard” garden had been graced by the presence of *Macroglossum stellatarum*.

This species is usually listed as a summer visitor which migrates regularly from southern Europe, but I do not know how common, or how rare, are the sightings in Britain. This, my first sighting, occurred in Fratton, Portsmouth, during the afternoon of Tuesday, 8th August, 1989.



NOTES ON THE GENUS *BRAHMAEA* (WALKER). THE BRAHMID MOTHS OF THE FAMILY BRAHMAEIDAE.

by Don McNamara (5537)

(1) Distribution

Since receiving a dozen or so ova a few years ago, of *Brahmaea wallichii japonica* (Butler), the Japanese owl moth, and seeing the whiskery larvae grow to alarming sizes, I have been an enthusiast of this genus. The bomb-like pupae and subtly-patterned adult moths added to the attraction and when I heard that there were other, bigger Brahmids “out there” — I was firmly hooked.

This genus is essentially from the old world, inhabiting high forested areas and can be divided into two groups, based on general appearance and geographical distribution, the *Certhia* group and the *Wallichii* group — plus one European oddity.

Without getting too involved in schematic niceties the names referred to here are the current ones, culled from recent literature, which seem to have tidied-up a variety of mistakes and synonyms.

The lone European representative is *Brahmaea (Acanthobrahmaea) europaea* (Hartig), a curious moth found only in one high volcanic depression near Lake Monticchio, Luciana, in southern Italy. This moth could be mistaken for a form or variety of the Japanese owl moth — though it is generally smaller.

Members of the *Certhia* group are generally darker than those of the *Wallichii* group — having the usual ripple patterning for the outer margins (about a third of the wing area) with the inner areas of the hind wings being a dark brown. The forewings have a band of dark brown across the central part — parallel to the outer margin, also with the ripple pattern on either side. The four sub-species referred to here are similar in appearance, rather variations on a theme.

Their larvae have whiskers “fore and aft” and are brownish, developing a waxy sheen in their later instars. They tend to prefer *Fraxinus* (ash), but also take *Ligustrum* (privet) and *Syringa* (lilac). The group is situated in a general west to east direction from Turkey and Syria, through Iran, southern USSR, China, Mongolia, eastern USSR and Korea.

The *Wallichii* group are also variations on a theme, *Brahmaea wallichii wallichii* (Gray) being the type species from Nepal. Again the intricate parallel lines — central dark areas in the hind wings, base colour grey or greenish, but lighter, more patterned forewings than the *Certhia* group, with a feature that unites *Wallichii* members, a cell-like or “pre-eye” type marking in the central, rear edge of the forewings. When at

rest these markings lie either side of the abdomen giving the moth the appearance of an owl's face.

The larvae are similar in appearance to those of the other group — but are greenish. A darker patterning is “superimposed” creating quite a cryptic design and this varies with each sub-species. The preferred foodplants are privet and lilac.

Members of this group are found from the west Himalayas, Pakistan, Nepal, northern India, Burma, Borneo, China, Taiwan, and at the easternmost edge of the group's distribution — Japan.

All the Brahmids produce pupae similar to a British hawkmoth such as *Smerinthus ocellatus* (Eyed hawk) — but about one-third larger, pupating on or just under the surface of the soil.

Sub-species or species within this genus inhabit difficult terrain, often barely accessible, certainly often within politically troubled areas. No doubt as things settle and the urge to “develop” wild areas continues, so will closer investigation of the territories follow and I suspect more Brahmids will be discovered. I suggest that the Chinese hinterland, Indonesia and possibly the Philippines will offer us some new and exciting forms in the near future.

Group Distribution

European

Brahmaea (Acanthobrahmaea) europaea (Hartig) — Italy

Certhia group

Brahmaea (Brahmaea) ledereri (Rogenhofer) — Asia Minor, Turkey, Syria.

Brahmaea (Brahmaea) christophi (Staudinger) — Lenkoran, Caucasus, Iran.

Brahmaea (Brahmaea) porphyria (Chu et Wang) — Northern China, Mongolia.

Brahmaea (Brahmaea) certhia (Fabricius) — Amurland, North and Central China, Korea, Manchuria, USSR.

Wallachii group

Brahmaea wallichii saifulica (Freina et Witt) — West Himalayas, Pakistan.

Brahmaea wallichii wallichii (Gray) — Nepal, Northern India.

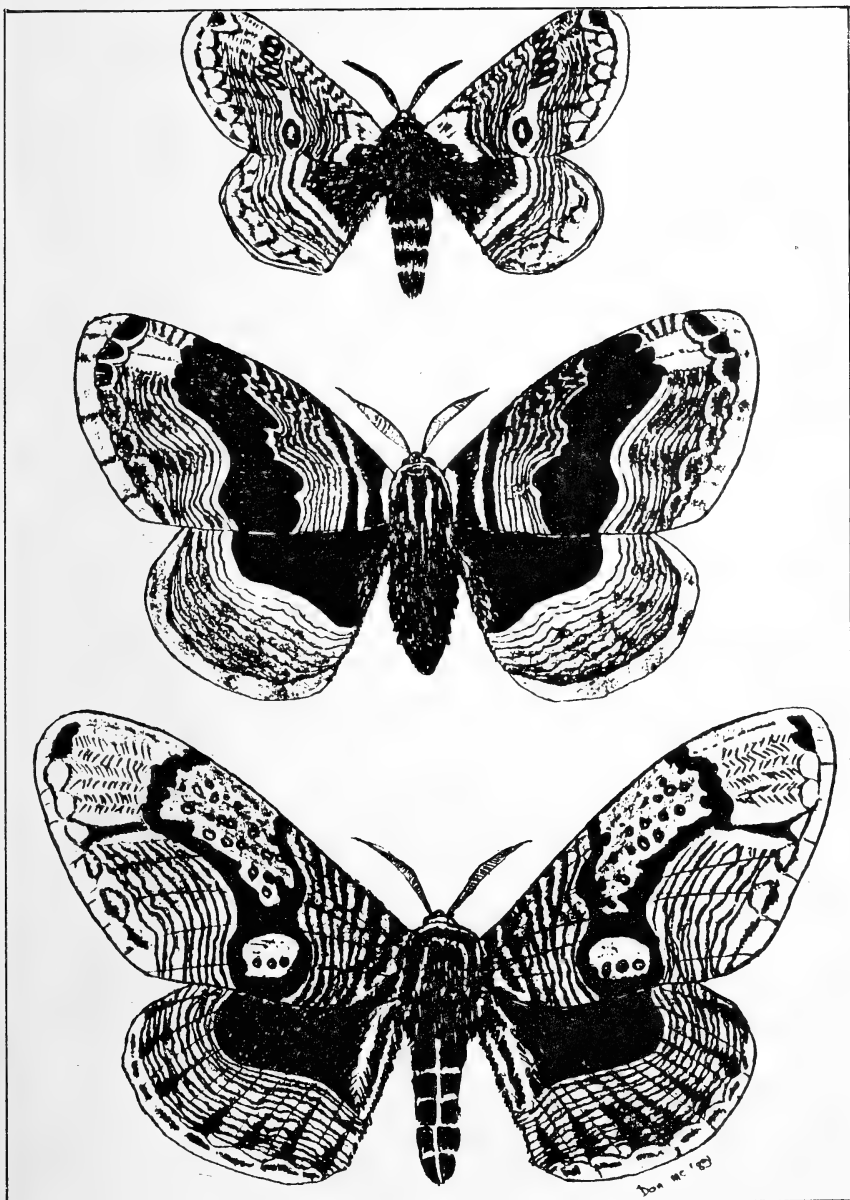
Brahmaea wallichii hearseyi (White) — Sikkim, Burma, China, Borneo.

Brahmaea wallichii insulata (Inoue) — Taiwan.

Brahmaea wallichii japonica (Butler) — Japan.

Further Comments

It is likely that individual sub-species within each group are closely related — for instance *ledereri* and *christophi* are easily paired and I have crossed *japonica* with *insulata*. In each case intermediate forms have been produced.



Brahmaea species:—

Top: *europaea* 6.5 cms across when set.

Middle: *certhia* 9.0 cms across when set.

Bottom: *insulata* 12.5 cms across when set.

Variation within the genus is rare with only lighter or darker individuals occurring from time to time or with a reduction or spreading of the marking.

Insulata, formally pronounced a new sub-species in 1984 (illustrated here), has however produced two startling forms. From 24 ova obtained indirectly from Taiwanese stock, three adult moths appeared which were completely "ginger" all over — one of them pairing with a "normal" type (so the genes are still whizzing around in this stock).

Also, the last pupa to hatch last year (7.v.1989) produced a moth uniformly "charcoal grey". Most odd. In both cases the greeney-grey colour was completely replaced although the typical "*Wallichii*" markings could be seen. (Hopefully these will be shown at a future AES Exhibition.)

The illustrations attempt to capture the character of each group, the sub-species featured are *certhia*, *insulata* and *europaea*.

Acknowledgements

Thanks to AES members who have discussed this with me: Peter Howard, George Beccaloni; to Brian Gardiner for the papers by W. Nässig and to Alan Marson for livestock; also particularly to Dave Goodger of the NHM who allowed me to check data-labels of the Brahmids and to Julie Harvey of the NHM Entomological Library whose help was invaluable.

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THE MICROLEPIDOPTERA OF KENT

I am collecting material for an account of the microlepidoptera of Kent, being a continuation of my *Butterflies and moths of Kent* and should be most grateful if entomologists would kindly send me their records. On publication proper acknowledgement will be given of all help received. — J. M. Chalmers-Hunt, 1 Hardcourts Close, West Wickham, Kent BR4 9LG.

A CRAB LOUSE INFESTATION OF THE EYELID

by John Hay (6878)

The crab louse (*Phthirus pubis*) is most commonly detected attached to shafts of hair in the genital or peri-anal regions of the human body. This distribution results from the most common mode of transmission of the insect, that is sexual contact. However, crab lice have been found in other anatomical locations where there is associated widely-spaced coarse hair (eg beard, chest, armpits, eyebrows).

Rarely crab lice have been detected attached to eyelashes. The organism shown in Figure 1 was one of three adult female crab lice which were discovered attached to the eyelashes of an individual who presented with a very itchy, red and sore left eyelid. The latter features were suggestive of either a sty or blepharitis. Close inspection, however, revealed the presence of the adult crab lice as well as their eggs.

Figure 1 shows that the crab louse is essentially turtle-shaped, being much shorter and broader than the pediculid lice. As can be seen, all of the legs are approximately the same length. However, the second and third pairs are armed with large hinged claws. The tarsus and tibia are fused together; this provides a strong base against which the claws can grip. There is a thumb-like process on the tibia which opposes the claws. Characteristic lappet-like processes, the pleural plates, are evident on the abdomen, which in the female crab louse, terminates in two large posterior lobes, the claspers.

The mature crab louse lives for about three weeks. The female will lay about five fairly large exopterygote eggs per day which become firmly anchored to the hair shaft. The eggs hatch after about eight days incubation and the nymphs mature in about seven days.

When the crab louse is feeding, the labrum becomes everted (Figure 2); the recurved teeth of the labrum attach the head of the insect to the epidermis of the skin. Thin stylets comprising two maxillae, the labium and the hypopharynx, are brought forward through the buccal opening. The labrum has a sharp three-pronged tip which allows piercing of the skin and laceration of the underlying connective tissues. The hypopharynx contains the salivary duct through which salivary secretions are introduced into the wound. The blood of the host is drawn into the louse by the two transversely rolled maxillae which are fused ventrally. While the louse is feeding, which is more or less continuously, the chitinous pharynx acts as a sucking organ, drawing blood along the maxillae.

It is the taking of blood in the vicinity of the base of a single hair shaft that induces the localised irritation associated with crab louse



Fig. 1. *Phthirus pubis*, adult female, ventral aspect. x 100.



Fig. 2. *Phthirus pubis*, head viewed ventrally, showing everted mouthparts. x 450.

infestation. Rarely, the injected saliva gives rise to a characteristic, two to three millimetre, blue-grey discoloration of the skin.

There is no evidence to suggest that the crab louse is involved in the transmission of the pathogenic microbes responsible for exanthemic typhus, trench fever or European relapsing fever; this is the domain of *Pediculus humanus*. However, heavy contamination of an area of skin with louse faeces, along with vigorous scratching to relieve the itch caused by the feeding insect, can cause complications. The presence of faecal material may also lead to a localised eczematous reaction in some individuals.

The infestation of the eyelid described was satisfactorily resolved by gently removing individual crab lice with fine forceps. Eggs were touched with a fine paint brush which had been dipped in 0.5% aqueous malathion (Derbac-M), care being taken to avoid contact with the eye. Application of Brolene eye drops, four or five times per day for five days, relieved the redness and itching of the eyelid. Subsequent investigation revealed that the infestation had originated from contact with a contaminated face cloth.

BOOK REVIEW

The Humble bee — its life-history and how to domesticate it by F. W. L. Sladen. 8vo, pp.273, 5 coloured plates. Published by Logaston Press 1989. Hardback. Recycled paper. £14.95.

In 1912 Frederick Sladen first published this pioneering insight into the lives of the genera *Bombus* and *Psithyrus*. Earlier, in 1892, at the age of 16 years he had printed and published a 40-page leaflet under the same title, having produced it on a stencil copying machine, illustrating and binding the copies himself. This new publication reproduces these two fascinating studies for the modern enthusiast, the earlier leaflet being a facsimile.

The superbly-reproduced colour plates figure all the British species of the genera, showing the three castes. An appendix gives recent synonyms. There is an introductory chapter by Prof. J. B. Free of the Bee Research Unit on the short life of Sladen who died at the age of 45, and there is a bibliography of his publications over a period of 29 years.

For our members, even those with a limited interest in the Hymenoptera, this publication deserves a place in their libraries, making useful and interesting reading and emphasising how much can be achieved by the observations of a dedicated amateur. The promoters and publishers are to be congratulated on making this important work again available to the public at large.

PWC

AN UNUSUAL OCCURRENCE

by Peter W. Cribb (22770)

In July 1987, David Marshall and I collected some nearly full-fed larvae of the Large blue butterfly, *Iolana iolas*, in the pods of *Colutea aborescens* in Central Spain. Several died in transit (it is a mistake to break open the pods) but those that pupated emerged in May 1988 except for one. This did not appear to be dead, being a lucid cream in colour. I put it aside in a small cage and kept it in a cool room throughout the summer and following winter. In May 1989 I was again away in Spain with David and on our return I eventually had a look at the pupa, to find that it had emerged and a female *iolas* lay dead in the bottom of the cage. It was a small specimen but perfect.

While some moths are known to spend two years in the pupal stage on fairly regular occasions, this is my first experience of it occurring in a butterfly. Have any other members knowledge of a similar happening?

THE ROLE OF MOONLIGHT IN THE SIZE OF CATCHES OF *BISTON BETULARIA* IN WEST KIRBY, WIRRAL, 1959-1988

by Cyril A. Clarke (1569), Frieda M. M. Clarke (3512), H. C. Dawkins and Susannah Kahtan.

(Correspondence: 43 Caldly Road, West Kirby, Wirral, Merseyside L48 2HF.)

Introduction

From 1959 to 1988 two of us (CAC and FMCC) sampled *Biston betularia* (Peppered moth) in their garden at West Kirby, Wirral, primarily to assess the proportion of f. *carbonaria* in relation to local atmospheric pollution (see Clarke et al., 1985 and Clarke et al., 1990, in press). The traps used were a 125 watt mv lamp (66cm above the ground) on every night in June and July, complemented by an assembling trap when virgin females were available from bred broods. From 1959 to 1981 the same garden was used, and this backed on to the large Caldly National Trust Common, where birch trees are abundant. In August 1981 CAC and FMCC moved 0.5 km to the west, but their new garden still backed on to the same common and the amount of light from street lamps was similar.

In 1987 it was decided to look retrospectively at the size of nightly catches of this one species in relation to the phases of the moon. This was because over the years there had been considerable difference of opinion about the influence of the moon on catch size, though surveys were not usually confined to one species, and it was thought that the results from *betularia* alone over 30 years would be informative.

Review of the Literature

Uvarov (1931) concluded that the daily activities of insects are influenced by combinations of several meteorological factors and that attempts to explain the daily cycle by a single one have little chance of success. However, as regards moths in general he thought that light has an inhibiting influence and that light trap catches at full moon are greatly reduced.

Williams (1936) reported high catches of Noctuidae when there was no moon and a minimum near full moon. He stated that there is maximum activity at midnight and the ratio of the catch between cloudy: clear nights is 1.75:1.

Williams (1940) also reported his results on all insects, and found the same effect as in the Noctuidae, but less extreme; there was no statistical difference between the results for Lepidoptera only and those for total insects. He concluded that the inhibitory influence of the moon was firmly established, and that no-moon full-cloud nights are the best for big catches. He admitted, however, that different groups are affected

differently and attributed this to a specific physiological effect on the activity of insects and not merely to a reduction in the efficiency of the light trap when the moon is shining.

In 1951 Williams and Singh comment on suction traps, where no light or pheromone stimulus is involved, and which are usually only employed to sample small agricultural pests. Originally they reported that catches are considerably higher near the period of new moon, but they later reversed this view, stating that their 1950 data were wrong and that there was no regular lunar cycle in the number of insects caught (Williams, Singh and Ziady, 1956).

E.B. Ford (1955) speculated that if moths are attracted by moonlight they will fly higher on moonlit nights. He and Alistair Hardy attempted to verify this by several balloon ascents on dark and bright nights but with inconclusive results — though they did see three moths flying at 1,000 feet on one moonlit night.

Cloudesley-Thompson (1961) considered that the factors involved in diurnal rhythms are so numerous and diverse even within individual species that few generalisations can be made. Each species must be considered on its own account and any conclusions reached will not necessarily apply even to closely related forms.

Bowden and Church (1973), working in Africa, state that many factors influence catches on an individual night and moonlight is a major one only for certain species of insect, for example the Pyralid moth *Marasmia trapezalis*, which is ten times more common at new than at full moon. However, their general findings, and those of Bowden and Morris (1975) when reporting on all taxa of insects in Uganda and Ghana, showed some increase in numbers in moonlit periods and in many cases the increase was substantial.

Baker and Sadovy (1978) have an explanation for why males of most species predominate in light trap catches, as is the case with *betularia*. They think the moths are in a particular physiological state where they can make use of moon or star orientation, for example when beginning or ending migration. However, even when the sky is completely overcast moths still seem able to orientate themselves and Baker (1980) suggests that they can also steer by the earth's magnetic field.

Bowden (1982) in discussing the interpretation of light trap data concludes that "moonlight has an effect on both flight activity and behaviour, producing a result exactly the opposite of that looked for by Williams et al. and virtually every other worker on the effect of moonlight on insects. The apparent dearth of insects on moonlit nights is an illusion created by an artefact".

Bowden (1984) has pointed out the difference in nocturnal illumination by the moon at the equinoxes and at varying latitudes, and that it

may be necessary to use different light sources at different times of year to maintain a consistent trap sample.

The literature therefore has only one common feature and that is uncertainty.

TABLE 1. Catches of *Biston betularia* between 1959 and 1988.

Mv only		Both Traps used		
<i>Year</i>	<i>Mv moth catch</i>	<i>Year</i>	<i>Mv moth catch</i>	<i>Assembly moth catch</i>
1959	283	1961	346	85
1960	225	1962	553	286
1967	394	1963	473	521
1972	276	1964	635	347
1988	179	1965	299	179
		1966	212	87
		1968	403	74
		1969	371	239
		1970	540	848
		1971	139	68
		1973	217	101
		1974	188	125
		1975	243	26
		1976	338	108
		1977	319	171
		1978	335	20
		1979	87	544
		1980	194	443
		1981	106	301
		1982	121	1
		1983	557	132
		1984	316	36
		1985	763	97
		1986	300	505
		1987	215	229

Total mv moths
in the 5 years
= 1357, average
271.4 moths per
year.

Total mv moths
in the 25 years
= 8270, average
330.8 moths per
year.

Total "assembled"
moths in the 25 years
= 5573, average
222.92 moths per
year.

The total *betularia* caught in the 30 years was 15,200. All were males except for 83 females (0.55%).

Only the 9627 moths caught in the mv trap were used for the moon analysis.

Material and methods

Table one shows the number of *betularia* caught between 1959 and 1988 and it will be seen that in 25 years both mv and assembly traps were operating (about 20 yards apart) whereas in five years only the mv was used, this being because bred virgin females were not always available.

Since the effect of moonlight was what we were attempting to assess we have only used the mv data, though it is probable that these were boosted often by pheromone activity, or *vice versa*. This is probably of little importance in biasing our results since the number of virgin females in the core of the trap was greatest at the period when the natural density of the moth was at its maximum in the wild, judged by our catch numbers. We never attempted either to force or to delay the emergence of our bred broods.

Another safeguard is that the figures for the five years when there was no assembly trap, when analysed separately, are shown to give similar results to the main findings.

The dates for the full and new moons were obtained from standard sources and one of us (SK) was initially responsible for correlating the catch numbers with the lunar phases.

In our records there was only sporadic reference made to the type of weather, but we think it reasonable to suppose that over 30 years in a climate such as ours, the weather conditions would be random for any particular date or moon phase. We discounted the possibility that the moon might influence the weather (Currie, 1988) because the cycles of measurable changes in atmospheric pressure as a result of lunar influences are so long.

Statistical analysis (HCD)

All the lunar data were used, whether the cycles were complete, that is where there were 14 days either side of full moons in June and July, or incomplete. The study then yielded 27 complete lunar cycles each running from full moon minus 14 to full moon plus 14 nights, plus another 24 full moons flanked by lesser and usually asymmetrical periods.

A plot of nightly catches by calendar date, or by full moon relative date (i.e. from minus 14 to plus 14 around full) gave a picture of grossly scattered points with no convincing pattern. Single night's catches varied from 0 to 54 moths, with consecutive nights producing, for instance, sequences such as 23, 8, 15, 2, 22, 7 . . . the series as a whole being liberally sprinkled with zeros, but this is hardly surprising in view of the variable weather conditions already mentioned.

To smooth the nightly counts we merged sets of five consecutive nights

into pentads, five in each moon cycle, full moon itself being straddled by the central pentad.

The pentads formed the following five sub-periods of each moon cycle, labelled from F - 2 to F + 2:

F - 2:full	- 12 to full	- 8 nights, with 49 pentads observed.	
F - 1:	- 7	- 3	52
F - 0:	- 2	+ 2	51 (the peri-full sub-period)
F + 1:	+ 3	+ 7	52
F + 2:	+ 8	+ 12	49

Total pentads in the study = 253

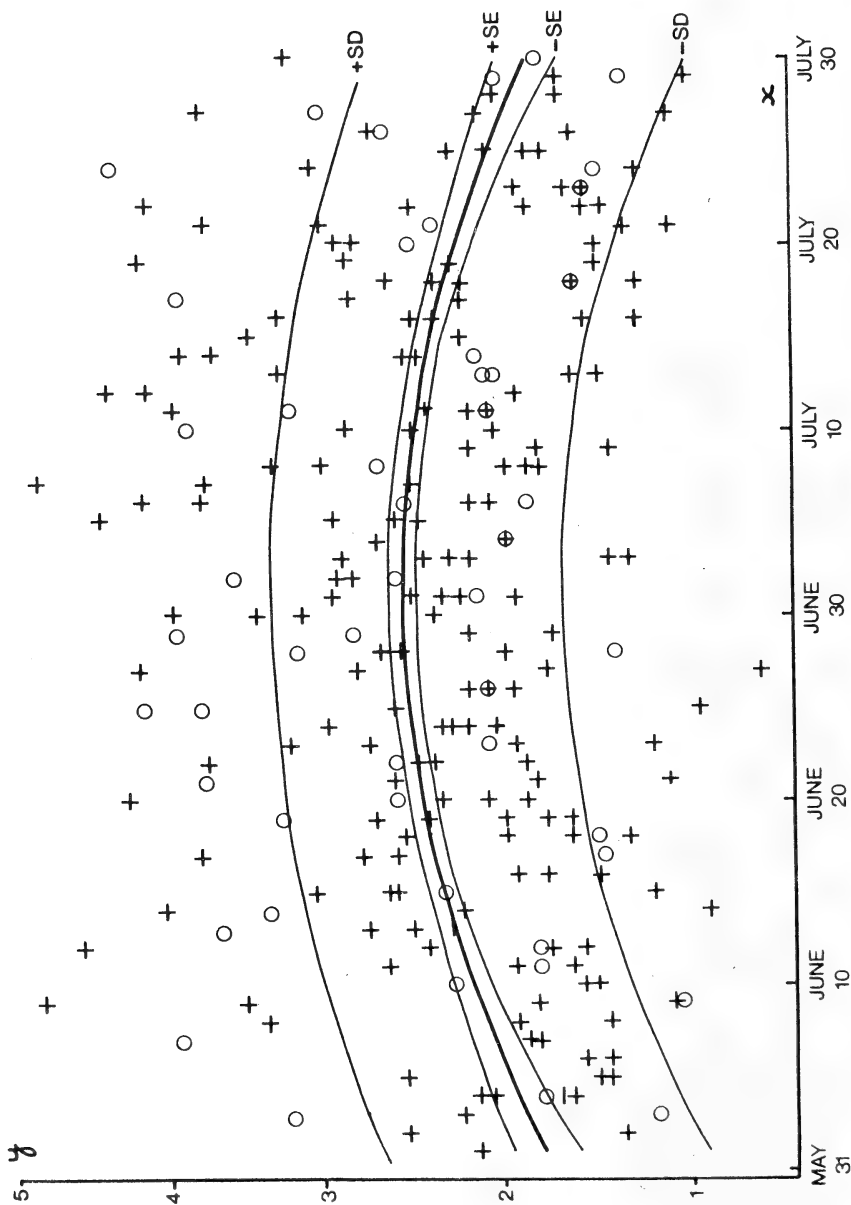
The mean catch and mean date of each pentad were then used in regression analysis.

It should be noted that the data for this analysis have been reduced to the 25 nights full - 12 to full + 12 inclusive, losing the four observations outside those limits from all of the 27 complete moon cycles, and a lesser number from the incomplete ones (but see below). Three nonad or nine triad groups would have provided wider cover, 27 instead of 25 nights per moon cycle, but neither would have been so efficient in analysis.

The 253 pentads from the whole 30 year study were then plotted over the June-July calendar dates, still giving an apparently hopeless scatter with a markedly vertical (y-axis) skew, not shown here, except after transformation in Fig. 1. This is to be expected from insect counts varying, even as five-night means, from zero to 23 with a mean of 5.9 and a coefficient of variation of 79%. The appropriate square-root transforms almost eliminated the skewness, and reduced the c.v. % to 36% around a transformed mean of 2.4, as illustrated in Fig. 1.

Several models were fitted to detect and account for any general change in catch over the two-month season. The most successful was a simple quadratic regression, plotted in Fig. 1, along with the standard deviation and standard error lines from it. It is clear that the regression quantifies the transformed 30-year mean catch reasonably well (see SD lines), but is of little value for single pentad means (see SD lines).

The fitted line and confidence limits of Fig.1 provide an unbiased test of lunar effect, since the vertical distribution of full moon pentads (F-0, shown as 0) over any period along the calendar abscissa may now be compared with that of the wax and wane pentads (all shown as +). Visually, it is difficult to detect much difference between their scatters, and separate quadratic lines for each lunar sub-period were nowhere significant nor statistically separable. The data were therefore grouped further into three zones, a lower one below the regression line, a central one from that line up to the upper SD line, and an upper one above the



upper SD line. We then have a contingency table which may be tested for heterogeneity or for non-Gaussian behaviour (Table 2).

TABLE 2
Numbers of pentad means in:

Graph zone:	Upper	Middle	Lower	Totals	Moon phase
F-2	9	17	23	49	waxing
F-1	13	15	24	52	waxing
F-0	15	15	21	51	full
F+1	7	18	27	52	waning
F+2	7	20	22	49	waning
Totals:	51	85	117	253	

Zones: Upper = above or equal the upper SD line Fig.1

Middle = below upper SD and above or equal to the regression line.

Lower = Below the regression line.

From this table, the full moon and pre-full moon pentads (F-0 and F-1) clearly showed higher catches than did the others (the same outcome appears as percentages in Fig. 2). They do not however differ significantly from the overall proportions of 51 - 85 - 117, the 8 df chi-sqd reaching only 6.9 ($P > .05$). Nor does comparing full moon-only (F-0) with the rest, or full moon with pre-full (F-0 + F-1) with the rest, provide significant support for a "real" effect, unless we accept $0.1 > P > 0.05$. (Chi-sqd = 5.5 for the latter 2-df test).

The ratios of the numbers in the upper zone to the totals within each pentad may also be treated as a 5-point response curve using orthogonal polynomials. Catches at and beside full moon show a peak "upper" column in Table 2. If this peak is significant then the quadratic component should show it; the latter, however, accounted for a chi-squared component of only 1.8 (1 d.f.) out of a total of 5.4 (with 4 d.f.). Each row was also tested for a greater tendency to produce high values than low by comparing with those expected if the distribution was Gaussian. The F-0 row gives a significant result $\chi^2 = 6.8$, 2 d.f., $P > 0.05$, while the other comparisons are non-significant.

Fig. 1. y: Scatter of transformed (sq.rt) five-night means, plotted on calendar date (\times axis), for period 1959 to 1988 inclusive. Symbol 0 for peri-full pentads (full -2 to full +2 nights), with + for all wax and wane pentads. Curves show upper and lower standard deviations and standard errors from the quadratic regression $y = 0.0967 \times - 0.00754 \times - 0.54$; $R^2 = 0.05$, variance-ratio 6.6, $0.01 > P > 0.001$. t-ratios for both coefficients had $P > 0.001$.

It will be noted that there are sometimes deficiencies in the 0s and +s in the figure, compared with the numbers in Table 2. This is because some of the points in the figure are duplicated, but this cannot be shown in the drawing. The figures in Table 2 are correct.

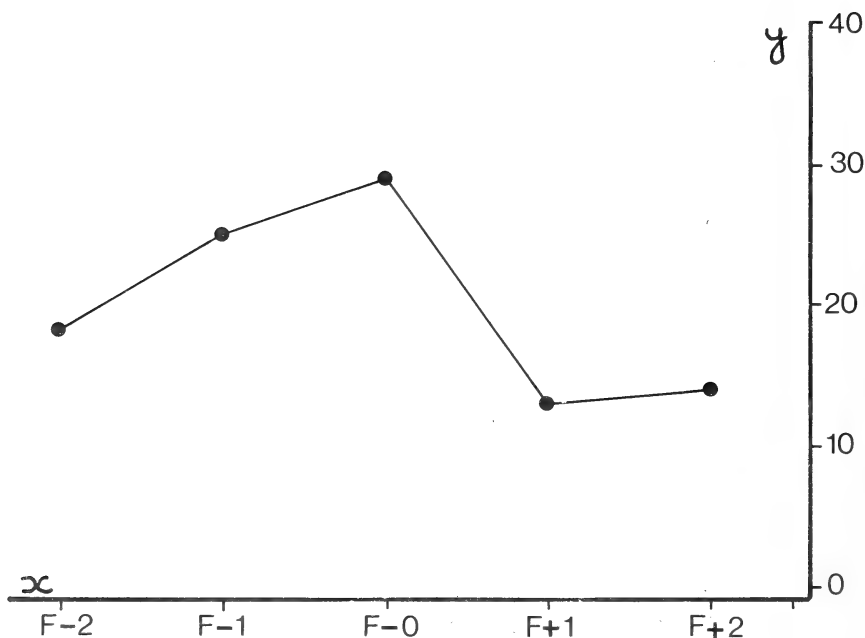


Fig. 2. y: Percentage of catches (pentad means) falling above the upper standard deviation line of Fig. 1 classified by moon-period (x -axis). e.g. of the peri-full moon catches (F-0), 29% were above +SD compared with 18% of the F-2 catches. Chi-squared analyses given in text.

Before coming to our conclusions there is the caveat mentioned earlier relating to the fact that for symmetry of analysis we discarded part of the peri-new moon data. However, because many lepidopterists think more moths come to light on moonless nights this point should be looked at, so it was rectified by analysing separately catches from the peri-new moon pentad with those of the full moon, omitting the wax and wane periods. The outcome after restoration from a square root transformation was as follows:—

Back-transformed means	Diff.	Sig. 2-tail	1 tail
Peri-new (n = 62) 5.1			
Peri-full (n = 51) 6.6	1.5	0.05 > P > 0.025	P > 0.025
t-ratio 2.02 at d.f. 111			

Thus the mean nightly catch of the peri-full pentads exceeded those of the peri-new by 1.5 moths, a difference which was conventionally significant but only just. On the other hand the probability that new moon mean catch might exceed that of the full moon was less than P.025, giving no support at all to the lepidopterists' hypothesis.

Conclusions

It is apparent from a survey of the literature that entomologists tend to be divided into those who view the full moon as a stimulating factor with higher catches around it and those, the majority, chiefly collectors of Lepidoptera, who are of the opposite opinion, so much so that they will avoid arranging field meetings at or near the full moon. It seems likely such polarisation is not justified and that individual species should be studied separately, and this is what we have done over 30 years with *Biston betularia*, and the West Kirby findings definitely support the view that the moon has little or no effect on this moth. Agreed there are occasional hints of increased catches around full moon (though not of the reverse) but some of the pentads are incomplete and the assembly trap may, on occasion, bias the mv catches. So we feel the overall conclusion from the survey should be that moonlight is irrelevant to the catches of *betularia* — and why not, if Baker (1980) is right?

There is an interesting parallel in the last century, when "sugaring" for moths was a favourite pastime and the entomological journals were full of contradictory meteorological statements. South (1907) sums it up well: "Just what meteorological or other conditions are most conducive to a successful sugaring expedition I have never been able to ascertain. Often blanks have been drawn when the weather has seemingly been the most favourable and quite as frequently good bags have been made when exactly the reverse was thought to be more likely". Ignorance therefore as to the habits of moths is no new thing.

It is customary from negative findings to conclude "more work needs to be done", but we feel that our 30 year survey is reasonably conclusive for *Biston betularia*.

Acknowledgements

We are much indebted to Professor Bruce Grant, of Williamsburg, USA, for suggesting this project when he was on a visit to West Kirby.

We are most grateful to Dr Laurence Cook for frequent advice about the contents of this paper and to Mr Geoffrey Amery, Sir Bernard Lovell, FRS, Dr John Bowden, Mr L. V. Morrison and Mrs V. L. Doodson for clarifying for us specific problems about the light of the moon. We are also grateful to the late Professor E. B. Ford, FRS for helpful discussions, and to Mrs Barbara Dawkins for the statistical

programmes. We are indebted to Mrs Jen Steel for drawing Figures 1 and 2; to Miss Denise O'Leary for typing the paper and to the assistants at West Kirby who have manned the traps most faithfully for many years. One of us (CAC) also gratefully acknowledges support from the Nuffield Foundation.

Summary

The relationship between moonlight and the number of moths caught in traps has been the subject of much discussion and disagreement for many years. However, the general view of lepidopterists in this country is that moonless nights are the most productive.

Between 1959 and 1988 we have sampled by mv light in the same locality on Wirral, each night in June and July, one species of moth, *Biston betularia*, and a total of 9,627 have been caught. These have been looked at retrospectively in relation to the phases of the moon but no convincing association with catch size has been found. There are occasional hints of higher numbers at full moon but the statistical significance is doubtful and there is no support for moonless nights being advantageous. We have assumed that weather conditions on any particular date will have evened out over 30 years.

We think our findings strongly suggest that lunar factors are irrelevant to the catch size of *betularia*.

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BUTTERFLIES AT CHOBHAM IN 1989

by Tony Jackson (8987)

Our farm is on the edge of Chobham Common and the M3 dissects two fields. There is a raised embankment which is now, after some 18 or so years, a splendid insect preserve. The banks are covered with a profusion of wild flowers, shrubs and gorse. Species regularly noted are Essex skippers (*Thymelicus lineola*), Small (*Thymelicus sylvestris*) and Large skippers (*Ochlodes venata*), Ringlets (*Aphantopus hyperantus*), Meadow browns (*Maniola jurtina*), Small heaths (*Coenonympha pamphilus*) and Gatekeepers (*Pyronia tithonus*). Last year, in July, I saw a freshly emerged White admiral (*Ladoga camilla*) on brambles, the first I have seen in this area.

This year Holly blues (*Celastrina argiolus*) have been plentiful in my garden and as I write (July 1st) a second brood has just emerged. Silver-studded blues (*Plebejus argus*) are also in good numbers on the heathland. The garden also usually produces a good crop of Purple hairstreaks (*Quercusia quercus*). Having gardened specifically for butterflies for the past decade I can confirm that numbers of a wide range of species have definitely increased.

A week ago good numbers of Marbled whites (*Melanargia galathea*) were flying on the north downs above Dorking and I also spotted two Dark green fritillaries (*Argynnis aglaja*). However, Brimstones (*Gonepteryx rhamni*) and Orange tips (*Anthocharis cardamines*) were in very short supply this spring and so far Tortoiseshells (*Aglais urticae*) have been scarce.

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 Tephritidae and Agromyzidae
- (c) Lepidoptera, particularly Microlepidoptera
- (d) General entomology

in the above order of preference having regard to the suitability of candidates and the plan of work proposed.

Awards may be made to assist travelling and other expenses necessary to fieldwork, for the study of collections, for attendance at conferences, or, exceptionally, for the costs of publication of finished work. In total they are unlikely to exceed £600 in 1990/91.

Applicants should send a statement, if possible in sextuplet, of their qualifications, of their plan of work, and of the precise objects and amount for which an award is sought, to Dr M. J. Scoble, Department of Entomology, The Natural History Museum, Cromwell Road, London SW7 5BD, as soon as possible and not later than 30th September 1990.

NOCTURNAL PAINTED LADIES

by A. R. D. Whitlock (9077)

Reading the article on the Nocturnal Red admiral (*Vanessa atalanta*) in the last edition by Michael O'Sullivan, has prompted me into recollecting my memories when on board HMS *Illustrious* in the Mediterranean in 1988. We were a few miles off the coast of Majorca, and I was on deck on watch about two in the morning and all the upper deck lighting was on, which I thought had attracted some rather large moths, but on closer inspection they turned out to be Painted ladies (*Cynthia cardui*), many of them flying madly around the lights, and hitting their heads against the lights themselves. They became so numerous they even found their way into the ship. The behaviour around the lights lasted right up to sunrise and then many of them would fly down to the deck and soak up the saltwater that was lying around the deck in small puddles.

I managed to rescue some from the unsuspecting gazes of matelots going about their duties, as sailors all seem to stamp on things they don't understand. When we arrived in Majorca I was in a Butterfly Paradise — but that's another story.

WARNING — WEIL'S DISEASE

by *David Archer*

Waterplant botanists could find themselves in a situation in which they might contract Weil's disease which can be fatal. However, the good news is that the chance of catching the disease is low and can be made lower still by taking a few simple preventative measures.

Should you be unlucky enough to contract Weil's disease you must obtain diagnosis and treatment quickly. If this is done the outlook can be good.

It is unfortunate that the symptoms of Weil's disease can be confused with those of influenza. Here lies the problem. Patients with influenza-like symptoms may not go to a doctor and even if they do, the medical practitioner may have no good reason to suspect a case of the fairly rare Weil's disease. The doctor would probably treat the patient as a case of influenza caused by a virus. The outlook for the patient could then be poor, possibly leading to kidney and/or liver failure and even death.

Weil's disease is a bacterial infection caused by *leptospirae* and is notifiable. Penicillin and other antibiotics can effectively combat the bacterial infection if administered soon enough. In fact the Director of the Leptospirosis Reference Unit is on record as having said that "there is no need for anyone to die from Weil's disease in Great Britain".

The causative bacteria reproduce in rats and leave this animal in its urine. After leaving the rat the bacteria can survive in fresh water or damp conditions, such as wet river banks, for about 45 days. Through contact with rats, voles carry the bacteria but to a lesser extent than the rat.

Taking the following precautions could save your life:

- (1) Always cover cuts and abrasions with waterproof plaster. Wear waders/wellingtons or at least footwear when in the water to prevent cuts from hidden objects.
- (2) Try to prevent water coming into contact with thin mucous membranes such as the eyes.
- (3) Take particular care in stagnant and slow moving water e.g. canals, lakes and lowland streams. (Cases of Weil's disease have been associated with the rivers Lea, Chelmer, Stort and Taff.)
- (4) Think twice about botanising after periods of high water or flooding. During these times the rat runs are flushed out and a greater number of bacteria are present in the water.
- (5) Before entering the water or handling waterplants look for signs of rat and water vole activity — especially holes in the waterway bank. Operate upstream of these if it is possible to do so.

(6) Wash hands before handling food and wash all body areas that have been in contact with the water.

AND . . . should you suffer from any or all of the following symptoms, particularly from 3 - 19 days after water botanising, *see your doctor immediately*.

- (1) Above normal temperature and/or chill feeling.
- (2) Pains in joints and muscles — calf muscle pains are often particularly noticeable.
- (3) A feeling of having an influenza-like illness.

Tell your doctor that you have been in contact with river/stagnant water and mention Weil's disease. (Weil's disease tends to be associated with sewage workers. A doctor may not link your symptoms with Weil's disease if your usual occupation is office bound!)

Weil's disease can be confirmed by an ELISA blood test. This should be carried out urgently by a local laboratory. The ELISA test takes about two to three hours to complete and so your medical practitioner can have the results fairly quickly. If the ELISA test is not available locally, the sample should be sent direct to The Leptospirosis Reference Unit, Public Health Laboratory, County Hospital, Hereford HR1 2ER. If the result is positive it will be available to your doctor in about 24 hours. Through the normal laboratory system blood tests could take two to three weeks longer, and serious illness and death might occur because of the time lag and subsequent delay in treatment.

Immunisation against Weil's disease is not possible at the present time.

Finally, do not let Weil's disease put you off water botanising — the chances of contracting the disease are not very great. The rat population is said to be on the increase due in part to the amount of waste food left around. Please encourage everyone to dispose of waste food properly.

Grateful thanks are due to Dr Chris Preston for his helpful comments.

(The above article by David Archer is reprinted from Newsletter No. 52 of the Botanical Society of the British Isles and I should like to thank Gwynn Ellis, their editor, for permission to do so. We have already had one warning about the dangers in collecting beetles (*Bulletin* 48: 100) and thanks are due to member L. S. Whicher (1345) for bringing this item to our attention.— Editor.)



THE HISTORY OF THE LARGE COPPER INTRODUCTIONS TO IRELAND

by Tim A. Lavery (8677)

Much intrigue and speculation has surrounded the history of this butterfly's introduction to Ireland. Ford (Ford, 1945) in his classic work on Butterflies, knew little of the history; Duffey (Duffey, 1968) attempted to give a full account of both the English and Irish introductions, but was in many instances inaccurate, and apparently was not aware of the entire facts, and although the site of the introductions in Ireland had been visited a number of times by many eminent entomologists over the years, a complete history has not been given.

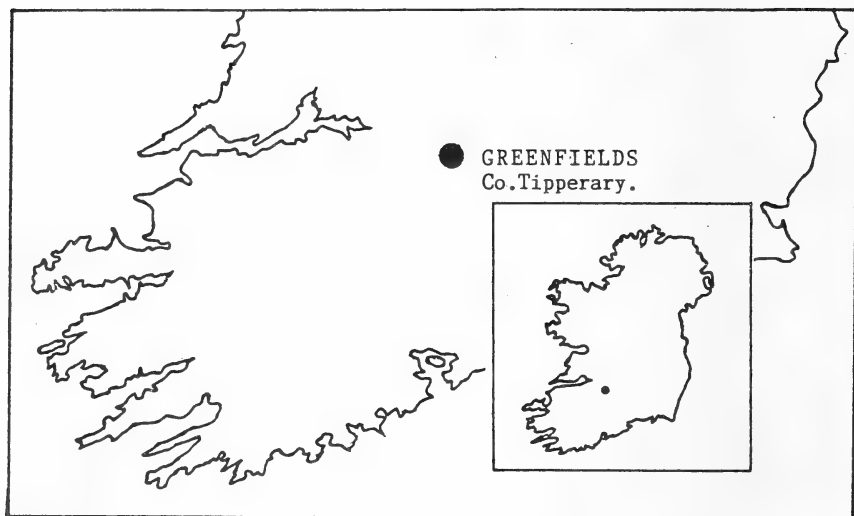
Being presently involved in the collation of Irish Lepidoptera records, I have delved into both literature and field research, in an attempt, presented here, to give an up-to-date comprehensive and accurate account of the very interesting occurrences which resulted in the establishment of both European sub-species of the Large copper (*Lycaena dispar*) in Ireland soon after the turn of the century, and the subsequent survival of this colony well into the mid-1950s.

By the end of the 19th century, the existence of the Large copper (*L. dispar dispar*) in the fens of England was a mere memory, having gradually become extinct throughout its range sometime around 1850. The drainage of great expanses of the fens deprived this beautiful butterfly of its natural habitat: open watery space, bordered by various wetland plants including *Cladium mariscus* (Fenman's or Saw Sedge), and flowers such as *Peucedanum palustre* (Milk Parsley), and *Lythrum salicaria* (Purple loosestrife) on which the emergent adults feed and the ever-important *Rumex hydrolapathum* (Great water dock), the butterfly's larval foodplant.

The loss of this insect caused great concern among the entomological fraternity, many of whom were well aware of the various and constantly increasing threats to the native fauna, mainly due to habitat loss. A Committee was formed by the Entomological Society of London for the "Protection of British Butterflies" with these problems in mind, and also with an aspiration towards the introduction of the similar, though less majestic, continental sub-species *L. dispar rutilus*.

The person responsible for the introduction was a Captain Edward Bagwell-Purefoy who, in making ready the actual establishment of a colony in England, decided to first build-up a sizeable population of the butterfly at his brother's estate home of Greenfields House, near Cappawhite, Co. Tipperary (Grid ref. R84). This colony would then provide the basis for the introduction to the English fens.

In 1913, a ten-acre snipe-bog was got ready. The area was surrounded by a mature plantation of trees, making it a huge "water garden". Not thinking to check up on the Irish distribution of the Great water dock, a large number of plants were brought over from England and transplanted into the newly created "fen"; a number were left in pots sunk half way into the water. Larvae of *rutilus* arrived from a Herr Rangnow from a locality near Berlin, but only about eight adults resulted, so it was decided to go to Berlin and bring a more substantial number of larvae home. Purefoy returned sometime after May 1914 with c.700 larvae (Haynes, 1958). These were kept on plants covered by muslin and a high number survived, and some 400 adults were released into the Greenfields Fen.



The gardener at Greenfields at this time was a J. Schofield, who served as warden to the colony. As the adults began to breed, eggs were constantly searched for on the docks, which were then marked with canes, and larval feeding soon became apparent. The slug-like larvae tend to hibernate in the leaf litter on the bog floor near the base of the dock plants. These had to be collected and kept in muslin-covered pots of withered dock leaves, to protect them from any predation by birds, and parasites. The following year, adult emergence was high and a thriving colony was in existence.

By 1926, it was decided to attempt to introduce the Irish *rutilus* to a Norfolk marsh. Over 500 butterflies were released, but, unfortunately, it never got firmly established, failing a few years later (Ford, 1945).

Around this time, and I suspect, as a result of removing a great quantity of larvae from the Irish colony for the failed Norfolk introduction, the Greenfields' *rutilus* was on the edge of extinction, and in a couple of years had almost totally died out. B. P. Beirne (1942) and E. B. Ford (1945) both state that the colony of *rutilus* was still flourishing in 1928, though it is likely that they may not have realised that it had been in trouble some years earlier, and that the Friesland large copper, *L. dispar batavus* had been introduced to the estate in 1926, and thrived beyond all expectations.

Sometime in 1926, E. B. Purefoy sent his trusted gardener J. Schofield to Holland, to search for and return with the recently discovered *batavus*, which is much closer in appearance to the old *L. dispar dispar*. Without a word of Dutch, Schofield searched countless acres of the Friesland Marshes for the butterfly's eggs, walking all day long in chin-high sedge and trudging through the difficult marshy terrain.

In all he found over 100 ova which he pinned in boxes lined with dampened cork. On arrival back at Greenfields these little patches of ova on 1½ inch cut squares of Water dock leaf were pinned onto living plants. In a few years, hundreds of Large coppers were flying. With the demise of the Norfolk colony, an area at Wood Walton Fen in Huntingdonshire was prepared, and at the end of 1926, ova and larvae were sent to England from Greenfields. Purefoy, who lived at Maidstone in Kent, kept some in his garden caged under muslin, and sent the rest to Wood Walton where it thrived and is still found today. Tragedy struck the Irish *batavus*, when, after the death of Purefoy's brother William in March 1929, his estate at Greenfields came into the possession of the Irish Land Commission, and within a few more years the estate of 600 acres was divided up into smaller farming allotments. The Large coppers survived until about 1937/38 when extinction again caught up with this butterfly.

Sometime in 1943/44, E. B. Purefoy contacted J. Schofield, who now owned his own farm near the old estate at Greenfields, suggesting he would send over a few *batavus* to Tipperary, in the event of the English colony dying out due to neglect during the War. Soon after, the coppers were again flying at Greenfields, though nothing quite as spectacular as the old colony. The adults were released in the old fen where the Dock was still growing but the woodland and scrub, in the absence of proper management, had closed the area in considerably. The number increased, but needed much attention as the larvae still had to be found and housed in pots over the winter. Some of the butterflies were even released outside the former estate!

In 1949 Captain W. Wright, discoverer of the Burren green moth (*Calamia tridens occidentalis*), visited Greenfields and was given a

specimen and the pupa case from which it emerged. The colony was now slowly decreasing. In 1951, E. Classey, E. Robinson and B. Goater arrived but were too late to see the copper that year. By 1953/4, when Dr Denis Quirke searched the area, no *batavus* were found. Time to manage the coppers was difficult to find since Schofield and his son, Liam, had a farm to run; soon after Schofield died and in 1954, the Large copper, *L. dispar batavus* had, once more, become extinct.

Before its eventual demise, various series of the butterfly had been sent to museums all over England, particularly the British Museum of Natural History, London, and the Rothschild Collection, Tring. There is also a short series of the original *rutilus* in the National Museum of Ireland, Dublin.

Lycaena dispar batavus owed its existence to the foresight and the excellent work done by E. B. Purefoy and also to J. Schofield, a gardener in Greenfields, flung in at the deep end, jumping from Holland to Greenfields and over to Huntingdonshire, with no experience or training in entomology!

Acknowledgements

I am grateful to Raymond F. Haynes, for drawing my attention to various literature references, including his own excellent article. Also to Tipperary County Library and to Mr Eamonn McGrath who helped put me on the right track to Greenfields.

Much of the information in this account is derived from personal communication between Liam Schofield and myself. Mr Schofield has been of tremendous assistance, particularly in recalling his father's work.

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BURREN LEPIDOPTERA

by Michael J. O'Sullivan (7592)

The Burren of North-west County Clare is the largest area of limestone pavements in these islands, occupying an area of some fifteen miles from north to south and twenty-five miles in an east to west direction. It extends right up to the Atlantic seafloor and, inland at Mullaghmore, reaches an altitude of 627 feet. Out on the pavements, vegetation is sparse and stunted, being fundamentally confined to the grykes, crevices of varying depths between the blocks of paving, known as clints. However, in those areas of more scattered limestone, the flora tends to be more vigorous, lepidoptera flourishing in the conditions provided by this unique habitat.

During the period 1984 to 1988, I visited the Burren on a number of occasions, this article then being intended to serve as a brief summary of the diversity of species which were encountered there.

On 16th June 1984, John Lavery and I planned a weekend trip to coincide with the glorious weather conditions which were prevalent about that time. We set up our camp in the majestic setting quite close to Newtown Castle, in the shadow of an old ivy-covered lime-kiln. All about us, bramble (*Rubus fruticosus*), hawthorn (*Crataegus sp*) and blackthorn (*Prunus spinosa*) grew in profusion, without ever reaching any appreciable dimensions. In the more open terrain, many botanical delights, for which the Burren is quite rightly noted, abounded. Prominent amongst these were mountain avens (*Dryas octopetala*), bloody cranesbill (*Geranium sanguineum*), and the mystic maidenhair fern (*Adiantum capillus veneris*). Less obvious, but no less fascinating, were the myriads of Orchids which one encountered on one's travels through this mythical landscape.

Chores having been completed, at the back of the lime-kiln we flushed up our first ever *Cupido minimus*, and were subsequently amazed to find this species to be particularly abundant in sheltered corners of the small damp stone-walled fields hereabouts. Large numbers of *Leptidea sinapis juvernica* abounded with their weak flight, gently flitting amongst the bramble thickets. *Coenonympha pamphilus* and *Polyommatus icarus mariscolore* were well represented numerically. Some striking examples of *P. icarus* were secured. Along a narrow laneway, we were surprised to record a single specimen of *Boloria euphrosyne*, which we could not secure, despite our best efforts. Thus, in a short period of time, I had secured specimens of two species which I had never previously taken in *L. sinapis* and *C. minimus* and recorded a third in *B. euphrosyne*!

Also taken were the season's first specimens of *Maniola jurtina iernes* together with *Parage aegeria* and the aptly-named moth species *Odesia*



Panoramic view of Mullaghmore. (Photographed by James Lynch.)

atrata. During our slow journey through the undergrowth, we had the opportunity to sample some of the wild strawberries (*Fragaria vesca*) which grew in abundance. John took, but subsequently lost, a specimen of *Setina irrorella*, a localised Burren species. However, this was more than compensated for by the discovery of a large web of larvae of *Eriogaster lanestris*, approaching final instar. Indeed, many less conspicuous webs were in evidence on Hawthorn bushes throughout the entire area. These larvae were subsequently brought through to the adult stage without producing a solitary parasite — surely an unusual feature where gregarious larvae are concerned. In the cool of the early evening, we ventured up the hillsides overlooking our campsite and noted specimens of *P. icarus* roosting on grasses and other accommodating plants.

Just before we retired to our sleeping bags for the night, our paraffin lamp was visited by a specimen of *Deilephila porcellus* and shortly afterwards, our attention was captured by the droning flight of a solitary *Melolontha melolontha* (Cockchafer).

June 17th dawned gloriously, and we were soon up and active. *C. minimus* was again prominent from early morning with countless scores of *L. sinapis* carelessly drifting along, virtually at ground level. As we ambled along, John took a freshly emerged *Argynnis aglaja* which we found basking in the sunshine on the narrow green pathway we were following. More or less similar species were encountered as on the previous day, but we stumbled into a locality where myriads of *Zygaena purpuralis* (Transparent burnet) were in flight. This, again, is a local Burren species.

A move up the hillside overlooking the blue mirror of Galway Bay brought about a change of terrain. Here, underfoot conditions were treacherous. We both sustained cuts and abrasions and decided that discretion was the better part of valour, here at any rate! One specimen of *B. euphrosyne* was sighted but chase would surely have been folly. We took the moth species *Pseudopanthera macularia*, *Euclidia glyphica*, *S. irrorella*, *Semiothisa clathrata hugginsi*, and a rather worn specimen of *Parasemia plantaginis plantaginis*. Here, as everywhere else we had ventured, *L. sinapis* was abundant. Unfortunately no *Erynnis tages* were encountered, as we had later to concede that our trip was most likely too late to coincide with same. As it transpired, this species was to prove elusive for some time yet!

Such had been the success of our initial trip that a further excursion was planned for early August of the same year. However, circumstances dictated that it would be 17th August before an opportunity was to appoint itself. Again, we intended to camp over, but for the entire weekend on this occasion. Unfortunately, the weather mitigated against

this course of action. Hopes of taking *Thecla betulae*, the main object of our mission, diminished with every windswept drop of rain that lashed us as we set up our camp under car headlights. Under these adverse conditions, the light attracted a single specimen each of *Abraxas grossulariata* and *Philudoria potatoaria*. The morning of 18th August was dark, blustery, cloudy and the air felt heavy with the threat of rain. On arrival at Cloncoose, the uppermost portions of Mullaghmore were shrouded in cloud and an incessant drizzle began to saturate the countryside. Thankfully, this abated on occasions and the temperature had increased sufficiently to tempt some faded specimens of *Hipparchia semele clarensis* out amongst the clints. These were subsequently augmented by numbers of *Lasiommata megera* and even a single *Pieris brassicae*. In the shaded areas, *Orygia antiqua* flitted among the scrub. Our spirits were beginning to lift somewhat by these developments, but they were elevated even further by the sight of a female *T. betulae* flying about hazel scrub along the side of a narrow laneway. We noted others of both sexes before the weather began to deteriorate and we had to endure a twenty-minute downpour before another clearance set in. We managed to secure a single specimen of *T. betulae* each — John's, a female, mine a slightly worn male. We noted several others without any further captures being made. Ova were noted on sloe, but not in numbers. At this stage, being absolutely saturated from the constant drizzle, we decided to head for home in order to make the day's last sailing of the Killimer-Tarbert Car Ferry. Indeed, given the appalling conditions, we were slightly bemused that anything at all was to be found on the wing. Needless to say, the following day was one of glorious sunshine and clear blue skies over the entire country, leaving us frustrated with our decision of the previous afternoon. Even so, in retrospect, there was a great amount of satisfaction to be derived from achieving our aims — and much more besides — during our first two brief trips.

1985, unfortunately, will not be recounted with the same fondness on an entomological platform as some of the years which preceded it, but, that very same year, we happened to choose the weekend of 6/7th July as possibly the only suitable period for those of us wishing to travel across the Shannon. On this occasion, John and I were accompanied by James Lynch, a passive lepidopterist, who also brought along his camera equipment, which resulted in some interesting prints. We motored to our destination on the Saturday evening and arrived at Newtown Castle at midnight, camping at the precise location as in June, 1984. We arose at 7.00 am into an eerie greyish landscape further enhanced by a coldish cloudy morning but, as the morning progressed, the first shafts of sunlight penetrated the fast-dispersing cloud cover. Again, the thickets conjured up multitudes of *L. sinapis*, *C. minimus*, *P. icarus*, *C.*

pamphilus, *A. hyperantus*, *M. jurtina* and a solitary *Malacosoma neustria*, which I unsuccessfully tried to secure.

A move further afield brought us into an entirely different type of collecting location, about halfway between Kilfenora and Ballyvaughan. Here, we stopped to use a public phonebox and were startled to find a good number of moths, both inside and on the long grass in the immediate vicinity of the kiosk. Included were a pair of *Hepialus humili humili*, a single *Arctia caja*, *Hepialus fusconebulosa*, together with a good number of *Spilosoma luteum* and *Spilosoma lubricipeda*. Needless to say, we were left wondering what could be uncovered if it were possible to operate an m.v. trap at this location.

Our final destination was Cloncoose and upon our arrival, we noted many *A. aglaja* which were being whipped along by a stiff breeze amongst the stunted undergrowth and a variety of other obstructions. Capture was proving decidedly hazardous! Nonetheless, we did manage to secure a fine series of *Zygaena filipendulae* which were flying freely in the company of *Z. purpuralis*. Many shabby specimens of *E. glyphica* were observed but both John and I did manage to secure some cabinet specimens. John also managed to net a solitary *Phytometra viridaria*. Here, as previously, we encountered *A. hyperantus*, *M. jurtina*, *P. aegeria*, *P. icarus* and *C. pamphilus*, literally in their thousands. Some *Cetonia aurata* (Rose chafer) were noted on burnet rose (*Rosa spinosissima*).

We moved onto a higher elevation to investigate the wooded hillsides and here, in a sheltered depression, we encountered multitudes of *A. aglaja*, the vision of their golden wings flashing in contrast to the vegetation still fresh in the memory. Also, the usual contingent of *C. pamphilus*, *M. jurtina*, *A. hyperantus* and *P. icarus* were present with more occasional specimens of *Gonepteryx rhamni gravesi*, *L. sinapis*, *A. urticae* and *O. atrata*. Unfortunately all those of *G. rhamni* observed were totally dilapidated and virtually incapable of flight. John took two larvae of this species which he located feeding on Buckthorn in a secluded crevice beneath a large boulder. The gregarious larvae of *Inachis io* were much in evidence on nettles (*Urtica dioica*). Immediately prior to departing for our homeward journey, we succeeded in taking a single imago of *Hepialus hecta*. This species is quoted in *A Revised Catalogue of Irish Macrolepidoptera* by E. S. A. Baynes as being widely distributed but rather local.

Another eleven months were to elapse before we were to make a return to Co. Clare. During the entire weekend of 1/2nd June 1986, we only had the benefit of about one hour's sunshine, at maximum. Even then, we stuck manfully to our task through two overcast and occasionally wet days. We camped in an old disused quarry and, on the first morning, we

awoke to the sound of the "dawn chorus" with a cuckoo on the tree over our tent putting in a guest appearance! A specimen of *P. macularia*, conspicuous against the herbage in which it had taken refuge, was duly netted. Apart from that instance, the vast majority of our time was taken up with searching for the larvae of *T. betulae* on sloe, and we were delighted to take a number of these for rearing. Adults subsequently emerged the following August. Large numbers of frogs were much in evidence, this in itself being testament to the appalling weather conditions which prevailed throughout much of 1986. In addition, the saturated limestone pavements proved very slippery underfoot, thereby restricting our movements.

Day two, 2nd June began exactly as the previous one had ended, with heavy cloud cover and persistent light drizzle.

Subsequently, and rather surprisingly, the cloud cover broke somewhat between noon and 1.00 pm with a welcome interval of sunshine. Immediately, behind our camp in the quarry, the entire scene was transformed with scores of *Cicindela campestris* (Green tiger beetle) becoming active together with *L. sinapis*, *G. rhamni*, *Anthocaris cardamines hibernica*, *P. aegeria*, *Pieris napi britannica*, *A. urticae*, *Callistege mi*, *E. glyphica*, *P. macularia* and *S. clathrata*. Unfortunately, as rapidly as it materialised the clearance was obliterated by dense cloud and, with this, our presence in the Burren for a further year.

May 31st 1987 saw us set for a return trip, though this time we decided upon a shorter stay, travelling to and from the Burren on the same day. The previous night, we were misled into believing a forecast that reasonable weather was anticipated but unfortunately, when we arrived at our destination, our worst fears were realised when our appearance almost magically seemed to herald a torrential downpour. Not in the least deterred by such a trivial inconvenience, we set about searching (rather uncomfortably!) for larvae of *T. betulae* and located four of same approaching final instar. We were surprised that these were much more advanced than those of the previous year given that the dates were virtually similar. A search for buckthorn revealed large numbers of ova of *G. rhamni* and a few were retained for rearing, but in the final analysis, my own batch of half a dozen only realised a single adult. Just prior to departing from what is best described as a brief and unpleasant stay, when walking through some long grass on my way back to the roadway, I noted what appeared to be a rather drab moth clinging to my shoe. Resisting the temptation to flick it off, I was amazed to find, on closer examination, a perfect specimen of *Erynnis tages baynesi* — my first ever encounter with the species. Every entomologist probably has his/her favourite specimen and this most certainly rates as mine. If not my favourite, then certainly my luckiest!

1988 seemed to arrive as quickly as it takes to write it down and, again, we ventured forth on the last Sunday in May and were accompanied on this occasion by Tim Lavery, an outstanding dipterist. The ferry trip across the Shannon was not pleasant, with continual rain and visibility down to virtual zero. After some debate, it was decided to press ahead. Our arrival at Cloncoose seemed to have been preceded, thankfully, by a general clearance in the weather and conditions became quite encouraging with only an occasional hint of drizzle. Just as we brought the car to a stop, we were afforded the fleeting glimpse of a solitary *B. euphrosyne* feeding from a flowerhead. While John and I busied ourselves with our own work, Tim dispersed much further afield in search of his dipterous quarry.

In the grassy corners of large stone walled "fields", we noted scores of *E. tages* together with a good representation of *L. sinapis*, *P. napi*, *P. brassicae* and *B. euphrosyne*.

The terrain hereabouts is unusual with the limestone pavements being of varying elevations, rather like the steps of a stairway. Each layer is separated from the preceding one by escarpments of approximately fifteen feet, on average, though these are reasonably distant from one another. Small scattered thickets of scrub abound in this vicinity. Under these conditions, I captured my first ever *B. euphrosyne*, ending the day with a perfect pair. Also noted, or taken, were *C. pamphilus*, *L. megera*, *A. cardamines*, *E. glyphica*, *P. macularia* and *Tyria jacobaeae*. Apart from *B. euphrosyne*, the highlight of our day's work was the capture of two specimens of *Hemaris tityus*, an extremely local Irish insect. We noted larvae of *T. betulae* and *Triphosa dubitata* feeding on sloe and buckthorn respectively.

When we met up with Tim again later in the afternoon, he was able to inform us of the many *Syrphidae* (Hoverflies) he had recorded/collected, including *Microdon mutabilis* (locally common), *Ferdinandea cuprea* (one specimen only), *Cheiloisia albitarsis* (common) and *Sphaerophoria menthastris* (common). He was particularly excited about the capture of the spectacular Conopid, *Conops vesicularis*, a female of which he took in flight along grass-covered scrubland. Viewed under the Stereo-microscope, this is a most majestic insect. According to Tim's research, this would appear to be only the second Irish record of this rare species.

Throughout the day, many large specimens of *Odonata* were observed and it is our intention to record these on future trips, as new species have been discovered in Ireland in the very recent past. These, together with the Coleoptera I would imagine, are generally neglected in the Burren, thereby creating a vacuum for work in this field which would prove quite rewarding.

Unfortunately, it must be stated that many of our trips have been marred somewhat by characteristic Irish summer weather. But, nevertheless, we have been most fortunate to record some rare and local Irish insects which one would not expect to encounter elsewhere. Future trip are planned, hopefully resulting in further interesting discoveries. Such is the magic of the Burren!

The following is a tabulated list of the species recorded. As it was never my intention to concentrate on other than the Rhopalocera, a list of the Heterocera is also provided, but in less detail.

BUTTERFLY SPECIES RECORDED IN THE BURREN: 1985/1988

Brimstone	<i>Gonepteryx rhamni gravesi</i> Hugg.	Locally common
Brown hairstreak	<i>Thecla betulae</i> Linn.	Rare
Common blue	<i>Polyommatus icarus mariscoleore</i> Kane	Abundant
Dark green fritillary	<i>Argynnis aglaja</i> Linn.	Locally common
Dingy Skipper	<i>Erynnis tages baynesi</i> Hugg.	Locally common
Grayling	<i>Hipparchia semele clarensis</i> De Latt.	Common
Green-veined white	<i>Pieris napi britannica</i> Ver.	Locally common
Large white	<i>Pieris brassicae</i> Linn.	Occasional
Meadow brown	<i>Maniola jurtina iernes</i> Graves	Abundant
Orange tip	<i>Anthocharis cardamines hibernica</i> Will.	Local
Peacock	<i>Inachis io</i> Linn.	Occasional
Pearl-bordered fritillary	<i>Bolaria euphrosyne</i> Linn.	Locally common
Ringlet	<i>Aphantopus hyperantus</i> Linn.	Abundant
Small blue	<i>Cupido minimus</i> Fuess.	Locally common
Small heath	<i>Coenonympha pamphilus</i> Linn.	Abundant
Small tortoiseshell	<i>Aglais urticae</i> Linn.	Occasional
Speckled wood	<i>Pararge aegeria</i> Linn.	Locally common
Wall brown	<i>Lasiommata megera</i> Linn.	Common
Wood white	<i>Leptidea sinapis juvernica</i> Will.	Abundant

MOTH SPECIES RECORDED

<i>Abraxas grossulariata</i>	Maggie moth	<i>Orgyia antiqua</i>	Vapourer
<i>Arctia caja</i>	Garden tiger	<i>Parasemia plantaginis</i>	Wood tiger
<i>Callistege mi</i>	Mother Shipton	<i>Phyludoria potatoria</i>	Drinker
<i>Deilephila porcellus</i>	Small elephant hawk	<i>Phytometra viridaria</i>	Small purple-barred
<i>Ereioaster lanestris</i>	Small eggar	<i>Pseudopanthera macularia</i>	Speckled yellow
<i>Euclidia glyphica</i>	Burnet companion	<i>Semiothisa clathrata</i>	Latticed heath
<i>Hepialus fusconebulosa</i>	Map-winged swift	<i>Setina irrorella</i>	Dew moth
<i>Hepialus hecta</i>	Gold swift	<i>Spilosoma lubricipeda</i>	White ermine
<i>Hepialus humuli</i>	Ghost moth	<i>Spilosoma luteum</i>	Buff ermine
<i>Malacosoma neustria</i>	Lackey	<i>Triphosa dubitata</i>	Tissue moth
<i>Hemaris tityus</i>	Narrow-bordered bee hawk	<i>Tyria jacobaeae</i>	Cinnabar
<i>Odesia atrata</i>	Chimney sweep	<i>Zygaena filipendulae</i>	Six-spot burnet
		<i>Zygaena purpuralis</i>	Transparent burnet

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SOME IRISH LONGHORNS (COL.: CERAMBYCIDAE)

by Michael O'Sullivan (7592)

Of the Coleoptera, the Cerambycidae are possibly the most spectacular, when considered on an overall global platform. In the context of the British list, comprising approximately 67 species, only about 40%, at the very most, would probably occur in Ireland. Being xylophagous, the lack of woodlands most likely contributes to their scarcity.

During the initial stages of 1989, I have taken or have reliable records and specimens of five species being noted. The first, and most common, being *Strangalia maculata* (Poda), an insect abundant in woodland clearings with a particular fondness, it would appear, for bramble blossom (*Rubus fruticosus*). *Rhagium bifasciatum* (Fab.) has only been noted during the winter and spring in decaying wood. On many occasions, the larvae have also been found present with the adults. *Rhagium mordax* (De Geer) has been taken, in flight, by John and Tim Lavery at Uragh Woods, Kenmare and Lickeen Woods, respectively. A single specimen of the tiny *Pogonocherus hispidus* (L.) taken by Tim Lavery at a lighted window at Farnes, Castlemaine, is now in my collection. Joy gives its Irish distribution as Leinster and Munster but of a local occurrence. This species is quite similar to *Pogonocherus hispidulus* (Piller), the distinguishing feature being the dark scutellum of the former. The fifth species is *Grammoptera ruficornis* (Fab.), a solitary specimen which I took from hawthorn blossom (*Crataegus monogyna*) at Beheenagh Woods Camp in May. John Lavery recovered it from the same medium at Uragh Woods while Tim Lavery swept it from Guelder rose (*Viburnum opulus*) at Killarney. All records are from County Kerry localities.

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SILVER-STRIPED HAWKMOTH IN WEST YORKSHIRE

by Mark Tunmore (9013J)

I have been moth-trapping for the past two years in the garden of my home in Meltham near Huddersfield.

On October 23rd, 1988 at 8.25 pm, I went to check whether my MV moth trap on the flat roof of the house was attracting many moths. At rest beside the trap I found a Silver-striped Hawk moth (*Hippotion celerio*) in excellent condition, which I quickly captured. When I emptied the trap the next morning, I found single specimens of two other migrants — the Gem and Dark swordgrass. The capture of these other migrants, and the wind direction in the preceding two weeks (strong east to south easterly) suggests that this was a genuine immigrant and not one that had been released in the local area. I released the moth the next evening after a friend had taken some photographs.

Had I not gone to check the trap that night, the moth would probably have failed to go into it and would have flown away or been taken by birds the next morning. What other rare and scarce species are going unrecorded simply because they do not fall into our moth traps?

To combat this, during the peak months for moths (June to October) I have been collecting any specimens which have not gone into the trap immediately before switching it off at 4.00 am. This may seem rather extreme, but in the last season I found on average, I was capturing 32.5% of the total caught in an evening by this method — moths which would otherwise have gone unrecorded and which included species I have not encountered before.

SOME OBSERVATIONS ON THE LARVAE OF THE COMMON GNAT

by Frank Marples (8226)

At a glance it seemed that my tiny, shaded, back-yard pond supported very little insect life. I noticed, however, that the larvae of the common gnat, *Culex pipiens*, had become a regular feature, and that they led quite active lives. I found their postures and movements fascinating.

An individual would "hang from the skin" of the water surface — taking air and resting. It would loop its head around and slowly gyrate its whole body. It would fall effortlessly, or twitch its body upon a sudden alarm, and dart, tail-first, into the delicate weed. On occasion it would turn and form a loop, then extend itself, gliding to and fro in graceful descent through the still, green pond water. A concerted "twitching" body action would be required to bring itself, tail-first, up to the surface for air once again.



I.

Life-cycle
of the Common
Gnat, or Mosquito,
Culex pipiens

Imago



Egg-rast

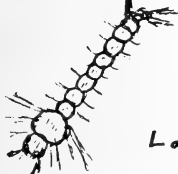


Pupa



Aquatic
stages

Larva



g.j.

2.

Observations
of captive
gnat larvae



*Culex
pipiens*

resting positions

slow gyrations and
lateral movements



loop and
fall

"twitch" descent
upon
sudden
alarm



body
motionless
in
descent



"twitching"
ascent



free glide



movement
amongst pond
weeds

g.m.
8226

THE STATUS OF THE WHITE-LETTER HAIRSTREAK IN SURREY

by Michael Harvey (7916)

Although specimens of the White-letter hairstreak butterfly, *Satyrium w-album* may rarely be seen, this is no indication that a colony is not present.

I have only seen the adult at six sites, but I know the whereabouts of many more localities by having searched for the ova during the winter months.

Following the demise of the common elm (*Ulmus procera*) and to a lesser extent the wych elm (*U. glabra*) by Dutch elm disease, the colonies of *w-album* do not appear to have been much affected.

It would appear that as long as some sucker growth was present before the death of the parent tree, then this would be enough to support the colony until further growth took place.

A colony of *w-album* is able to survive on just one isolated tree (normally a wych elm in this case) but I have found the ova on isolated common elms which were no more than fifteen feet high.

The ova are laid, sometimes tucked beneath a bud, from the tips to some way towards the centre of the tree, mainly at a height of between four and twelve feet. They look very much like small black flying saucers with grey edging.

In my experience they are somewhat easier to find on common elm than they are on wych elm, since the branches of the latter are often covered in small brown and black blotches which are remarkably like *w-album* ova!

I have returned to many of my sites during the flight period of the butterfly in the summer but have still not always seen any adults even though I know them to be there and have then found the ova later in the year.

The habits of *w-album* are somewhat similar to those of the Brown hairstreak (*Thecla betulae*) as it walks alone along the branches to the centre of the bush whilst laying, but apart from feeding, the remainder of the day it is to be found in some adjacent tree.

As I have found the ova in almost every suitable habitat that I have searched, it is my opinion that *w-album* is still a fairly common butterfly in Surrey.

After all, how many colonies of the Brown hairstreak would be known if we had to rely on seeing the adult butterfly?

I would also add that I saw three females of *w-album* in late August 1989. As this was a very hot summer and most species were on the wing earlier than usual, could this have been a second brood, as they were really fresh?

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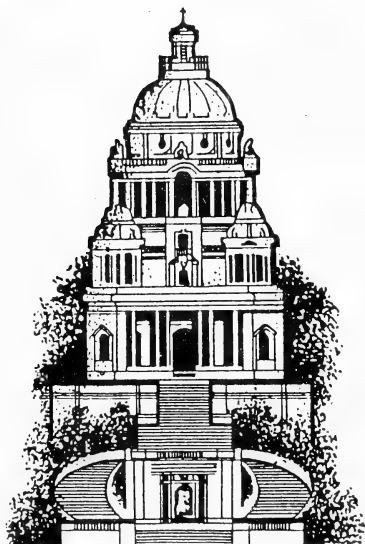
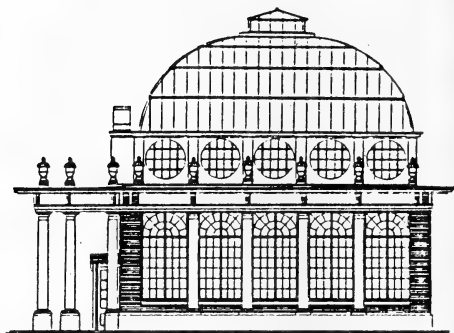
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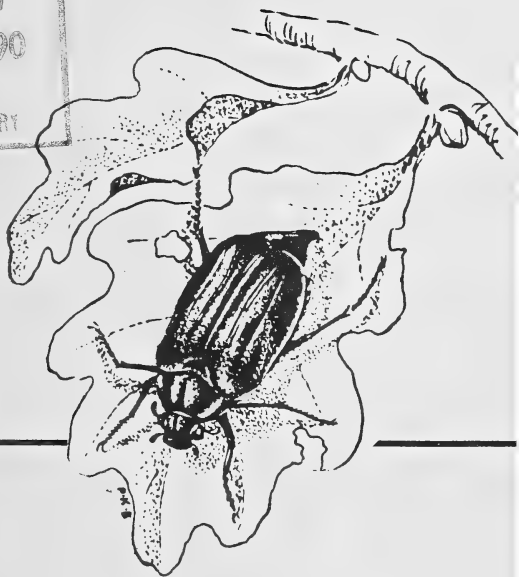
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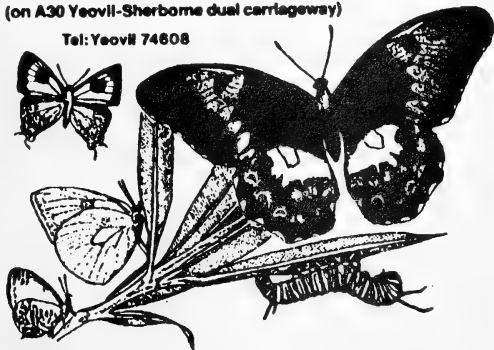
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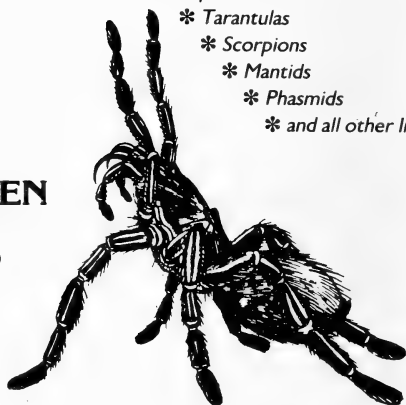
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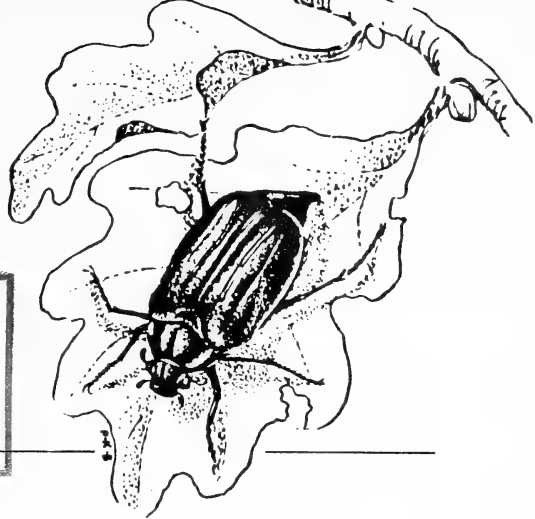
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AES BULLETIN

No. 369



EDITORIAL

For some time now the government has been mouthing platitudes about its commitment to "green" issues and to "law and order." Far from putting any money where its mouth is, it can now be seen to be doing everything possible to destroy the environment, continue with pollution (witness the eight-year interval before North Sea dumping is to cease in spite of universal condemnation), and cut back on law and order. I have already mentioned in a previous editorial the appalling consequences of both the immense road programme and of the spin-off effects from the Channel Tunnel, which are destroying the lovely cliff-top and cliff-bottom habitats between Folkstone and Dover, home to so many of our moths and butterflies and such a well-known collecting habitat to our forebears. Another example of Government lack of care for the environment is the latest appalling decision to run a motorway over instead of under Twyford Down.

Although many disciplines have been suffering from cutbacks over the last few years as the result of running down the whole base of Government-funded research, entomologists in particular have suffered severely recently. We reprint in this issue how the world expert on forensic entomology is to lose his job. Already it has been reported that the forensic laboratory, so necessary in helping track down criminals and terrorists is understaffed and overworked. In addition eight entomologists in Cambridge who worked for an AFRC Unit have been dismissed. They were engaged on basic and fundamental work concerned with the replacement of highly toxic insecticides with more benign methods of control and included a Fellow of the Royal Society, another world expert in his field. We do not blame the AFRC directly, for this has been forced upon them by lack of government funding. In addition, as scares over Salmonella and Listeria arise, so are the research institutes studying them run down. Not only does the dismissal of staff and closing of establishments cut back on research, but it undermines the morale of those

who remain, often without back-up facilities which makes it difficult for them to do their job properly, and the best of them then seek other jobs, often abroad, thus aggravating the situation.

In East Anglia, an already understaffed Police Force has suffered another cut-back. One might well ask what this has to do with entomologists. A lot. An understaffed Police Force will of necessity concentrate on serious crime and has not got the resources to investigate minor (in their view) infringements such as the vandalism and destruction of SSSIs (Over 250 of which were damaged in some way or other last year) and the illegal trading in protected insect species.

One of the main destroyers of SSSIs and other wild-life sites is clearly the Department of Transport and the Construction Industry, both of whom have immense influence amongst MPs by their persistent and sustained lobbying. It needs us entomologists to write and harass our MPs in the opposite direction to try and counter this lobbying and persuade them that the environment *MUST* be preserved *NOW*, if for no other reason than for the sake of our children, who will not, I believe, enjoy the total concrete jungle and polluted environment we at present seem to be heading for.

ZAK HAS THE BUG BUT HIS JOB COULD BE SCRATCHED

by Jody Tresidder

If Cambridge University's Dr Zakaria Erzinclioglu did not already exist, some crime writer would have to invent him.

His name looks like the results of a chimp having been let loose on a bag of Scrabble letters. His accent retains wonderfully exotic tinges of his native Turkish.

With slightly old-fashioned black whiskers and shrewd dark eyes behind metal-rimmed spectacles, he looks precisely like the sort of fictional sleuth who ingeniously fingers the villain when everyone else has failed.

Which is exactly what Dr Zakaria Erzinclioglu does for a living. Well, sort of anyway.

He is Britain's only full-time forensic entomologist, which means he is an expert in the use of insects to solve serious crime, usually suspicious deaths.

By studying bugs found on bodies or bones, even when the remains are years old, Zak - as he is known to colleagues - can, for example, often determine the date of death with far greater accuracy than a pathologist.

Seems puzzling

Which is why he has been called by the police to assist with some 60 investigations in the past 13 years. The most recent case was that of the couple from Oxford, found murdered on a coastal path in Devon last year.

His detailed knowledge of the development of different species of maggots found on the bodies gave police a fresh theory about when the victims had been killed. His findings have since been confirmed by other evidence.

"It is," agreed the doctor, 'very interesting work. It has its macabre aspects but it is challenging and very rewarding when you discover the right answers."

Given, then, that he is the only person in the country doing this job, it seems puzzling that he could be out of work by August. That is when funds for his research from the Field Studies Council run out.

"It is, of course, not a unique position in science these days," said Dr Erzinclioglu, who works in a university zoology department still reeling from the dismissal of eight scientists in the Agricultural and Food Research Council Unit.

"Cuts like these mean that I cannot, in all conscience, encourage young students to become research scientists. What promises can one make?" he asked sadly.

He remains hopeful that the Home Office might throw him, at least, a cash lifeline before the August deadline arrives. He has even persuaded the Home Office to ask all 40 forensic pathologists in England and Wales how useful they find his services. The answers so far coming back are ranging from "very, very, very useful" to "very, very, very, very useful".

If the Home Office chooses not to oblige, however, there may be an alternative. Oxford University already has a "Kellogg Tutor in continuing Education" paid for by the cornflakes people, as well as the "Fiat Chair of Italian Studies" sponsored by the car giants.

Fruity accent

So what about the Association of British Crime Writers pooling their royalties and making Zak Cambridge's first Crime Bug Buster Fellow?

"I imagine, too, that a "Dr Zak of Cambridge" series, like Oxford's Inspector Morse, would be an instant best-seller. Why no crime writer has used a forensic entomologist in a plot before I can't imagine.

"I understand," said Dr Erzinclioglu in his marvellous fruity accent, "that there is a Finnish novel that makes a reference to the subject. It is

called 'How the Fly Solved the Crime' or 'What the Fly Knew' — but I don't read Finnish."

If anyone knows of a translation, I'd love to hear it.

(The above article by Jody Tressider is reprinted from the *Cambridge Evening News* of 6th February 1990 with the permission of their editor to whom we extend our thanks.)

A NEW ENTOMOLOGICAL FAIR

To be held in Croydon on Sunday 3rd June 1990

Arrangements have been made for an entomological fair at the Arnhem Gallery, Fairfield Halls, Croydon, on Sunday 3rd June 1990. The fair will be open from 11.00 to 16.15 hours. Traders/exhibitors will have unloading space and close direct access to the front of the main hall from between 08.30 and 10.45 hours and afterwards from 16.15 to 17.00 hours when the hall has to be vacated. Outside these hours all vehicles must be parked in the adjacent multi-storey car park.

The venue is a large separate hall within the Fairfield complex and is a few minutes walk from East Croydon Station (BR Southern Region), and convenient to a number of bus routes. Parking in the adjacent multi-storey car park is free of charge. Catering facilities are present within the complex.

Details are available from M. J. Hoare, 61 Pontoise Close, Sevenoaks, Kent TN3 3ET.

(We understand that this new venture, which is being extensively advertised, is to replace the North London Fair formerly held at Picketts Lock. We wish it every success and hope to publish an account of it in due course.— Editor.)

SWEET GALE MOTHS AT GLENGARRIFF

by Michael J. O'Sullivan (7592)

While investigating some small fields in close proximity to the Church at Glengarriff, County Cork, on 6th August 1989, I took two larvae of the Sweet gale moth (*Acrionicta euphorbiae myricae*) which were noted feeding on rush. On the following afternoon, I found another larva wandering on the ground near a clump of ragwort. At present, all three larvae are feeding avidly on willow. Skinner notes that this species is of restricted distribution in Ireland and both South and Skinner cite records from County Cork. Interestingly enough, neither list rush amongst the larval foodplants while this region harbours an abundance of myrtle, sallow, birch, plantain and willow.

100 TODAY

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No. 1. VOL. I.

APRIL 15TH, 1890.

ON THE
OCCASION
OF ATTAINING
YOUR CENTENARY

DOWN THE TUAK ROAD

by Leigh Plester

(continued from page 9)

Sarawak's Primary Industries Minister, Datuk Dr Lim Keng Yaik, informed the world on 14th April 1988 that 61 per cent of Malaysia was still covered with rainforests and that, if rubber, oil palm and cocoa plantations were included, 73% of the region could be considered forests. "Most of England is covered with oak woods, if you include the mangold fields," (me, biologist with a loose screw, April 1988).

The cocoa plantations of Sambir — intercropped with coconut palms — bear little resemblance to the complex primary rainforest ecosystem, which is not to say that they are completely defunct of life. With the only Bolex we had packed now refusing to operate (the wind-up mechanism had expanded in the heat), we spent our week at Sambir taking still pictures, chasing some of the insect life, and biting our fingernails. With just one month left, we returned to the capital and Stephen's charming house with the tiled floor and a car in place of the open Jabatan boat and outboard.

We visited the Department of Forests, whose personnel turned out to be worried sick because we had not reported in although their government had requested they give us every assistance possible, which was fair enough as, under the terms of our permit, they were getting free video copies of the films. Which, in view of Sarawak's developing country status, we also felt was fair. "It looks like Bako's the answer," said Encik Erwin Wright of the Department, "though you could take a look at Matang, which is that weird mountain you can see on the horizon not far from Kuching and which — to be frank — is a bit of a freak, as it's still covered with primary rainforest." His last words, in a world of suburbs, scrub, secondary forest and plantations, were beginning to take on the characteristics of a wraith or an income tax rebate, there but somehow always just out of reach. Bako was the local national park displaying, among other things, no less than seven of Sarawak's major habitats. Including the mysterious primary forest. Of the paradise more in a later issue.

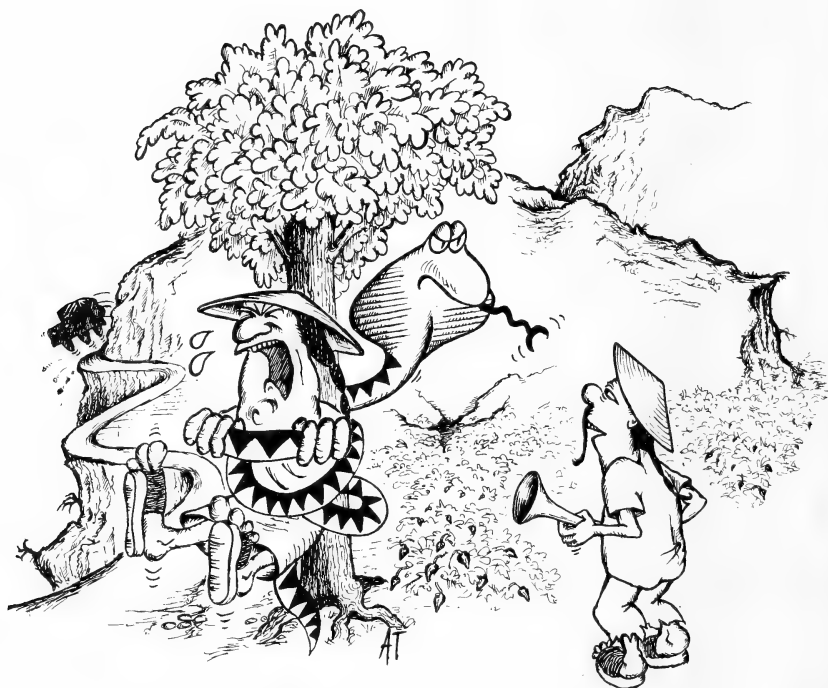
It transpired that two permits for entry to the national park were now required. An Australian importer/exporter had apparently been helping himself willy-nilly to pitcher plants, *Nepenthes* spp. and there was now a general Malaysian crackdown. The BBC were also on the Forest Department's blacklist as they had refused to replace a film, at cost, damaged by the Sarawakians. The net seemed to be getting tighter, but it was only an initial impression: we experienced no trouble of any kind the

whole time we were there. Meanwhile, with the primary rainforest apparently as rare as a messiah in a witches' coven, we concentrated on other things.

We spent the afternoon of 16th April filming a species of rhododendron, lantana (a butterfly bush), hibiscus bushes, weeds, beautifully manicured gardens with bougainvillea spilling out of ancient Chinese jars, and a giant snail asleep and all alone on a wall, in the residential district where Stephen lived. *Precis orithya wallacei*, just emerged, was tortoiseshell quick, with blue, black and pale wings, much given to sunning itself on hot bare earth. I never did catch one. The sun caught us, took hold of our pale skins, and burned them red.

Frequent oblique references by Stephen to his "lady boss" had prepared me for a battle-axe with meat cleavers for teeth. When we reached Semonggoh, site of the head office of Jabatan Pertanian, shrieks of cicadas coming clearly in through the car windows, it was to meet a charming dark-eyed, coffee-skinned young Bidayuh lady boss with a doctorate. While Stephen went about his business I commenced to fall in love for the 57th time in Sarawak. Quiet entomologists pored over papers, pecked at typewriters, probed specimens, stabbed with pins, and hefted the corners of display cases in order for unique specimens to catch the light, fans the meanwhile unobtrusively turning, the air refrigerated and — to me — irritating and alien after the hot outside, the Sarawak that I liked. But these were mere side-shows. "Pins, killing fluid, polythene bags, boxes" She spread her palms and I looked at her and said Yes please and I have already wrapped the moon, but there was a short circuit somewhere and so we men went out with armfuls of entomological tools and appliances and I mourned her ever after.

Outside the door, Stephen stopped me. "She wanted to throw all the old insects away," he explained of this ogre and then proceeded, knight errant, to lead us to a cool-cool room full of shelves, to hand down boxes that were box files lined with polystyrene transfixed with pins and insects, some of them so small you could hardly see them against the labels, others gross, magnified, tropic-distended, their appendages, amputated by plumbing vibration or haste, lying scattered on the floor of the box. He prised the lid off a container out of which a genie leapt who took me back thirty years, to 1959 when I had first written, as a raw AES recruit, to a certain Mr Stephen Kueh of Sarawak, a man of my generation (papers burnt by uncle during Japanese occupation, exact age unknown), who it turned out was pleased to exchange specimens for our miserable British ones and who first showed me what a Rajah Brooke was, far-far before I realised that a human being had dared precede that jet black and feathery green, crimson ruffed and leggy South-east Asian birdwing.



The box housed a dozen of the species, including two females, by far the rarer of the sexes. There were other beauties besides, whose translucent outlines through the papers wove their own spells. Eldorado! Only old men who have searched long, or the very young who live in the best of our worlds, could imagine. . . .“And this,” he giggled, “flew into a lamp right here at the department one night and nobody knows what it is!”

I measure it now. Eight centimetres. A beetle dominated by pale brown elytra and legs like rose bushes, antennae cropped short, shifting round the box in segments, find me if you will, huge wire-cutter jaws, tarsi that are great Dane’s pads Araldited to claws you could set micros on and still have room for the labels. A magnificent beast! Better still, it taught me one of the basic entomological principles of the tropics. In temperate countries museum beetles burrow with relish into the bodies of pinned specimens. In South-east Asia they ignore the mountains of chitin and tuck with a will into their labels. “Senonggoh, At light . . . -VI-1973 Col . . . S. Kueh.” I can just make out on a scrap of paper that has obviously been attacked by one of the more voracious species of crocodile.

When we left the country, Stephen carefully wrapped up the box files and their precious cargo and my wife spent much of the trip reading, with the boxes on her lap. Which just serves to show how stupid men are who put themselves above women.

Matang, if it had popped up in South America, would have been almost unscalable and the home of dinosaurs. This "lost world" attains an altitude of 2,300 ft, is topped by some sort of radio transmitter, and has a serpentine of a road running up it that made Stephen wonder whether his brakes would not burn out on the way back. Nick told him not to worry as we were going up, which just goes to show how the Chinese influence creeps in. Part of the way up there is a film set longhouse that was used in a famous movie and is now off-limits (possibly they have a sequel in mind). At the bottom there are refreshments, where *Precis iphita* — black and brown like immaculate chocolate — played about on the *Gleichenia* fern which is common in both primary and secondary forest. Near the top, as far as one could go, where the forest is sprinkled with conifers, white and purple orchids nodded gaily at the roadside. There were huge black sand wasps that I was unable to catch.

But the best place was the track which wound up towards a sort of waterworks (also out of bounds, with a picture of a soldier holding a rifle) and along which one constantly met groups of Chinese, most of them families. The primary forest towered above, while the right side of the track fell off steeply into a gorge along which a stream flowed. It turned out that I had forgotten some lens or other and Nick and Stephen volunteered to go back to the car and fetch it. Alone, I descended the gorge, finding water in the bottom, huge boulders, the strains of a portable radio and a polite young Chinese couple who, after watching my antics, bowed and smiled and waved.

Wonderful damselflies flitted from rock to rock, their wings transparent yet giving off a kaleidoscope of colours when the light caught them. They were not large but were quite different to anything I had ever seen in Europe. About a dozen others were smaller, but their wings were adorned with iridescent blue patches twinkling and sparkling as they flitted from one perch to another. I collected a few of each and then, to the accompaniment of smiles and waves from the young couple, I clambered back up the side of the ravine, to where Nick and Stephen were waiting.

"Look!" said Stephen. A six-inch apparition rose on forewings large, squeezed in a fist, hindwings given a thump for good measure, a slow-motion-flapping in the gloom of the trees, a spectre grey and black, rising at a tangent. "*Idea lynceus*," he explained. Most of us are familiar with *Idea leuconoe*, one of the few butterflies you can photograph in

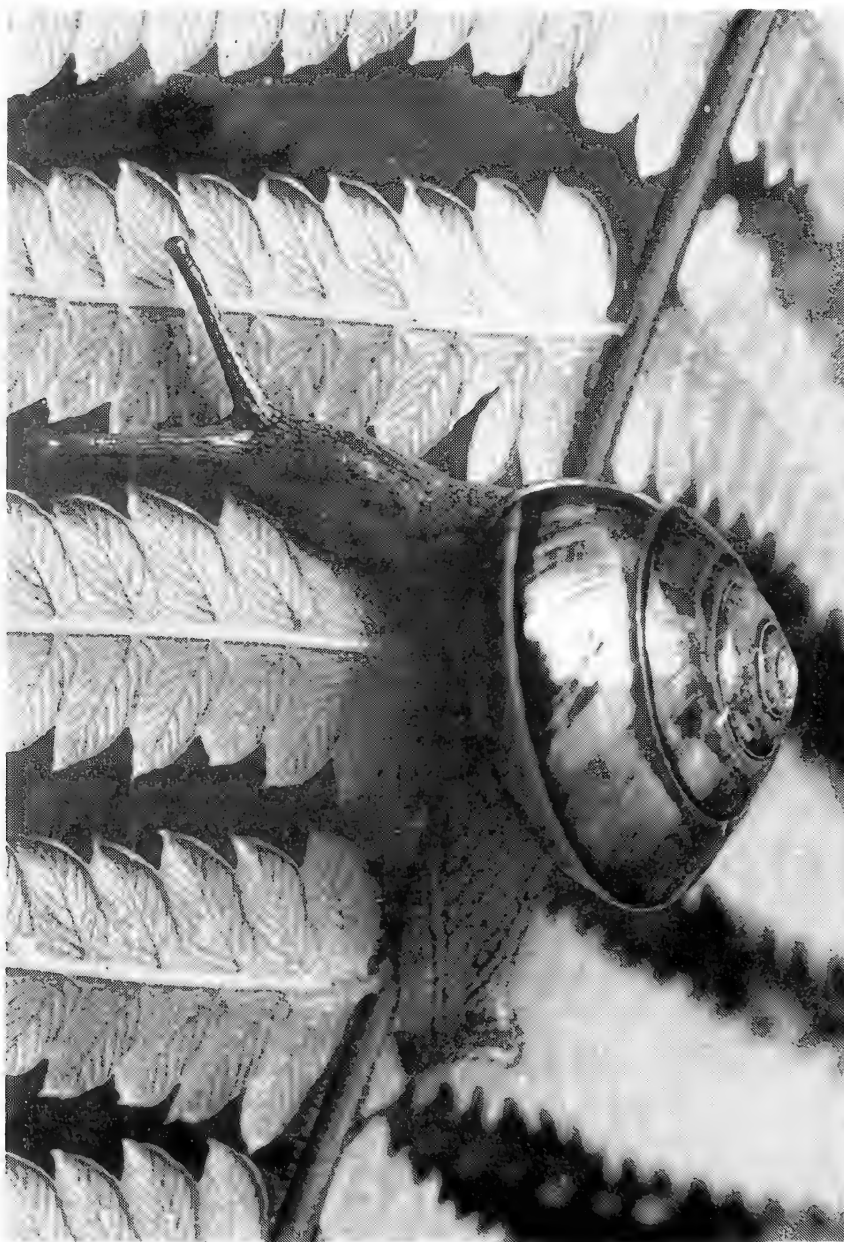


Fig. 1. A rainforest relative of the large snails found clinging to wall in Kuching. (Photo: Majuri and Plester.)

monochrome and then pass the picture off as a colour transparency. This was one of its more exotic relatives. To my great regret it was the only specimen we saw. It flew like nothing I had ever seen before. And it winged up free.

Sibu marks the start of Sarawak's longest and — insofar as the country is known to the world at large — its most famous river, the Rajang. We made two trips to Sibu, the first in the company of the Cocoa Moth Project "Jabatan lads", the second to go upriver with "the girls" to Kapit, some 150 km further south. At first tarmacked, the road from Kuching to Sibu soon becomes a hard, baked dirt road amply supplied with deep pot holes. There were six of us in the Nissan Patrol when we started off on the morning of 18th April and six of us arrived at Sibu on the evening of the same day, which was a triumph, as a latter-day Iban headhunter might have taken us for mincemeat and purchased us by the kilo after the pounding we took.

The road was lined with secondary forest, weedy rice paddies, green coastal hills, and clouds of dust. For air-conditioning we had an "air con" capable of producing arctic gales out of a hat, while for entertainment we had Stephen who regaled us with anecdotes about his HASH. HASH is technically a paper chase in which one person, the hare, lays a heap of paper at strategic intervals along a route that unfolds as he runs and his warped mind gets to work. The object is to persuade a mob of pursuers, the hounds, that it is worth going up Everest and down the other side at a sharp trot in order to catch the hare, which (apparently) they rarely do. When the hounds are women they are not hounds but harriers. "What happens if you step on a cobra?" Nick asked practically. It turned out that it was the speed that counts.

"That hill" said Stephen, slapping me soundly on my sunburnt shoulders to gain my attention, "is the one old so-and-so hare dragged us up and you shu'v sin heem, . . . he went pok wok up n dow . . . not wot cam huang wong tuu", after which he became a trifle incoherent. I shuddered. These lads (and lasses) met to run every Tuesday. In the dark. April was a mild plus 35 Centigrade with greenhouse humidity and they were still running; come July and the real heat and Stephen would be still looking for dim paper along an obscure track, working-working towards his *thousandth* HASH! I daydreamed of cool-cool beer and just then, regrettably, someone moved and the air con blasted me in the face and my lungs prepared themselves for double pneumonia.

About lunchtime we pulled in at a Sarawakian hamlet, where a Chinese couple served us the usual delicious Chinese nosh-up: tasteless boiled rice and insipid boiled chicken slashed into regular cubes, meat, gristle, bones, plumbing . . . This was inscrutably spiced, the consumer having the option of two slices of red hot chili swilling in salty soybean

sauce in a thimble-sized side dish, or of sucking his thumb. For breakfast Stephen regularly ate a double helping of "mee", which is emaciated inscrutable spaghetti covered in curry. A dried egg lurks within its tendrils. This masterpiece of imagination comes out of a packet, and is poured into boiling water. Twice I thought they had discarded the goodies and cooked the packet, but it was the curry on a queasy early morning stomach that eventually set me right.

As I was saying . . . about the wildlife: Stephen later pointed out several places where Rajah Brooke birdwings used to descend onto the muddy surface of the road to imbibe moisture. But alas no more, which is yet another example of "progress". A second case that one could quote is the fact that the weather in South-east Asia has changed. Local residents offered various explanations for this — air pollution, the atomic bomb, Reagan and Gorbachev.

It was while (apart from our driver), we were all slumbering, that our driver, Tim Tuck Toon suddenly slammed on the brakes. None of us was wearing safety belts and so we all promptly frozen-fish-packed ourselves against the windscreen. "Tim's had two accidents and suspensions already," Stephen confided later. "He dispatched a motor cyclist." "Toon he's going to dispatch another one!" I quipped. Oaths now justifiably flew in several languages. "Cobra on the road," said Tim or Tuck or Toon, by way of reinstatement, pointing back along the road. I could just make out a length of fire hose about a hundred yards back. A glance at the light revealed that not only was the sun going down, but we were in a shadowy space between hills.

Forgetting the Bolex, I leapt out and began to run in the direction of the hose. I was still some twenty metres off when the miserable beast reared its head, rudely stuck out its forked tongue, and effortlessly rolled back on itself. By the time I reached the spot, much to my chagrin the cobra had vanished into a pepper garden. It was the second, and last, of its kind we saw; its predecessor we had met being towed along by a farmer in a cocoa plantation at Lubok Paie, near Sambir. At first resembling an elastic melanic dachshund, it had turned out to be a big snake with an extra hole in it. To give the farmer his due, he had been forced to shoot the snake when, hissing irately, it had refused to budge from the tree under which his mother was working and so he had felt obliged to eradicate the threat of its presence. Cobras are one of the few really poisonous snakes of Borneo. The weapon it was shot with, elastic wound around its hammer, the sights seeing targets unattainable by the barrel, had looked more formidable than the snake. Now, on the Siburoad, the talk ranged from cobra to krait, from viper to painted bronze-back. I introduced the concept of the European one-eyed bed snake, after which the conversation deteriorated rapidly.



Fig. 2. Creepers, epiphytes and other hangers-on are typical features of primary rainforest. The nearest places to Kuching for this important habitat are Matong and Bako. (Photo: Majuri and Plester.)

We breezed into Sibü in the early evening. Tim Tuck Toon proceeded to get us lost, which was hardly surprising considering he had three navigators, all with differing opinions in Cantonese. A map was produced as we inched down (1) Jalan Rajah Brooke, or (2) Jalan Tun Abg. Haji Openg, or (3) Jalan Wong Noi Siong. Not to be outdone, "There it is," cried Nick, spying a road junction being crossed by a bevy of comely maidens, "the street of my life — Jalan Nooky-Nooky!"

I liked Sibü. It has a waterfront from which the Rajang (Rejang) express launches left early in the morning. A huge *Urania fulgens* moth — an enormous chocolate cake lepidopteron with a slice of cream in each wing — possessed of depraved, tropical habits sat astride a piece of flotsam, probing into the filth with a long proboscis and obvious enjoyment. There were groups of young ladies gathered about the tables in the dock area, come-hither smiles, coffee skins, silhouettes against street lamps around which the winged things thronged. There were photo-shops and a MacDonald's staffed by young Chinese Sarawakians who had never heard of "mee". There were hotels galore and open fronted emporia at which (much to the astonishment of the sweet young things behind the cash register) I said: "I'll have this tape, yes the one that you are playing, it must be Suzy whatsit; oh, and a pack of those "Double Happiness Hygienic Serviettes" for killing my creepies. Sie sie ni," (thank you in Chinese to open mouths).

There were double hotel rooms at 30 ringgits a night (about GBP 6.40p), air con battered to death by previous residents, a line in the bathroom you could hang your wet underwear on for posterity in suspended animation, it never drying out, and a TV set with a perpetually repeated American horror movie in which the dead awakened and, while blasted in two or even twenty-two, continued to grope after the heroes — Oh I groaned I know how you feel, I too had "mee" for breakfast.

On the second landing of the inscrutable hotel there resided the inscrutable "Pussy Cat Barber's Saloon" into which Nick (one of the best business managers in the business) intrepidly ventured, to reappear in due course a wiser man. "I asked," he related, "Hello, darlings, do you also cut hair? They shook their heads and invited me to sit down. One was a young *man*." I shook my head, too, and just then Stephen arrived and we went out onto the landing.

In forty seconds I was back, tipping ethyl acetate into my makeshift killing bottle and on to the bed. For against the neon light set high above the open doorway to the second landing there rattled three insects 6 cm in length, the discoidal cell of both pairs of the brownish membranous wings divided into two parts by an oblique vein into a triangle and

supratriangle, the hind wings noticeably different from the fore wings, their forms at rest with the wings extended horizontally from the sides of the body, their eyes huge, their mandibles strong, their legs similar, armed with spines, their abdomena long and narrow

With the help of Stephen's four-folding net, we scooped them off the wall, dodging gnats and the occasional guest, and thrust them into the jar, where owing to the high temperature and Ethyl's Law of Evaporation they soon succumbed. Nick peered thoughtfully at them. *Aeschna* dragonflies," I explained, "or local equivalent. Who knows, in these parts." He raised a puzzled eyebrow towards the neon light.

:"The museum pests eat the labels, and dragonflies fly at night. Borneo is barmy." I agreed.

(To be continued)

BOOK REVIEW

The Moths and Butterflies of Great Britain and Ireland, Vol. 7 Part 1 edited by A. Maitland Emmet and the late John Heath. A4, pp.380, 24 coloured plates, 22 text figs and 83 maps. ISBN 0 946589 25 9. Harley Books, 1989. Price £49.50.

In the past I have advocated the advantages of photographic illustrations over those of paintings. The colour plates in this book have caused me to change my mind. My first impression was of them being photographic. They are not; they are superb draughtsmanship by Richard Lewington and the one thing that really gives them away is the regularity of the antennae and bodies. Compare them with, say, an early edition of "South" and it will be seen that the photographs of the butterflies there show the antennae and bodies to be irregular. The first volume in this monumental work, then under Curwen Press and not the present publisher, received some highly critical reviews on account of the poor quality of the plates. Ever since Harley Books took over, the quality has improved to the extent that it can hardly now be bettered.

One cannot have everything, but this book tries. Any stray butterfly that may have been recorded from time to time, however unlikely or impossible to have bred in our climate, is discussed and illustrated. This serves to draw attention to a number of tropical and United States species and will give any future unusual sighting a chance to be recognised and recorded, which in view of the ease with which they may now be imported, deliberately or accidentally, means that the numbers of such species being spotted in the wild is likely to rise.

In order adequately to record all the new material that has come to hand since the last *serious* book on the British butterflies published many years ago, this volume of the series has been split into two and this part contains only the butterflies, leaving the two moth families originally intended here to follow as a separate part. This does now mean that those (and there are many) who are interested only in butterflies are able to purchase a volume devoted solely to their interest.

The book opens with a tribute to the founder of the series, the late John Heath and this is followed by an extremely interesting and readable chapter by Maitland Emmet on the vernacular names and the early history of our butterflies. In the text that follows this theme is followed up for each of our resident species and in this respect the book breaks new ground.

Emmet's historical chapter is followed by the very relevant discussion, by Messrs Thomas and Morris, of the present-day controversy as to whether or not re-introductions should be made. This controversial subject well deserves an airing and whatever one's views on this very important subject, the point is made that detailed records should always be kept of any and every attempt.

For an edited book of multiple authorship the consistency is remarkable and the editors and publishers have clearly put a very great deal of work into the project and must be congratulated for their efforts. For the traditional British species a thorough description is given of adult, life-history and immature stages. The past and particularly the present distribution is discussed and the Biological Records Centre maps given. For the "adventitious" species the descriptive matter is much curtailed (otherwise the size of the book would have clearly got out of hand) and the authors have tracked down no end of stray captures from the past which have had no mention in previous butterfly books. A comprehensive reference list and a glossary complete the book.

Very useful is the printed checklist of names and it is encouraging to note that some old names have come back into use; such as *Pieris* again in place of *Artogeia*. Let us hope that for many years to come the names used in this authoritative book will be followed and used by all entomologists.

The book is of the usual very high standard of production that one expects from Messrs Harley Books and the one cavil to be made is not in this respect but in the choice of subject of several of the colour plates. Too many foreign species, all of which are available in a number of books dealing with exotics and which are all priced very considerably cheaper than this volume. While variation is discussed and a considerable number named, a few more illustrated would have been an asset, but then again

perhaps with the decline of our butterflies the number of variations to be seen are far fewer than they used to be and the intensive search for them that characterised some of our forebears seems to have passed, and with foreign travel now so freely available the interest and knowledge of these exotics no doubt now surpasses the interest in varieties and so the choice of examples on the plates therefore represent present interest. SAC

**BRITISH BUTTERFLY CONSERVATION SOCIETY
LONDON BRANCH**

*BUTTERFLY FESTIVAL — AT THE FIELD STUDIES CENTRE,
JUNIPER HALL, MICKLEHAM, DORKING, SURREY
7th and 8th JULY 1990*

Sponsored by British Gas and arranged in conjunction with the Field Studies Centre, London Branch of the British Butterfly Conservation Society will be holding its second Butterfly Festival at Juniper Hall, Mickleham, Dorking, Surrey on 7th and 8th July 1990.

Displays will feature conservation, biology, paintings, stamps, books and prints all related to butterflies.

Live exhibits will include both British and tropical butterflies and nectar and larval foodplants will be on sale, specially grown by Society members.

Experienced guides will take visitors to local butterfly habitats.

Each day there will be slide presentations on butterfly conservation.

Also on show will be the winning entries and runners-up of a Photographic Competition for 35mm Colour Slides of British Butterflies. (Entries must be in by 1st June.) Send SAE for copy of Rules and Entry Form to Dennis Newland, 27 Furze Lane, Purley, Surrey CR8 3EJ.

NATURAL HISTORY MUSEUM BOOK FAIR

from habitat

An event from 30th July — 7th August to promote and sell natural history books (both antiquarian and modern) and related subjects. Details from Priscilla Frost, Co-ordinator. Telephone 071-938 9123.

ENTOMOLOGY AND YOUNG PEOPLE

The ideas and aspirations of 125 young entomologists

by *Duncan Reavey and Margaret Simmons*

What are the young entomologists getting up to these days? Where do their interests lie? What are their priorities and what factors are important in shaping them? What do they think of the facilities and opportunities currently available to help these interests develop? — and what's wrong and what's right at the moment? And how do they see their entomology in the future?

In spring 1988 we did our best to find out. We approached the 233 people listed as Junior members of this Society in its 1987 Membership List, and 125 replied. The detail of the responses was impressive and the amount of data collected considerable. Only a brief summary is possible here. But what we can say is that the comments of everyone who replied have been passed on to the relevant people within the Society and outside. (We can provide a copy of the full results to anyone who is interested.) As far as we know, this is the largest and most wide-ranging survey of entomologists that has been carried out in this country (and probably anywhere).

The survey was generously funded by Shell Research Limited through a grant to the Society and has been adopted by the Society as a logical basis for the development of facilities for young entomologists.

1. Who replied?

125 individuals, 54% of those approached, replied. The respondents are broken down in Fig. 1 by age and sex. 57% of the respondents were under 18 years old (that is, current junior members) at the time of the survey; the remainder had been junior members at one time but at the time of the survey were 18 years old or more. Notice the sex ratio: only 8% of the under 18s were female, and 15% of the 18-24s. Perhaps the result is not surprising in view of the continuing type-casting of entomology as a male past-time, but it is a cause for concern all the same.

2. How did they first become interested in entomology?

The strongest influence (Fig. 2.) was school, mostly teachers (8 respondents) or projects (3). Close behind was family, with most influence from entomological fathers (7.5 respondents) — but entomological mothers (1), brothers (1) and grandfathers (1) also played their part and in one case non-entomological parents. Collecting in itself was the introduction to entomology for only 5% of young people.

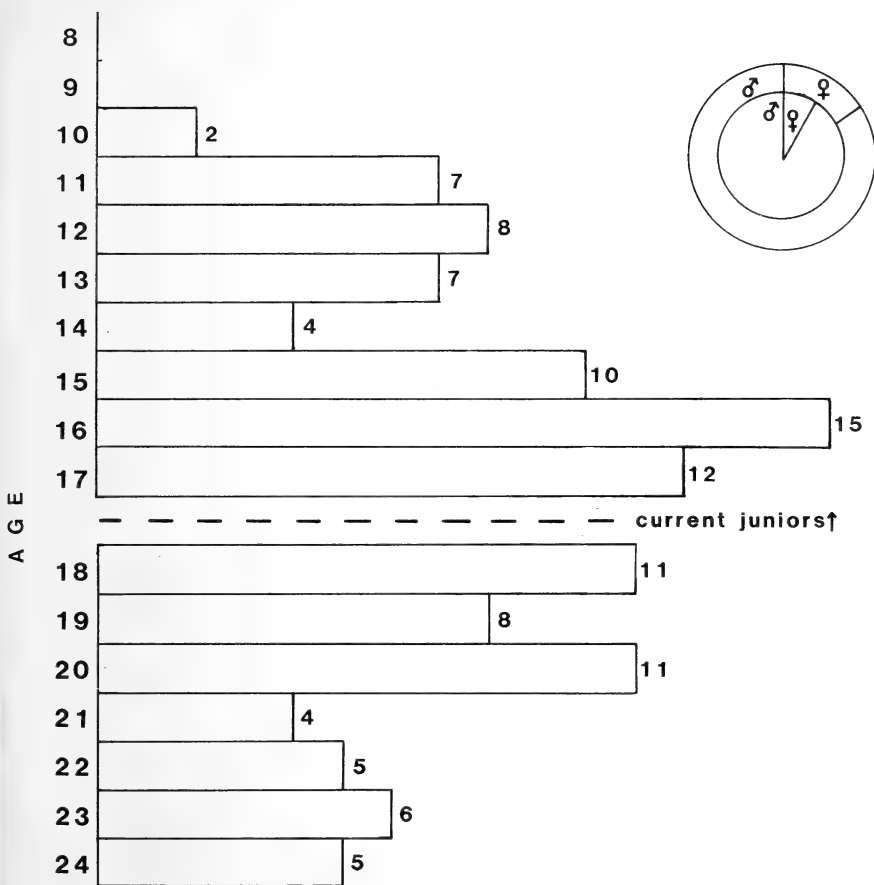


Fig. 1. Breakdown of respondents by age (bar chart) and by sex (pie chart). In the pie chart, the inner circle represents the proportions of males (♂) and females (♀) in the under 18 group, the outer ring the proportions in the 18-24s.

3. Their current interests

Greatest current interest among young people is in butterflies and macrolepidoptera, with stick insects and Coleoptera vying for third place, and Hymenoptera and Orthoptera a step behind (Fig. 3). Certain groups — especially Odonata, microlepidoptera, Diptera and Hemiptera — are rarely the first or second choice interest of the respondents, but figure strongly as a subsidiary interest.

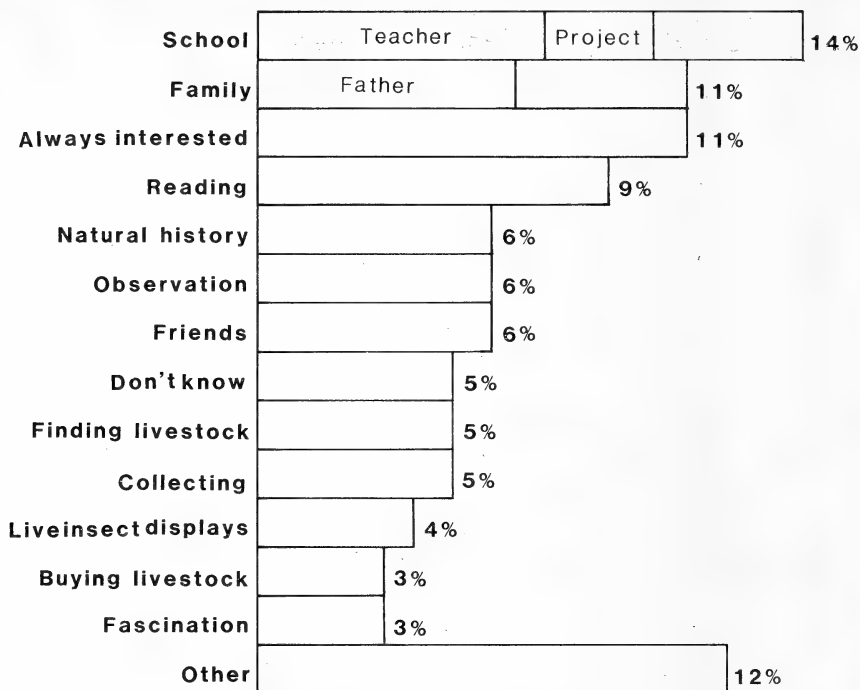


Fig. 2. Q: "How did you first become interested in entomology?"

"Other" includes seeing collections (2%), meeting an expert (2%) and drawing (2%).

4. Their methods of study

A revealing and important question. Nearly half the young people have breeding and rearing as their main entomological activity while about a quarter prefer collecting (Fig. 4). However, very many combine two or more different, complementary activities; and photography takes a prominent third place with nearly half the respondents using it as a method of study.

5. Insects from where?

No explanation necessary here, with the figures (Fig. 5) reflecting the increasing accessibility to tropical livestock and specimens via commercial suppliers and to European insects through continental holidays.

6. How important is insect conservation?

Admittedly a loaded question, provoking a range of responses from "quite" to "very", "incredibly" and "paramount". Because of its topicality, we include a full breakdown of opinion in Table 1.

Table 1. Q. "How important do you think insect conservation is?"

utmost importance, 1	site conservation very, individual insects
paramount, 3	less so, 1
vital, 6	not as important as other groups, 1
imperative, 1	important, but not taken to silly
crucial, 1	proportions, 1
incredibly, 1	important for aesthetic value, 1
extremely, 15	important even if species are detrimental
most, 1	to man, 1
very, 59	worth something even if only increasing
very for some species, 1	awareness, 1
quite, 4	unimportant, but good for aesthetically
fairly, 1	appealing species, 1
important, 1	depends on environment, 1
increasingly, 1	impossible to answer in this space, 1
as important as other groups, 6	and how long's a piece of string?, 1

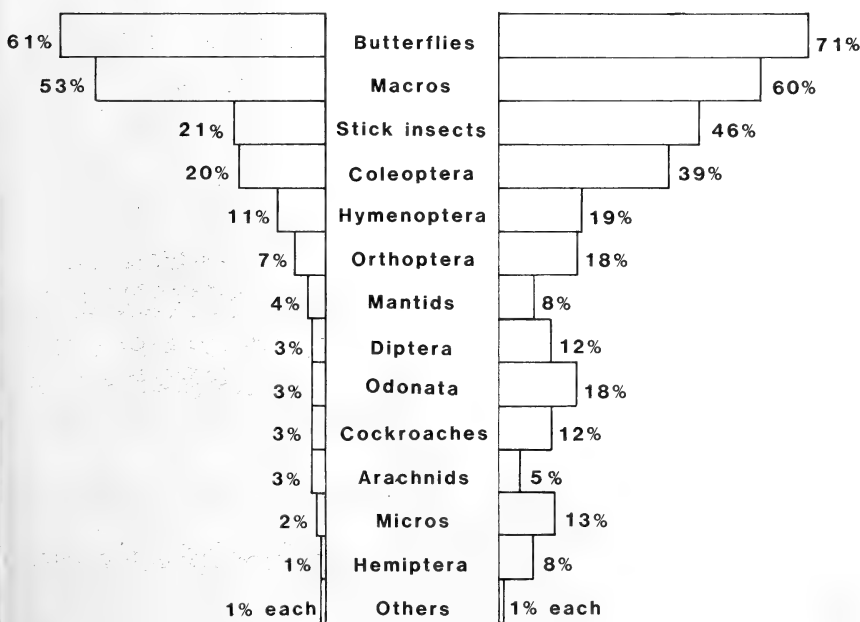


Fig. 3. Q. "Groups you're interested in now?"

The left-hand side represents the main interests of the young people. We include here the groups they ranked first or second in order of importance.

The right-hand side includes all the groups in which they are interested.

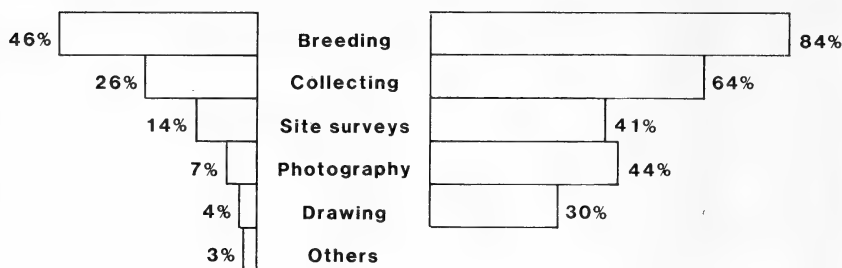


Fig. 4. Q. "Methods of study?"

The left-hand side represents the main method of study of the young people. We include here the method they ranked most important.

The right-hand side includes all the methods which they employ.

10% of respondents added "Observation" to the list of methods we suggested.

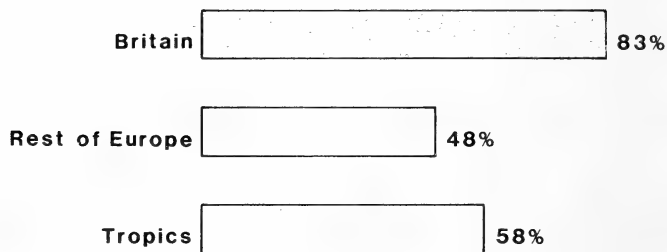


Fig. 5. Q: "Insects from where?"

7. Which societies are they in — and which are most important for developing their entomological interests?

This question drew all sorts of answers. In addition to those listed (Fig. 6) were a further six entomological societies and 22 other local, national and international natural history and conservation organisations — everything from the Carnivorous Plant Society to local bat groups and the Game Conservancy. There is of course an in-built bias to this question as regards membership of the AES since our source of addresses was the AES' own membership list.

8. Which factors are important in extending their interest in insects?

For this question we listed several possible factors — exhibitions, field guides, surveys and so on — which we thought young people could find useful in encouraging their interests. Preferences were spread fairly evenly across all the categories we listed, with the purchase of livestock the most important by a short head (Fig. 7). Exhibitions featured strongly despite the logistical and financial difficulties young people can face in reaching them. Talking to experts, the traditional way of extending an interest, was also important. (But experts are “rare”; if meeting a local expert is an important step forward, how many young people drop out of entomology because they don’t chance upon an expert at the right time?)

9. Which or these should be improved, and how? Any ideas for new activities?

These questions led to a set of suggestions which, when summarised, extend to six closely-typed pages. On the whole the preferences were for more of a stress in publications on conservation, breeding, non-lepidoptera, techniques and topical tips rather than collecting, Lepidoptera and articles on where-I-went-on-my-holidays; a reduction in trading in dead specimens (an unsolicited comment from 25 young people); more exhibitions/fairs; more field meetings; more field courses nationwide; insect conservation work meetings; and overseas expeditions.

While there were very many ideas, there were very few strong trends. While one or two people put forward a particular idea, the same idea wasn’t thought worth mentioning by the hundred or more respondents. In other words, there was no consensus for a particular way forward, and the vast majority of people are happy with things the way they are.

10. How long do they think they’ll stay with entomology as a hobby?

Most people thought they would be into entomology for a long time, well over half for life. The responses are given in Table 2.

11. Would they like it to become a career? If so, what sort of work?

The results (Figs. 8, 9) show the progression from a dreamy optimism to a resigned realism to a regretful “If only . . .”. This is summed up by one particular comment: “My teachers told me it was impossible — now I know it isn’t, it’s too late”. The advice for young entomologists hoping to follow their interests at college and university is sparse and hard to get at, and all too often based on “the grapevine” (if you’re lucky enough to meet the right people). There is a real need for something to appear in the mainstream of entomological bulletins as soon as possible.

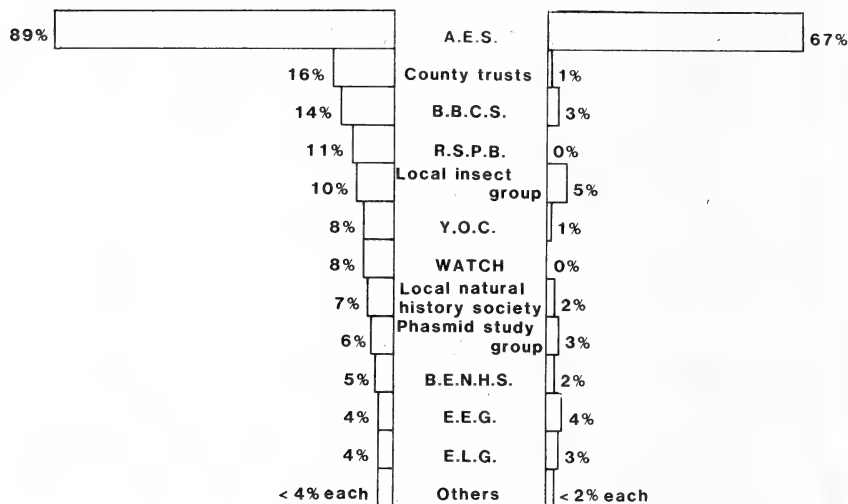


Fig. 6. Q: "Societies you're in? Which of these are most important for your entomology?" The left-hand side summarises the societies to which the young people belong. The right-hand side indicates the societies which the young people felt were the most important for their entomology.

Abbreviations: AES: Amateur Entomologists' Society; BBCS: British Butterfly Conservation Society RSPB: Royal Society for the Protection of Birds; YOC: Young Ornithologists' Club; BENHS: British Entomological and Natural History Society; EEG: Exotic Entomology Group; ELG: Entomological Livestock Group.

Table 2. "How long do you think you'll stay with entomology as a hobby?"

not very — 1 year	2	while it's a challenge	1
several years	2	quite a while	1
10 years	1	a long time	4
another 30 years or so	1	very long time	1
many years	1	as long as possible	9
till I'm 25 or older	1	indefinitely	6
till I lose interest	1	always	6
till I grow too old to chase butterflies	1	life	42
till I'm too busy for it	1	on and off for life	1
till end of university	1	for ever	11
till it becomes a career	2	until they box me up	1
		?	6

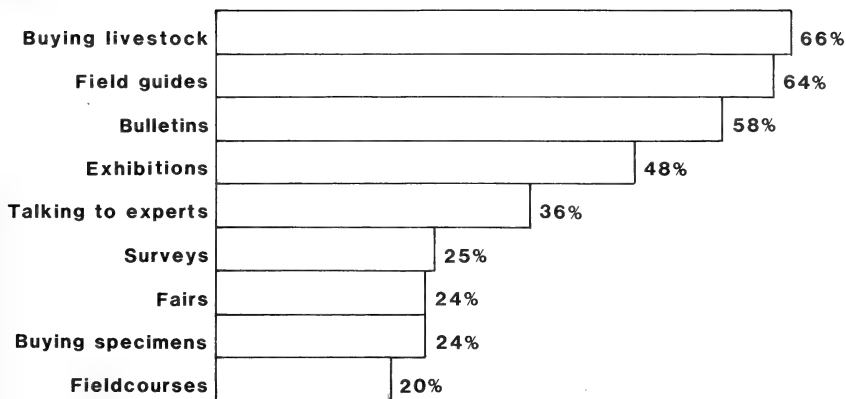


Fig. 7. Q: "Which of the following factors are most important in helping you develop your interests in insects?"

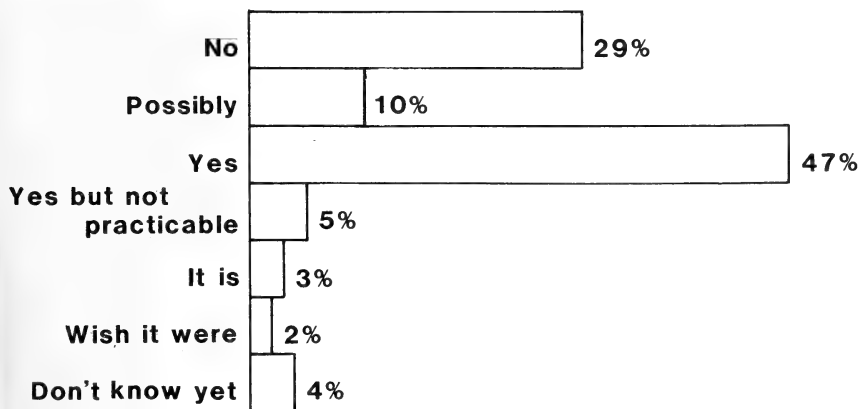


Fig. 8. Q: "Would you like entomology to become your career?"

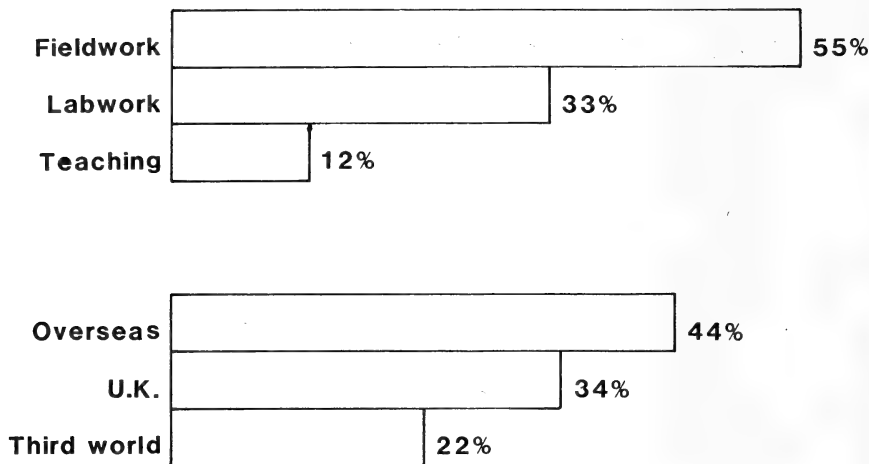


Fig. 9. Q: ;''If entomology became your career, what sort of work and where?''

12. *What does all this mean?*

It's tempting fate to suggest ways in which entomologists (not just this Society or its Council) should respond to these results.

One striking trend was that almost everyone asks for facilities — recording schemes, field courses, local groups and so on — that are in fact already available. One answer to this information problem is *A Directory for Entomologists*, published by this Society in 1989 and distributed free to all members. Please have a good look at this and realise that there's a lot going on that's relevant to your particular interests in your part of the country.

Another is for you yourself to do what you can to break down some of the walls between the many complementary and independent groups that exist: the stress should be on creating an awareness of what is available.

Such an enthusiastic response to this survey is itself a healthy sign. Whether or not the current generation of entomologists get it right for their young people, the next generation will certainly get its act together. Even now, things are beginning to move forward at a faster pace. "Organised" encouragement for young people is becoming more prominent as various entomological societies and young people's natural history organisations seem all to have seen the light at the same time and are beginning to work together. Combine the motivation, expertise and finance from these different sources and the result could, without any exaggeration, be revolutionary.

FURTHER RECORDS OF THE COMMA BUTTERFLY IN STAFFORDSHIRE

by Jan Koryszko (6089)

Since my last report (*Bulletin* 43: 149) the Comma butterfly (*Polygonia c-album*) has been reported occurring in new areas of the county; Hem Heath wood; Parkhall Country Park; Weston-sprink wood, where I saw one on an oak leaf on 25th July 1989. These recordings seem to show that this butterfly is becoming much more widespread in Staffordshire than it was in the past. Formerly it was quite scarce with only a few scattered records. I wonder if the hot summer of 1989 may not have produced even more new records from other entomologists in the country?

ABUNDANCE OF PEACOCKS IN STAFFORDSHIRE

by Jan Koryszko (6089)

On 24th July 1989 I visited Barlaston Rough Close Common and came across a small patch of thistles. To my surprise I found between 35 and 40 Peacock butterflies (*Inachis io*) feeding on them. I have never seen so many in such a small area before and seen feeding with them were a number of other butterflies. These were Small tortoiseshells (*Aglais urticae*), Large, Small and Green-veined whites (*Pieris brassicae*, *rapae*, *napi*), Small skippers (*Thymelicus sylvestris*), Small coppers (*Lycaena phlaeas*), Meadow browns (*Maniola jurtina*) (worn). The Peacocks were abundant in many areas of Staffordshire and perhaps the exceptional weather conditions were responsible for this.

ENJOYING THE BLUES

by Mike Fuller (6566)

No doubt in this exceptional season, many members have special or unusual observations to relate, but I wonder if the following can be matched. During my lunch hour on 2nd August I walked my transect of the Bratton Earthworks site in Wiltshire in calm, warm but not sunny weather. The numbers of butterflies seen was not exceptional, but on how many sites can six members of the Lycaenidae family be seen together? I saw the following during my half-hour walk; 11 Common blue, male and female; 4 Small copper, common this year throughout the county; 2 Small blue, one very tatty and one very fresh, probably one from each brood (a very small second brood is seen at this site in some years); 2 Brown argus, frequent in the south of the county; 7 male Chalkhill blue, not a good site for this species but a few are seen every year; 1 freshly emerged male Adonis blue, my first sighting of the second brood this year.

Later the same day, 5 Holly blue were seen at various localities in the south-west of the county — a species that for the last three years has been a rarity in Wiltshire, but which this year has become common and widespread in most areas.

What a difference some warmth and sunshine makes, and how refreshing to be able to enjoy some good “butterfly days” after the last three (or is it four?) depressing seasons.

THE COMMON WASP AND THE LAUREL BUSH

by A. J. Bainbridge (5652)

I was interested to read the note by Jan Koryszka in the June last issue (*Bulletin* 48: 110). I have frequently noticed over the years the close interest shown by wasps in the dense laurel bush which forms one of the boundaries of my garden. I observed that their interest focussed on the underside of the leaves and more particularly near to the stem. When I examined a laurel leaf under the microscope I could see a minute shallow recess, about 0.75 mm in diameter on each side of the main axis of the leaf and 0.5 - 1.0 mm from the base. These lacked the tough skin of the rest of the leaf and indeed seemed to have only a very thin membrane covering them. Probing with a pin served to release the sap of the leaf very readily. I concluded that the wasps had learned that this was an easy way to obtain drinking water in the hot weather. Whether other substances are present which the wasps need I cannot determine (I hardly think they can be getting hooked on cyanide!). Nor do I know what function the recesses perform for the plant.

A TRIP TO THE CENTRAL PYRENEES — JULY 1988

by Peter W. Cribb (2270)

Having found the western Pyrenees rather overcrowded in 1987, with many of the old localities designated as National Parks with prohibition on collecting, David Marshall and I decided to try the central ranges of the Pyrenees in 1988 and again used the Portsmouth-Caen ferry to transport my camping van and ourselves to France. We left on the 18th July and on our way south through the Dordogne we stopped off at the village of Monpazier, near Bergerac, to visit the cottage of David's friend, Paul Walsh. It is situated on the edge of a wood above a valley through which flows a small stream feeding a large fish pond. The area is limestone and the wood consists of oak, box, juniper, sloe, *Ruscus* and hedge maple. In residence was a conservation officer from the Midlands, on holiday with his wife and two children. We slept the night in the van on the edge of the wood where we spent some time catching female glow-worms, finding some in copula. The females subsequently laid eggs, little yellow spheres, but these dried up during our journeyings. In the morning we found the slopes and woodland rides full of butterflies, *B. circe*, *M. jurtina*, *A. hyperantus*, *M. galathea*, *L. sinapis*, *P. icarus*, *L. bellargus*, *O. venata* and *P. aegeria* of the southern orange form. We also found a male stag beetle and almost every scrubby bush of hawthorn and blackthorn on the slope had its webs of the larvae of *A. crataegi*. They seem to prefer the dwarf bushes. Buzzards flew overhead and there was a pair of Green sandpipers on the pond. During the night we had heard several nightjars calling in the valley below. This is certainly a delightful part of the Dordogne, still farmed in the peasant manner, so unlike the areas we had seen in the previous year, thick with sunflower and other arable crops. The next night we camped in the valley of the Pyrenees south of Bagnères de Bigorre.

The next morning we drove off early up the pass leading to the Pic du Midi de Bigorre, the highest pass in the Pyrenees, and stopped above the ski-ing village of La Mongie. Climbing up to the screes we found *Erebia lefebvrei* quite common but difficult to catch as they raced across the chaos of rocks. They seem to avoid the grassed areas and if the sun goes in they disappear into the rocks. Also here were a lot of *E. gorge* of the form *ramondi* with its very conspicuous eyespots. On the grassy slopes there were a few *E. epiphron*, the large Pyrenean race, *E. gorgone* which is only found in these mountains, and *E. hispana* form *rondoui*. There were also several *E. sthenno* skipping across the slopes, their flight being quite characteristic. Other species seen were *E. meolans*, *B. pales*, *V. atalanta*, *C. cardui*, *A. urticae*, *P. callidice*, *P. rapae*, *P. napae*, *P. brassicae*, *C. phicomone* and *C. croceus*. The sun was hot and we enjoyed a very busy morning. After lunch we dropped down to the valley

below at Artigues where *B. euphrosyne* was still on the wing, with *P. hippothoe*, *M. parthenoides*, *P. mnemosyne*, *P. icarus* and one *E. euryale* female. We slept the night above the recently constructed barrage at La Mongie.

The next morning we collected for a while on the slopes above the pass and then dropped down to the bottom of the pass where we found a female Scarlet tiger which laid David a lot of eggs. We then followed the trail of the recent Tour de France, in reverse, climbing the Col d'Aspin towards Bagnères de Luchon and then the Col de Peyresourde. From Luchon we entered onto an extremely fine pass leading into Spain. The frontier post on the French side and that on the Spanish side are divided by this pass which is quite heavily wooded and stops on the roadside produced *P. apollo*, *A. paphia* and many woodland species as well as *P. machaon* racing along the road itself. The road into Spain took us via Viella and Salaredia and here we took the side road to the Puerto de Beret, a fairly steep winding pass leading to a ski centre. We camped the night half way up the pass and experienced a very heavy thunderstorm which was very impressive to watch from the safety of our van.

In the morning, which broke with clear skies but misty in the valleys, we climbed up to the large car park below the ski pistes and leaving the van there we made our way up a valley down which a stream flowed from the scree above. The grassy slopes were thick with butterflies including *E. epiphron*, *L. maera* and *L. megera*, dozens of *C. phicomone*, *P. dorylas*, *C. semiargus*, a few *A. cardamines* and dozens of the small black Chimney sweeper moth. Over patches of scree there were a few *E. lefebvrei* and some male *E. gorgone* but as we climbed higher the numbers of *lefebvrei* increased until they were everywhere, flying with *E. gorge*. The area was almost totally scree with very little grass at all in the rock crevices. A few *P. mnemosyne* patrolled the slopes and odd specimens of *E. hispana* and surprisingly an occasional *A. crataegi*. The sun was very hot and we were continually attacked by hosts of tabanid flies which were also bothering some horses which grazed the slopes. We saw Black redstart, Wheatear, Grey wagtails, Ravens and Choughs and several Lesser kestrels which nest in colonies on the crags. The altitude was 2,000 m plus and as evening came a mist rose in the valley which blanked out the area below us and we had to make our way down by following the pylons supporting the ski-lift. In the valley there was a vast flock of sheep, led by some huge goats and tended by a single shepherd and his dogs. We had another storm that night but next morning, 24th July, after the mists had cleared we again ascended to the Macizo de Beret to photograph some of the *Erebias*. We enjoyed a sunny day again and that night there was a bright moon with the temperature falling quite dramatically.

The next day we decided to venture into the plain beyond the mountains and drove along the Val d'Aran via Port de Bonagua and Esterre d'Anea, following the valley of the River Noguera. By the roadside we stopped where there was a large puddle from the overnight rain and found a host of butterflies sipping at its edges — *P. machaon*, *C. australis* and *C. croceus*, *L. sinapis*, *G. cleopatra*, *T. acteon* and *T. sylvestris*, also a few male *H. comma*. Further on we came to a huge lake into which the river flowed, above the town of Tremp. Hundreds of large carp lay basking on the surface of the lake and we saw a flock of bee-eaters. It was now extremely hot and little was on the wing but beside the lake we recorded *P. tithonus*, *E. argiades*, *L. boeticus*, *N. ilicis*, and several *C. cardui* and *I. io*. After lunch we drove through Tremp and decided to get back into the mountains out of the heat. We took the road to Figuerola and then climbed up into the mountains on the way to Andorra camping for the night above a totally deserted valley. The slopes were covered with small pines and scented scrub and were alive with butterflies. Commonest were *H. semele*, *H. alcyone* and *B. circe* but also present were *A. arethusa*, *S. actaea*, *H. fagi*, *P. tithonus*, *L. sinapis*, *M. jurtina*, *L. idas* and *S. spini*. The last named was laying eggs on the twigs of a stunted bush of *Prunus mahabel*. In Var the food plant is a small-leaved *Rhamnus* sp. and larvae from there refused to feed on *Prunus*. Several *L. boeticus* were roosting on lavender bushes on the slope. We had our evening meal to the sound of the Alpine swifts which were patrolling the valley; their note is a pleasant one compared with the scream of the Common swift. This was a spot which will remain long in our memories for its sheer beauty and the sunset behind the mountains was spectacular.

Next day the sun continued to shine and we drove on towards Andorra. The road was scattered with butterflies basking in the morning sunshine — hundreds of *H. alcyone* and *H. semele* — while along the roadside flew *M. lachesis*, *M. aglaja* and the occasional *I. podalirius*. We entered Andorra and stopped at the first town of Sant Julia de Loria and found the house where our member Dr P. Roche lives, but he was away. The road through Andorra seems to run from one town to another with a succession of hotels, shops, petrol stations, cafés, etc. The traffic was constant — coaches, cars, motor-bikes and people everywhere. We stopped at a restaurant just outside Andorra, the capital, to have a beer and our lunch, with the turbulent river immediately below us. We saw a few *I. podalirius* floating by but obviously we had to get away from this main road. Outside the town we took a side road leading north to the village of Serrat and beyond the village we stopped and collected on the slopes above. Both *C. selene* and *C. euphrosyne* were present but no *P. eunomia* which is recorded from Andorra. Other fritillaries were *M. didyma*, *M. phoebe*, *M. parthenoides* and *B. daphne*. *C. arcania* and *C.*

pamphilus were flying together but no species was numerous. Driving further on we found that major works were being undertaken to widen the road and extend it on into the mountains. Blasting was taking place above us and we drove into a grassy valley above the mountain stream to camp for the night. Here in the evening sunshine we found *P. apollo*, *E. meolans*, and the same species recorded lower down the valley. Again specimens were few and far between.

I was able to catch a few grasshoppers in the net and after supper I walked down to the river where there was a deep pool below a waterfall, taking my rod. Using a grasshopper as bait, I dropped the line into the pool and almost immediately had a trout about eight inches long. It was now almost too dark to see but the next morning early I went down again with David and we had a further two, losing quite a large one. These we fried for breakfast. During the previous day I had somehow lost my watch, the strap having broken so we drove down to La Massana near the main road and bought a new watch each from an Indian gentleman who spoke very good English and had come from Bombay.

Being somewhat disappointed with the butterfly fauna, we decided to drive on and climbed the pass Port d'Envalera and then out of Andorra to meet the high pass of Col de Puymorens. Here we drove into dense mountain mist which was precipitating quite heavily. There was little traffic on our side of the road but coming up the pass the cars were two abreast and the queue stretched right down the pass almost to Aix les Thermes — many miles. Once away from the mountains, the weather cleared and driving via Tarascon we camped for the night on the road to Belmont sur Rance. The spot was high above the plain and from our vantage point we could not see a single light that night but again enjoyed a wonderful sunset.

In the morning we set off towards the Causses of the Massif Central, stopping briefly to exchange comments on French politics with a shepherdess of advanced years. Beyond Milleu we drove along the Gorges du Tarn to Le Rozier where once we had spent some happy days with Russell Bretherton and Ron Dyson. Tourism is very much in evidence but we were able to climb the Cap Luc on the south side of the River. Being later than our previous visit, we found very few species on the wing but present were *I. podalirius* which kept coming to a puddle, *C. croceus* and *C. australis*, *G. cleopatra*, *G. rhamnii*, *A. crataegi*, *L. sinapis*, *P. tithonus* and one *P. bathseba*, *A. arethusa* which was quite common on the path leading up to the Cap, *C. dorus*, *S. cordula*, *B. circe*, *L. coridon* and *P. icarus*. We saw a female Golden oriole and heard some males by the river. There were no larvae of *P. machaon* on the fennel growing on the slopes. On our previous visit there had been dozens in all stages of growth. However we did find several large webs of

the fritillary *M. phoebe*, on a fine-leaved species of knapweed and collected up one or two. After some beers at our old camping site, we drove on along the gorge to St Enemie and then climbed up the winding road to the Causse de Sauveterre above.

Here it was extremely hot and butterflies were coming to a damp patch by the road. There were occasional *P. apollo*, all the worse for wear, a few *M. russiae*, *C. briseis*, *B. circe*, *H. lycaon*, *P. dorylas*, *L. coridon*, *A. damon*, *P. escheri* and both *N. acaciae* and *S. spini*. Above Sauveterre we explored some remnants of stone circular buildings, similar to those on Dartmoor, some of which had been rebuilt by shepherds. On the limestone pavement there were clumps of lavender growing and each bush was smothered with butterflies. These included *B. hecate*, *F. niobe eris*, and most of the species seen earlier. We found a lark's nest with five eggs in it and saw quite a few lizards. Later we found a very pleasant camping place beside a pine plantation. There were quite a few massive wood ant nests there and the ants had made very visible walkways from the nests to their foraging areas.

In the surrounding grassland there were dozens of *Ascalaphus* sp. flying, neuropterans that hunt flies on the wing, also a lot of field crickets. I was able to catch some of these by finding their burrows and cutting out a divot behind the hole and to the right. The cricket then popped out of the hole into the waiting pill-box. Two in a box usually means a fat one later and the remnants of the other. The next morning we did further exploring and added *P. baton* and *C. pamphilus lyllus* to the score, plus some Bloody-nose beetles and the Great green bush cricket. There were also two species of Burnet present, *Z. carniolica* and *Z. filipendulae*. This is a very inhospitable area of the Massif, being mainly limestone pavement and only in the hollows where soil has accumulated is there any attempt at cultivation. These pockets of soil are used for raising vegetables and some grain.

We had had an invitation from our member, Gordon Trebilcock, to visit him at Vogue, south of Aubenas, where he was holidaying in a gîte by the River Ardeche. We drove via Mende to stop and collect in flowery meadows below Langogne where we found *H. virgaureae*, *P. hippothoe*, *P. argus*, *H. alciphron* and *T. lineola*. We found the village of Vogue with its very narrow streets and finally located the Grange where Gordon was staying with his wife. We spent a pleasant hour tasting the local wine and exchanging information before departing to camp for the night on the pass beyond Lagenterre. The next morning we drove over the Col de Meyrand and in the meadows below it we stopped to explore the area where on our visit with Russell and Ron we had found the slopes to be thick with *E. ottomana tardenota*. We appeared to be too late as we found none, there being very few species on the wing — *F. niobe eris* and *A. aglaja*, *L. phlaeas* and plenty of *M. jurtina* and *M. galathea*. In a pool by the small river David observed several young grass snakes catching

tadpoles while I tried the stream, unsuccessfully, for trout. We then drove back via Lagogne and crossed the River Loire on a high bridge.

There was a group of youths absailing from the bridge down to the river and we stopped to explore the river banks. Here there were lots of butterflies — *H. virgaureae*, *A. ilia*, *L. reducta*, *B. circe*, *H. alcyone*, *M. diamina* and *L. coridon* and others, flying among the flowers by the waterside or settling on the damp spots. A famous mountain in this area is Mt Mezenc and we made for this, only to be diverted into country lanes in an area of very heavy cultivation. Eventually we passed the foot of the mountain but the cultivated slopes did not look promising so we drove on into upland heathlands covered with fine grasses and heaths. Here there were hundreds of *P. argus*, a few *E. meolans*, *P. sertorius* and several Green foresters. David netted a female *P. machaon* which subsequently laid a lot of eggs on the flower head of wild carrot, *Daucus carotta*.

Our holiday was now coming to a close and we drove north, leaving the Massif via Le Puy, towards Vichy, to camp in a small wood near Arlanc. The wood belonged to a local peasant who was grazing three goats and four cows in the adjacent meadow. We shared a beer with him and he agreed we could stay the night. Owls woke us in the night with their hooting and early in the morning we heard the cry and saw the Great black woodpecker. The next day we continued north in hot sunshine and collected in oak woodlands along the way near Bourges. Here we found both ova and larvae of *L. camilla* in plenty on the honeysuckle growing round the coppiced hazel and found one ovum of *A. iris* and several groups of larvae of *A. levana* on nettles growing on the edge of the woodland. On the wing were *M. dryas*, *C. argiolus* and *L. sinapis*.

It is always a wonder to me how widespread the last species is in Europe but so restricted in Britain. We camped near Bourges and on the 1st August made the last leg of our trip, driving through very sandy and heathy land, heavily planted with pine, towards Vierzon. We tried roadside stops to explore but these produced very little in the way of butterflies and in the evening we camped near the village of Ferte St Cyr in the pine forest, driving up a forest track a short distance. The whole area was a fine white sand supporting *Erica cinerea*. There were hundreds of red- and blue-winged grasshoppers and I took a few male *H. tityrus* which were feeding on the heath flowers. At sunset we witnessed a massive storm to the south of us which fortunately did not reach us. The next day we arrived at Caen and were able to take an earlier boat than that booked, back to Portsmouth and home. We had covered some 2,000 miles and enjoyed good weather, terrain and company as well as seeing a very large number of species of butterflies, other insects and birds.

GLOSSARY OF ENGLISH NAMES (as given in Higgins & Riley)

<i>A. arethusa</i>	False grayling	<i>H. virgaurea</i>	Scarce copper
<i>A. cardamines</i>	Orange-tip	<i>I. io</i>	Peacock
<i>A. crataegi</i>	Black-veined white	<i>I. podalirius</i>	Scarce swallowtail
<i>A. damon</i>	Damon blue	<i>L. bellargus</i>	Adonis blue
<i>A. hyperantus</i>	Ringlet	<i>L. boeticus</i>	Long-tailed blue
<i>A. ilia</i>	Lesser purple emperor	<i>L. camilla</i>	White admiral
<i>A. iris</i>	Purple emperor	<i>L. coridon</i>	Chalk-hill blue
<i>A. levana</i>	Map butterfly	<i>L. idas</i>	Idas blue
<i>A. paphia</i>	Silver-washed fritillary	<i>L. maera</i>	Large wall brown
<i>A. urticae</i>	Small tortoiseshell	<i>L. megara</i>	Wall butterfly
<i>B. circe</i>	Great banded grayling	<i>L. phleas</i>	Small copper
<i>B. daphne</i>	Marbled fritillary	<i>L. reducta</i>	Southern white admiral
<i>B. hecate</i>	Twin-spot fritillary	<i>L. sinapis</i>	Wood white
<i>B. pales</i>	Shepherd's fritillary	<i>A. aglaja</i>	Dark green fritillary
<i>C. arcania</i>	Pearly heath	<i>M. diamina</i>	False heath fritillary
<i>C. argiolus</i>	Holly blue	<i>M. dryas</i>	Dryad
<i>C. australis</i>	Berger's clouded yellow	<i>M. galathea</i>	Marbled white
<i>C. briseis</i>	The hermit	<i>M. jurtina</i>	Meadow brown
<i>C. cardui</i>	Painted lady	<i>M. lachesis</i>	Pyrean marbled white
<i>C. croceus</i>	Clouded yellow	<i>M. parthenoides</i>	Meadow fritillary
<i>C. dorus</i>	Dusky heath	<i>M. phoebe</i>	Knapweed fritillary
<i>B. euphrosyne</i>	Pearl-bordered fritillary	<i>M. russiae</i>	Esper's marbled white
<i>C. pamphilus</i>	Small heath	<i>N. acaciae</i>	Sloe hairstreak
<i>C. phicomone</i>	Mountain clouded yellow	<i>N. ilicis</i>	Ilex hairstreak
<i>B. selene</i>	Small pearl-bordered fritillary	<i>O. venatus</i>	Large skipper
<i>C. semiargus</i>	Mazarine blue	<i>P. aegeria</i>	Speckled wood
<i>E. argiades</i>	Short-tailed blue	<i>P. apollo</i>	Apollo
<i>E. epiphron</i>	Mountain ringlet	<i>P. argus</i>	Silver-studded blue
<i>E. euryale</i>	Large ringlet	<i>P. bathseba</i>	Spanish gatekeeper
<i>E. gorge</i>	Silky ringlet	<i>P. baton</i>	Baton blue
<i>E. gorgone</i>	Gavarnie ringlet	<i>P. brassicae</i>	Large white
<i>E. hispania</i>	Spanish brassy ringlet	<i>P. callidice</i>	Peak white
<i>E. lefebvrei</i>	Lefebvre's ringlet	<i>P. dorylus</i>	Turquoise blue
<i>E. meolans</i>	Piedmont ringlet	<i>P. escheri</i>	Escher's blue
<i>E. ottomana</i>	Ottoman brassy ringlet	<i>P. eunomia</i>	Bog fritillary
<i>E. sthenyo</i>	False dewy ringlet	<i>P. hippothoe</i>	Purple-edged copper
<i>F. niobe</i>	Niobe fritillary	<i>P. icarus</i>	Common blue
<i>G. cleopatra</i>	The cleopatra	<i>P. machaon</i>	Swallowtail
<i>G. rhamni</i>	Brimstone	<i>P. mnemosyne</i>	Clouded apollo
<i>H. alciphron</i>	Purple-shot copper	<i>P. napi</i>	Green-veined white
<i>H. alcyone</i>	Rock grayling	<i>P. rapae</i>	Small white
<i>H. comma</i>	Silver-spotted skipper	<i>P. sertorius</i>	Red-underwing skipper
<i>H. didyma</i>	Spotted fritillary	<i>P. tithonus</i>	Gatekeeper
<i>H. fagi</i>	Tree grayling	<i>S. actaea</i>	Black satyr
<i>H. fidia</i>	Striped grayling	<i>S. cordula</i>	Satyr
<i>H. ityrus</i>	Sooty copper	<i>S. spini</i>	Lesser peacock moth
<i>H. lycaon</i>	Dusky meadow brown	<i>T. acteon</i>	Lulworth skipper
<i>H. semele</i>	Common grayling	<i>T. lineolus</i>	Essex skipper
<i>H. tityrus</i>	Sooty copper	<i>T. sylvestris</i>	Small skipper
		<i>V. atalanta</i>	Red admiral
		<i>Z. carniolica</i>	Carnolian burnet-
		<i>Z. filipendula</i>	6-spot burnet

INTERNATIONAL ENVIRONMENTAL LAW CENTRE

from habitat

Based at King's College, London is the first Centre for Environmental law aimed at using the legal system to protect the environment and stop damage through pollution and destruction of habitat. The Centre will take up cases, use legal action and advise generally in support of its aims. It has already under way three investigations and pending court cases on global warming, European Commission law and the Antarctic, and the protection of dolphins and other animals in the North Sea. Further details from Philippe Sands, Director. Telephone 071-376 8644.

NEW INSECT DISCOVERY

from habitat

A previously unknown species of insect has been discovered by scientists working on the Welsh Peatland Invertebrate Survey. The insect, a small winged fly, was discovered at Llyn Eiddwen, Ceredigion, but has not been named yet. In addition, after studying some 120 Welsh peatland sites, the Aberystwyth-based scientists have discovered six species of fly never previously recorded in Britain and over a hundred other species recorded for the first time in Wales, including beetles, flies, plant bugs and spiders. The NCC scientists are supported in their work by some 40 amateur and professional entomologists. The data collected is being used to study the distribution of rare and endangered species and, most importantly, to examine the best ways of managing peatland nature reserves.

BOOK REVIEW

from habitat

Dendroctonus micans in Britain — its biology and control. Edited by C. J. King and N. J. Fielding. Paperback 1989. 11pp. Price £3 plus 40p p&p.

The great European sprucebark beetle was first identified as a breeding species in Britain in 1982 and its distribution, pest status, biology, life cycle and control methods are described in this booklet. Infestation is characterised by scattered groups of attacked trees which display symptoms of resin bleeding and resin tubes upon their trunks. Although a predatory beetle, *Rhizophagus grandis*, has been used to control infestation, surveys over the last five years show that *D. micans* is gradually extending its range.

SPRING IN CENTRAL AND NORTH-WEST SPAIN 1989**Sightings relating to the abnormally dry and warm winter**

by Gareth King (8585)

Without doubt the driest winter in Spain since 1918 has had an effect on the emergence of erstwhile springtime Lepidoptera. For sure it did not rain at all in December here in Madrid and only three times in the whole of January. Central Spain had received a mere 50% of normal winter rainfalls up until the end of February. Galicia, normally the wettest province in Spain, has received 70% less rain than normal. Oviedo in Asturias in northern Spain has had its driest winter for 113 years. January, February and March have been characterised by long, sunny days with temperatures in the top twenties on some days. It was on such a day that my first Large tortoiseshell (*Nymphalis polychlorus*) was seen on 7th January in the Madrilenos equivalent of Wimbledon Common, Casa de Campo.

However, more surprising was the sighting of a Queen of Spain fritillary (*Issoria lathonia*) on 14th January in Cercedilla. Its identity was only confirmed on finding a dead specimen in the road. A further two *lathonia* were seen on a hot day on 19th February in El Pardo, 7km distant from Madrid. There were few flowers about and no possible foodplants were seen. (April-violets were discovered in the Sierra.— Ed. note.) According to Higgins and Riley this species hibernates in any stage; however, I would assume that the mild conditions prevailing during the winter had negated any necessity to hibernate and that these sightings were of freshly-emerged butterflies. The very same day I saw my very first Spanish peacock (*Inachis io*) along with a very early Small copper (*Lycaena phlaeas*).

As I write this (end of March), to date there has only been a couple of days of recognisable wintry weather. The last weekend in February saw some snow and strong winds. But this did not stop the finding of a Miller (*Acrionicta leporina*) near the flat. However, not to worry, mild weather soon returned and on 4th March in Guadalajara near the Río Henares I saw three further Large tortoiseshells and a single Comma.

Last winter in north-west Spain in early February I encountered several Red admiral (*Vanessa atalanta*) larvae. This year I found my first batch on patches of nettles barely out of the ground further back along the Río Henares in Alcalá de Henares. The very same day I saw a single Wall brown (*Lasiommata megera*), but even more surprising, three Sooty coppers (*Heodes tityrus*). Feeding from Almond blossom were two Hummingbird hawks (*Macroglossum stellatarum*), the first seen since November.

A trip due at Easter revealed a Galicia even more advanced than Central Spain. It appeared that the abnormally dry winter had not so far affected butterflies in a detrimental fashion. However, the number of out-of-season bush fires further east in Asturias can only be harmful.

Tuy, on the Portuguese frontier, produced three Red admirals, whilst over the Mino into Portugal several larvae were again discovered. Finding both larvae and imagines so early in the year, this year as well as last, would suggest that the species is very much continuously brooded here. In this area were seen very early examples of the Common blue (*Polyommatus icarus*) (20th March), further Small coppers, Green-veined whites (*Pieris napi*) and Clouded yellows (*Colias croceus*). My first of the latter were seen on 5th February in Plasencia, 200km west of Madrid.

A favourite site of mine in the southern-most part of Galicia is La Guardia. Here on 22nd March I saw my first Swallowtail (*Papilio machaon*) looking for somewhere to oviposit on the already well-developed fennel. Also seen were Clouded yellows including a very pale female and more of both *icarus* and *megea*.

A few days later I was back in Portugal — this time in Vila Nova Cerveira — a ferry ride across the Mino from Goián. The woods here are less disturbed than those of Galicia, there are far less intrusive Eucalyptus trees. Despite it being overcast, several specimens of *megea*, *croceus* and Painted lady (*Cynthia cardui*) were seen and a single example of a Wood white (*Leptidea sinapis*).

My stay in Galicia ended as it had started with some interesting sightings in Cangas de Morrazo. There were many Small heaths (*Coenonympha pamphilus*) seen in the vicinity of the cliffs, but most interestingly of all, a worn Scarce swallowtail (*Iphiclides podalirius feisthamelii*). Amongst the broom was seen a Green hairstreak (*Callophrys rubi*), an area I would have thought it common. As last spring, larvae of Marsh fritillary (*Eurodryas aurinia beckeri*) were located on honeysuckle not far from a coastal path. The resulting imagines of this southern European form are quite a lot larger and with more distinctive markings.

A note to end on, which may have a lot to do with the dry winter, has been the abundance of Pine processionary larvae (*Thaumetopoea pinivora*) on the pines of Central Spain. I have seen nests in the middle of Madrid, some blanketing the trees, as well as in the towns ringing the city. The moths emerge in May so it remains to be seen if an even greater infestation will result.

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BOOK REVIEW

Los Insectos y El Hombre — una aproximación a las plagas entomológicas by Carmela Francisco and Guerrero Rueda. Penthalon ediciones 1988. Price not given. (Chapter 4, pp.83-86). Translated by Gareth King with the kind permission of Penthalon ediciones.

There is a fascinating little book on the Spanish market called *Los Insectos y El Hombre* from which I have translated the following, concerning those insects which inhabit localities in closest physical proximity to man, in, on and around him. The following extract is from Chapter 4.

“Skin, hair and feather products are very difficult if not impossible to break down, but we deal here with two groups of insects which are able to do just that. “Clothes moths” of the family *Tineidae* and *dermestids*, which on occasion cause great damage to products of this nature.

Sometimes we give the name “clothes moths” to all small moths, but entomologically speaking they are *Tineids*. These moths, drab in colour, are about a centimetre in size. Some of the family develop on various other elements such as cereals, fresh fruit and preserved food, others are of no commercial importance whatsoever and live on ferns. It is the larvae only which damage products, the imagines do not feed.

The “clothes moths” found in our homes eat basically skin and feather products. Such articles are composed of keratin, a protein extremely resistant to chemical attack and for this reason indigestible, which makes it an inaccessible product for the majority of living things. How *Tineids* are actually able to use this substance has been of interest to entomologists and biochemists for many years and is still not completely understood. We know that the “stomach” of these insects is deficient in oxygen. The tracheal system (which transports oxygen) does not exist in this part of the body and presently we do not know how the insect’s body cells can possibly survive in such a state. Moreover, the conditions in the “stomach” are alkaline with a pH constantly above 12. This situation is unique in the animal kingdom, as the gastric juice in the stomach is invariably acidic. In this environment keratin is degraded and is able to be made use of.

The *Dermestids* are a small group of beetles, oval in shape with tiny feet and antennae. Generally they are dull in colour often with the body covered in hairs or coloured scales looking as if they are covered in dust. The larvae are easy to recognise, being very hairy, especially at the end of the abdomen which reminds one of a paint

brush. The larvae feed on skin, feathers, leather, dry meat and cheese etc whilst the adults prefer a diet of pollen. Often these insects are found outside the home in dens and nests of a variety of animal species.

Many *Dermestid* larvae, for example those of the genera *Dermestes* and *Attagenus* attack keratin and have similar digestive systems to the *Tineids* already described. Some *Dermestes* eat cheese and preserved meats, such as ham or bacon. The larvae of *Anthrenus verbasci* and *A. musaeorum* eat skin and wool and as well as attacking fabrics they also do damage to entomological collections and stuffed animal and bird exhibits. More usefully, the larvae are sometimes utilised by taxidermists to clean tissues off from skeletons. In order to protect insect display cases it is usual to use chemical such as nitrobenzine, an odiferous barrier which blocks out the smell of dead insects to which the beetles are attracted. However, nitrobenzine must be used with caution as it is carcinogenic and can cause hair and teeth to fall out in specific circumstances. As the larvae are very sensitive to sunlight, a far safer precautionary measure, at least with carpets etc is to expose susceptible objects to daylight.”

Gareth King

ABUNDANCE OF HOLLY BLUE AT FOLKESTONE

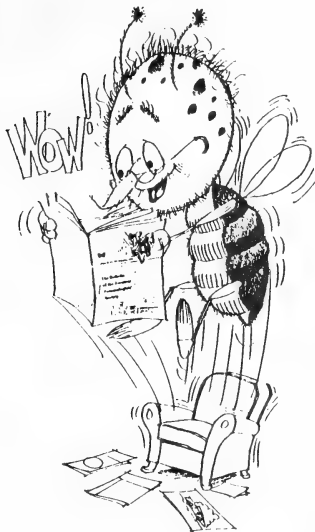
by W. E. Jones (7535)

Although the year 1989 will no doubt be remembered as a “good” year for butterflies, the most extraordinary proliferation of the Holly blue (*Celastrina argiolus*) at least in my area of south-east Kent must surely be more than a little unusual. A few are seen in most years in spring and early summer but I have seen as many as three at once in my suburban garden this year and I have never before spotted them, not on isolated occasions but regularly among the traffic and pedestrians on my ten minute walk to work in the mornings. Certainly 1989 will be “the year of the Holly blue” for me.

I have made three recent visits to a local site for the Adonis blue but sadly have yet to record this lovely butterfly this year. Perhaps I have just been unlucky with my timing. Certainly the foodplant horse-shoe vetch is still well in evidence.

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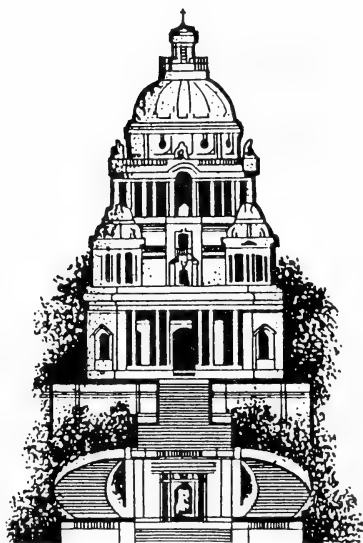
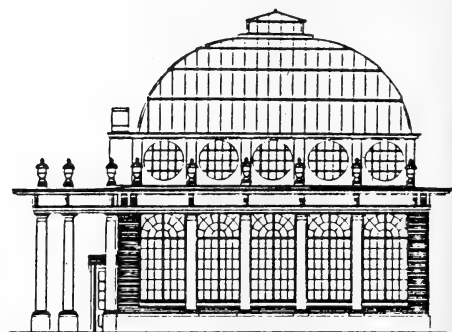
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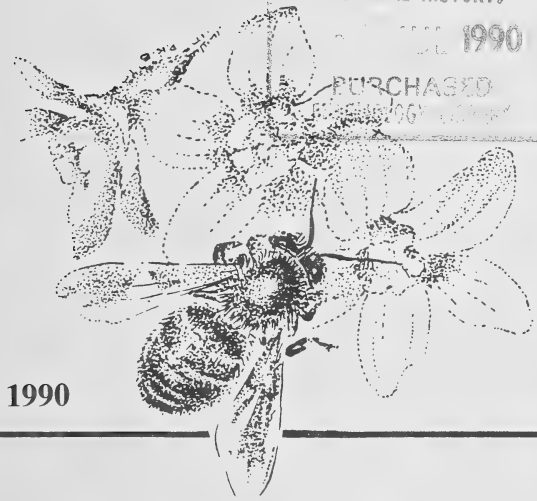
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Volume 49, No. 370, June 1990

The Bulletin of the Amateur Entomologists' Society

EDITOR
BRIAN O. C. GARDINER, F.L.S., F.R.E.S.

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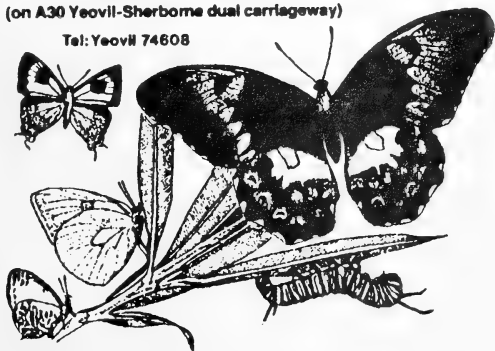
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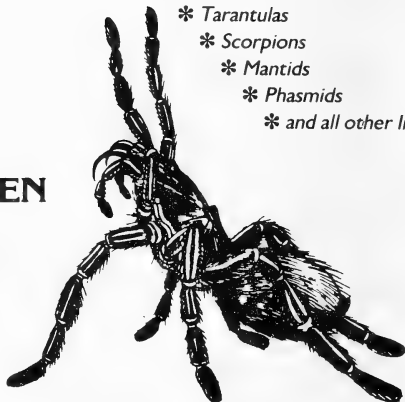
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AES BULLETIN

No. 370



REGISTRAR'S CHANGE OF ADDRESS

Will Members please note that our Registrar, Mrs Nancy Cribb, and our General Editor, Peter Cribb, have **MOVED** and their address is now **22 SALISBURY ROAD, FELTHAM, MIDDLESEX TW13 5DP**. On reading this, members are asked to emend their records, whether they keep them in memory, on a database, address book or back of an old envelope.

These two officers of the Society are written to more often than any of the other officers and they have served the Society so well over very many years that their previous address has become "fixed" in many a memory. By making a note of and using their new address from now on, possible delays and losses in postal transit can be avoided, for however good the PO may be at re-delivery, it has to be paid for, cannot go on indefinitely, and delays and misplacement can always be expected.

ECDYSIS

We have received the first issues of this new magazine. Consisting of a few printed pages A4 size, it is mainly in English (even if a little stilted and with some curious spellings!) with some French and a little German. It is aimed primarily at those interested in rearing insects and is setting out to become the ideal European medium for amateur entomologists to advertise and exchange their surpluses and state their wants. This service is free to subscribers. It has the advantage over our own W & E list, the EEG (or even the more extensive ELG lists) in that it has a European coverage and I notice a number of species advertised that I have not seen in Great Britain. It is to be monthly and the subscription price for 12 issues is 10 Ecu. (Since Mrs. T. has kept us out of the EMU., members should consult their Banks or Financial advisers as to what this is in English pounds!). Details from Noel Mal, 16 rue des Damzelles, B-6001, Marcinelle, Belgium.

JEALOTT'S HILL PHOTOGRAPHIC COMPETITION

Here's *your* chance to win £50.

The AES, in conjunction with ICI Agrochemicals at Jealott's Hill Research Station at Bracknell in Berkshire, is once again running a photographic competition.

This year the council has decided that the theme should be an open one to enable members to make their own choice of entries. There are two sections in the competition, one for Junior members and one for Ordinary members with a £50 prize or the equivalent amount in books and a chance to visit Jealott's Hill Research Station going to the winner of each section.

All entries, in the form of monochrome or colour prints, should be sent to the competition organiser, Terence Knight, at 46 Swinburne Avenue, Hitchin, Herts SG5 2RL, to arrive no later than 31st August. They will be exhibited at this year's AES Annual Exhibition at Kempton Park in October.

CORRIB CONSERVATION CENTRE

This centre, situated on the shores of Lough Corrib, Co. Galway, holds various courses designed to promote wildlife conservation through environmental education and field studies. Their aim is to foster an understanding of the natural environment and to help visitors to develop a "sense of nature" in a relaxed, but serious atmosphere. Both "beginners" and "professionals" are welcome; both are catered for. In addition to educational programmes, they are undertaking an inventory of the flora and fauna of the region. Full details are available by phoning 091-82519 or writing to Tony Whilde, Corrib Conservation Centre, Ardnasillagh, Oughterard, Co. Galway, Ireland.

SAVE PEATLANDS

from habitat

Dr David Bellamy, President of Plantlife, has begun a drive to secure government action to save peatlands by asking Malcolm Rifkind, Secretary of State for Scotland, to intervene in the Highland Regional Council's proposals to dig up an area of the unique Flow Country for horticultural and garden peat. English Environment Secretary, Chris Patten, has also been urged to protect those few lowland peatlands — some Sites of Special Scientific Interest — which have escaped destruction, by revoking old mineral extraction rights. Twelve organisations, including the World Wide Fund for Nature UK, have expressed their support for the conservation of peatlands.

REPORT ON, AND EXHIBITORS AT, THE 1989 EXHIBITION

by Roy McCormick (3375)

Our second Exhibition at this venue was a cold, grey and blustery day, when the queue started to form, and as the entrance was near to the Tattersalls Bar stairs, it was decided to allow the people to shelter in this area until opening time at 11 am. Numbers were down considerably with only around 1,000 paying the entrance fee.

As is usual for this event now, 59 dealers attended along with nine AES Groups and other Natural History Societies. Legislation has been on the increase for many years now and for this event traders had to have permits or sign a declaration before they could put many species on display.

The individual members' exhibits were in the same prominent place as last year along with Mr Berman's double menagerie from St Ivo School. Exhibits were only 33 in number with the usual hard core of members putting on displays; those that I did see were of excellent quality but considering that 1989 was the hottest, driest year for 300 years, I would have thought more exhibits could have been produced. My own experience of light-trapping in the field produced increased numbers of records.

Our president, Alan Stubbs, gave a talk on Nature Conservation in the Special Events room.

I would like to thank all the members who gave their free time to help with setting up the previous day, and assistance on the day, for without this valuable free labour the job of Exhibition Organiser would be an impossible one.

A list of exhibitors follows:—

PETER BAKER (8640). Two drawers showing a selection of Hawks and larger moths taken during the dry season — October to March — at two sites near Lagos, Nigeria.

J. M. CHALMERS-HUNT (1683). British Microlepidoptera including a short series of *Cydia medicaginis* Kuznetsov taken from Grays, Essex. A pale ab. of *Celypha striana* D. & S. taken at West Wickham, Kent, and three forms of *Pediasia contaminana* Hb. taken from Portland, Dorset and Sizewell, Suffolk.

GRAHAM COLLINS, ROGER NORRIS & ROGER HAWKINS. On behalf of Croydon Natural History Society, Surrey: insect recording showing the role of CNHSS, comprising an introduction to the various schemes being run, and distribution maps for certain species of Lepidoptera, Syrphid and Ladybird showing the patterns which are emerging.

DAVID COPESTAKE (8471). A selection of Cibachrome prints of beetles and hoverflies taken in 1989. A display of British beetles found recently, many of

them rare or very rare, mainly from Windsor, S. Wales and Swyncombe Downs, Oxon, a previously unrecorded site; also a display of exotic beetles from all over the world.

PETER CRIBB (2270). Examples of some of the butterfly species taken during a trip to Serrania-de-Cuenca, Montes Universales and an area south-west of Toledo during the last two weeks of May, 1989. *Araschnia levana* bred from larvae collected in N. France. *S. sertorius* which are dubious and could be two species; one of these was smaller and had a pale underside and could be *S. phlomidis*, and finally *Euchloe* group which again is difficult to identify; two species appeared to be flying in the area visited, one of these was probably *E. ausonia*.

C. J. GARDINER (5249). Notable Lepidoptera taken at light from the N.E. of England in 1989, including new county records and species at their northern limit in Britain; notably *Apamea scolopacina* and *Nola cucullatella*.

N. HALL (7859). Moths on the British list captured abroad including *T. emortualis* D. & S. Olive Crescent, *D. oo* L., Heart moth, *L. coenosa* Hb., Reed tussock, *C. salicalis* D. & S., Lesser belle and *H. dysodea* D. & S., Small ranunculus. Also displayed were bred species from English and Continental localities, the more notable of these being *B. crini pancratii* Cyrillo, Kew arches from France, *A. l-nigrum* Mueller, Black V-moth with notes on breeding and *C. cinctaria* D. & S. Ringed carpet from Dorset.

A. HALSTEAD (6346). A display of some Sawflies which are distinctive and easily identified by the damage they cause or their association with certain host plants; fifteen species were exhibited which included *N. saltuum*, Social pear sawfly, *P. pallipes*, Violet sawfly, *P. aterrima*, Solomons seal sawfly, *H. testudinae*, Apple sawfly and *P. geniculate*, Mountain ash sawfly. Examples of the damage caused by the larvae were also shown.

PETER J. HODGE (5335). Coleoptera and Heteroptera taken in the last three years; 40 species of Coleoptera with 13 new vice-County records and two species of Heteroptera with two new vice-County records were shown. Included amongst the Coleoptera were *L. rugosa* Steph. from Lewes, E. Sussex, *A. sabulati* Panz. from Woolbeding, W. Sussex, *M. erichsoni* Bris. from Lewes, E. Sussex, *S. latus* Redten. from Lewes, E. Sussex and *C. rapae* Gyll. from Meare Heath, Somerset. The two Heteroptera were *P. seladonicus* Fall. from Eastbourne, E. Sussex and *C. wagneri* Remane from Shapwick, N. Somerset.

RALPH HOPPER (4848). Various natural history subjects displayed by the Mid-Devon Natural History Society. Thirty of their members attended the exhibition.

VICTOR HOWARD (3871). Three display cases showing Syrphids, Brachysera, Cyclorrhopha and also Neuroptera.

GUY KNIGHT (8040J). Photographs and observations on the rebuilding of a nest of *Vespula vulgaris*, which was dug out of a compost heap. Specimens of solitary bees, wasps, hoverflies and larger Brachycera collected this year; also a solitary bee's nest in a piece of wood split open to show cells, plus photographs of this nest.

B. J. MACNULTY (4528). Microlepidoptera from the Gower Peninsular.

ROBERT MANVELL (7261). Photographs of British Macrolepidoptera.

R. F. McCORMICK (3375) and C. C. PENNEY (3880). Lepidoptera taken during a holiday in Norfolk this year. Eighteen species were shown, the most interesting of these being *E. pygmaeola pygmaeola* Doubl., Pigmy footman from the coast. *X. biriviata* Borkh, Balsam carpet, from the cottage trap, the only specimen seen; *P. brevilinea* Fenn, Fenn's wainscot, from all the fens they visited as well as cottage traps and *C. haworthii* Curt., Haworth's minor from Barton Turf.

STEVEN NASH (7088). Macrolepidoptera taken from Fernham, Oxon, showing mostly migrants which included *X. exsoleta* L., *S. exigua* Hb., *O. obstipata* Fabr., *R. sacraria* L., of which ten were seen, *M. stellatarum* L., a halved gynandromorph of *L. populi* L. and two aberrations of *A. gamma* L.

DENNIS O'KEEFFE (8476). A display case of Microlepidoptera.

DAVID ORAM (7127). Some insects from the Falkland Islands; included in the exhibit were *Alophophisu occidentalis* (Noctuidae), and *Parudenus falklandicus* (Ichneumon fly). Only about 160 species of insect have been found in the Falklands which is minute compared to Britain.

JOHN PAYNE (5293). Aberrations of British butterflies showing Red admiral, *V. atalanta* L. ab. *fracta* Tutt, Orange tip, *A. cardamines* L. type specimens for comparison, and Small tortoiseshell, *A. urticae* L. a selection from temperature experiments.

A. C. & C. T. PICKLES (5225). British Macrolepidoptera from various localities the more interesting of these being *C. linearia* Hb., Clay triple lines ab. *fasciata* Prout, from Lyndhurst, Hants., *M. furuncula* D. & S., Cloaked minor ab. *vinctuncula* Hübner from Lymington, Hants, *E. venustula* Hb., Rosy marbled, believed to be the first New Forest Specimen, *C. miata* L., Autumn green carpet, bred from a female collected in Newtonmore, Scotland, *P. pulveraria* L., Barred umber from Winchester, Hants. Second brood examples of this usually single brooded moth, and *A. melanopa* Thunb., Broad-bordered white underwing, found resting on the ground between snow flurries at Aviemore, Scotland.

ANDREW RAWLINS. A small drawer of S. American *Actinotes* including unidentified species and some day flying moths.

RICHARD REVELS (3942). A display of photographs of insects.

P. J. C. RUSSELL (8977). Rhopalocera from Vancouver Island, British Columbia, Canada (Western Nearctic region). Forty-six specimens taken on Vancouver Island were shown with some of their European relatives in four cases. The first one showed examples of species which are common to both western Nearctic and Palaearctic regions, the second contained examples of Vancouver Island species with closely related European ones of the same genus that have very similar foodplants and occupy the same ecological niches. In the third were species from the Island that had European counterparts which were not closely related but had similar foodplants and habitats. The fourth case exhibited species found only on Vancouver Island that did not have similar species in equivalent habitats in the western Palaearctic regions.

MALCOLM SIMPSON (4859). Aberrations of British butterflies showing extreme examples of *I. io*, *A. paphia*, *V. atalanta*, *P. c-album* and *P. aegeria*, all from the collection of Colin Drage and Malcolm Simpson.

BERNARD SKINNER (2470). Macrolepidoptera taken or bred during 1989 including *E. atomaria* L., a melanic series from S.W. Yorks, *M. furuncula* D. & S. specimens of the unicolorous form from the Dingle Peninsular, Co. Kerry, *T. fimbrialis* Scop. Bred series from wild larvae found at Dungeness, Kent. *E. paleacea* Esp. from Broxbourne Woods, Herts, *H. viriplaca* Hufn., two specimens from Tilshead, Wilts, *M. abruptaria* Thunb. melanic and intermediates bred from a female taken at Nunhead, S.E. London, *C. cinctaria* D. & S. A series bred from wild larvae found in Merionethshire. *H. armigera* Hb. A series bred ex-female from Eastbourne, Sussex, *X. agathina* Dup. A short series of ab. *scopariae* Mill. from S.W. Yorks, *C. haworthii* Curt. ab. *hibernica* Steph. from Curracloe, Co. Wexford and *M. procellata* D. & S. ab. *nigrapicata* Cockayne from Snodland, Kent.

I. F. STACEY (7653). Set undersides of aberrations of the Ringlet, *A. hyperantus* with a type pair for comparison. These were two male *arete* Muller from Wiltshire, two female *parvipunctata* Castle Russell, two pairs of *lanceolata* Shipp. and a pair of *chrysophaleros* Collier; most of these were from the J. H. Payne collection.

ANTONY STEEL (4106). A showcase of British butterfly aberrations.

DAVID STOKES (7630). A series of bred Peacock, *I. io* ranging from ab. *semiocellata* Frowhawk to ab. *belisaria* Oberthus. The pupae of these specimens were subjected to extreme temperature shock.

DAVID VEEVERS (8910J). Varied orders including Crickets, Cockroaches, Millipedes, Stick insects, Hermit crabs, Snails, pictures and specimen boxes.

J. W. WARE (4791). A survey of the Macrolepidoptera of Northamptonshire shown in a display drawer.

PAUL WARING (4220). British Macrolepidoptera. A series of photographs showing the progress of the work on the protected moths including the outdoor breeding cages used for captive rearing projects. Also shown were photographs of damage to potential sites for the Essex emerald moth *T. smaragdaria* Fabr. caused by sea-wall construction, maintenance and fires.

Photographs taken on the two field meetings of the BENHS at Woodwalton Fen in June 1989 were also shown.

Foreign Macrolepidoptera. A collection of moths recorded in Northern Spain between 23rd August and 5th September 1989. Of particular interest were the migrant White-speck wainscot, *M. unipuncta* Haw., the Dotted carpet, *A. jubata* Thunb. and *O. aurolimbata*. Other species, sometimes recorded as migrants to Britain including *M. albipuncta* D. & S., *M. vitellina* Hb., *D. algira* L., *R. sacraria* L., and former British residents *T. atriplicis* L. and *A. crassa* Hb.

M. C. WHITE (6003). A display case of British Macrolepidoptera.

DAVID YOUNG (5547). Macrolepidoptera taken from various localities including *O. luteolata* L., Brimstone moth ab. *ruficosta* from Salcea Forest and a very pale form from Woodwalton fen; *M. l-album* L., L-album wainscot, a

possible migrant from Dungeness, Kent, plus two specimens from the residential site at Portland, Dorset. *H. maritima warneckei* Boursin, Shoulder-striped clover bred from larvae swept from heather at Chobham Common; *M. unipuncta* Haw., White-speck wainscot, a migrant from Studlands, Dorset, *X. gilvago* D. & S. Dusky-lemon swallow, an unusual form taken at Dungeness, Kent. *P. consonaria* Hb., Square-spot, a nearly *f. nigra* from Ham Street, Kent exhibited with more normal forms from Berks and Oxon. *S. fagi* L., Lobster moth, examples of the melanic *f. obscura*; *I. degeneraria* Hb., Portland ribbon wave from Portland, Dorset; a late recording taken on 12.9.89. Also shown were typical and ab. *coronula* of *C. ligustri* plus a few space fillers.

The compiler of these notes is not responsible for errors or claims made by the exhibitors. However, an effort has been made to be as accurate as possible.

ATLAS OF GWYNEDD BUTTERFLIES

The Gwynedd branch of the British Butterfly Conservation Society is preparing an atlas of the butterflies of Gwynedd (Anglesey, Carnarfonshire and Merioneth). We would appreciate receiving copies of butterfly records from the area. We would like the species, date and location, as precisely as possible (map reference if available is a useful addition!). Any additional observations on abundance of species in particular areas or years would of course be welcome. Although we would be pleased to receive any records, even of common species from any part of Gwynedd, we are particularly short of records from the old county of Merioneth. We know of a number of reintroduction attempts in Gwynedd and would be delighted to hear of others, whether successful or not. We will acknowledge all records used in the subsequent publication.

Records should be sent to the Secretary of the Gwynedd branch, Mrs Lynne Harrison, 19 Gwêl Eryri, Llandegfan, Anglesey LL59 5PY or the Chairman, Dr Paul Whalley, Ger y Llan, Llangeinwen, Dwyran, Anglesey, Gwynedd LL61 6RP.

THE MANAGEMENT AND WELFARE OF INVERTEBRATES IN CAPTIVITY

In *Bulletin* 48: 93-97, we gave an account of the very interesting conference that was held on this subject. Members might now like to know that the proceedings of this meeting have now been published and are available for £9 (post free, and there is a £3 reduction for Federation members) from The National Federation of Zoological Gardens, Zoological Gardens, Regent's Park, London NW1 4RY.

SOMERSET MOTHS

by Ray Barnett

In February 1990, the first meeting of the Somerset Moth Group took place. The primary aims of the Group are to collect together all records of moths from Somerset from 1980 onwards and to actively investigate the distribution and status of species in the county.

A.H. Turner published a list of the lepidoptera of Somerset in 1960 (Copies still available from the Somerset Archaeological Society, Taunton Castle Museum). Since then the moth fauna has undoubtedly changed and so has the county. In 1974 a considerable section of Somerset was incorporated into the new county of Avon. For the present The Somerset Moth Group are concerning themselves with the present day county. If you have any records which you would care to send to the Group, or would like details of their activities please contact Ian Bolt, 3 Ardwyn, Wellington, Somerset TA21 8BW. The records will be processed by the Somerset Environmental Records Centre.

For the section of Somerset now in Avon, please send records to myself at the City Museum & Art Gallery, Queen's Road, Bristol BS8 1RL.

A NOTE FROM IRELAND

by David Norris (9175)

Where I live, Tralee, Co. Kerry, I find the area very poor in number of species, although some of these may be very abundant. I usually see every summer swarms of Green-veined whites (*Pieris napi*), Large whites (*P. brassicae*), Small tortoiseshells (*Aglais urticae*) and Speckled woods (*Pararge aegeria*). There are a few Orange-tips (*Anthocaris cardamines*) and Red admirals (*Vanessa atalanta*), lots of Meadow browns (*Maniola jurtina*). Some other species I have caught, and in my experience they are not very common, are Common blue (*Polyommatus icarus*), Small copper (*Lycaena phlaeas*), Wall butterfly (*Lasiommata megera*).

The commonest moths in Tralee are White ermine (*Spilosoma lubricipeda*), Magpie (*Abraxas grossulariata*), Yellow underwings (*Noctua pronuba*), 6-spot burnet (*Zygaena filipendulae*), Silver Y (*Plusia gamma*). In all I have recorded just over a hundred species of moth. This, with the 15 species of butterfly, compares very unfavourably with the Burren in Co. Clare, where one can catch some 35 species of butterfly and many more moths. I suspect there are parts of Britain which lack species common at Tralee, but on the other hand I understand Brimstones (*Gonepteryx rhamni*) are common around London, but this is a rare species in Ireland.

A HISTORY OF THE AES ANNUAL EXHIBITION

by Roy F. McMormick (3755)

Since the birth of the AES in August 1935, the Society has gone from strength to strength. The same can be said of our Exhibitions although quite a few of these have been plagued by apathy on the part of the members who failed to produce many exhibits for these events.

Our very first was held at Buckingham Gate Central School, London SW1, on 25th March, 1939. The *Bulletin* did not report the event, but both *The Entomologist* and the *Entomologist's Record* carried a note about the meeting. *The Entomologist*, page 149, vol. 72, 1939, recorded a display of apparatus and collecting methods which was an unqualified success; 150 members and friends attended and exhibits were of a varied nature although Lepidoptera predominated among both live and dead specimens. A great variety of equipment was shown along with some unusual pieces of Coleoptera collecting apparatus kindly loaned by the British Museum, and Rothamsted Experimental Station exhibited a light trap. An interesting aquatic display along with a considerable library of popular reference works were exhibited. Also shown was a simple device that could be fitted to an ordinary camera to photograph insects. Demonstrations of many types of collecting and preserving methods were conducted and watched with much interest. The article was written by Dr D. H. Sterling, Hon. Secretary.

The report in the *Entomologist's Record*, page 80, vol. 51, 1939, was written by D. H. Stirling (*sic!*) and was a shorter version of the note in *The Entomologist*. (The difference in the two spellings of the author of these reports was as shown in the relevant publications.)

The Society practically had to close down its activities during the next few years, 1940 to 1944, because of a certain moustached chap who ran the Third Reich, but we managed to win through and I suppose because the 1939 Exhibition was such a success it was decided to do it again. A certain Corporal Classey (you know him!), was chosen to organise the event and it was held at the same venue as in 1939, on Saturday 5th May 1945, from 2 pm to 5.30 pm; according to the report 200 people signed the register, several school parties came and it was a great success. It had a Wants and Exchange table similar to today and members' exhibits which were discussed by the assembled collectors.

The next Exhibition was on Saturday 30th March 1946, from 2 pm to 5.30 pm, held at the same school and run by R. H. Briegel. This event was beginning to get its act together because we now had an exhibition of apparatus and collecting methods, together with a setting competition. It was well attended; several school parties came, although St Ivo is not mentioned at this stage.

Mrs J. M. Adams was the organiser for the next four Exhibitions which were all held at Buckingham Gate Central Schools. The dates of these were 28th September, 1946 (when B. O. C. Gardiner was asked to lead a Brains Trust to answer members' queries), 9th August 1947 this date had to be changed to 26th July as the AES could not get the venue for the original date; a very sketchy account was reported which mentions a setting competition. The third exhibition was held on 26th March 1948, and while no note is to be found in the *Bulletin*, this event was reported by an unknown author in *The Entomologist* vol. 81, page 176, 1948. The note said that over 300 people attended and that most orders of insects were exhibited but Lepidoptera was predominant as usual; apparatus exhibits were numerous and several members showed their artistic abilities in paintings and drawings of an entomological interest.

Photographs were shown along with the apparatus used to produce them and talks and demonstrations were given by several members including your present editor. Finally Saturday 26th March 1949 from 2 pm to 5.30 pm for which 300 signed the register and lectures were given by Messrs Parmenter and Last. Seventy members exhibited at this show, a far cry from nowadays, and an AGM was held afterwards.

The next one was again a sudden date change. It was advertised as Saturday 10th June 1950, but had to be altered to 24th June. D. P. Golding had taken over as Meeting Secretary but the event was poorly attended (they all came on the 10th!). Part of the Tring collection was shown and lectures were given.

During Festival year, Saturday 22nd September 1951 was the first Exhibition held on a date we have all become used to, and the Meetings Secretary for the next three years was K. H. Bobe. The report for this year: Most successful Exhibition in the Society's history, attendance was good with plenty of young people, exhibits were in good quantity although mostly macrolepidoptera. Other orders were present. (I suspect that the most contentious part of our Exhibitions started around this time, e.g. inviting dealers.)

The other two were Saturday 27th September, 1952 from 2 pm to 5.30 pm and Saturday 19th September 1953, again from 2 pm to 5.30 pm. In the first of these, apparatus is mentioned including the latest mercury vapour trap. London Zoo was represented, and in the second. The ninth post-war Exhibition was an outstanding success, exhibits were in good number with lectures and demonstrations of setting. A special meeting was convened afterwards.

R. D. Hilliard (No. 99) started writing the Annual Exhibition reports from 1953, and they were beginning to get longer and more detailed with individual exhibits being written about.

The Council was talking about a larger venue because the school we had used for eleven years was now getting overcrowded (now where have I heard that before?).

S. M. Hanson had the thorny branch for the next five years, the first being Saturday 25th September 1954, in which a growing number of silk moth enthusiasts showed exhibits and London Zoo put on a good display. Saturday 17th September 1955, his second, was the first year dealers were mentioned on the *Bulletin* back cover, which also showed maps and directions. The report for this event indicates a decrease in exhibits of orders other than Lepidoptera, but a large throng of members, their wives, youngsters and friends attended. Mr Lewis made labels for all the members and these were given to them as they arrived. (Can you imagine doing that today? It must have been a mammoth task even then!)

Saturday 15th September 1956, his third, was much the same as 1955. The name labels were again made by Mr Lewis and the numbers of exhibits, mainly Lepidoptera, were up. Saturday 21st September 1957, his penultimate, had a wet start but became fine later. A difficult year for collectors with a long spring drought and dull wet summer. Nevertheless exhibits of all orders were in good numbers. (I think Murphy must have been asleep on our Exhibition days, as this is the first one with other than fine weather!) S. M. Hanson's last in 1958 had a very sketchy report which mentions a wet summer, but exhibits were reasonable, and a lecture was given by T. S. Roberts on collecting in the Scottish Highlands.

In the years 1953 to 1959, a group within the AES called "The London Meetings Group" was formed. This group held around three Exhibition meetings per year within London, and Caxton Hall was used a number of times. These meetings held in the winter months were pure exhibits events, but I could find no mention of them after 1959. Reports in the *Bulletin* were poor; I did find dates but with no true continuity.

Our last two years at Buckingham Gate were captained by F. C. Brown. Saturday 3rd October 1959, 2 pm to 5.30 pm (we had not yet started earlier). The first year Mr Berman and his double menagerie from St Ivo were mentioned, and Saturday 1st October 1960, when attendance was well up to average (numbers not mentioned), with very few exhibits and M. V. Labern lectured on Nature Conservancy. This was our last meeting at this venue after 18 years. Is this a record?

Saturday 30th September 1961 saw a new meeting place — Hugh Middleton Secondary School, Corporation Row, EC1. K. J. Fox was in command for two years, the first in which a fine and varied show was

provided in a venue that gave more room for people to move around. Practically every dealer in entomological requirements was present and good displays were shown (the first year in which I had an exhibit), and Saturday 6th October 1962 from 2 pm to 5.30 pm; a perfect day with a slightly decreased number of exhibits, but a welcome increase in foreign ones.

For the next six years the position of Meetings Secretary was held by Bernard Skinner (Who? I hear you all ask. Wasn't he the chap who wrote a book or something?). The first of these Exhibitions was held at Hugh Middleton School on Saturday 5th October 1963, from 2 pm to 5.30 pm. It attracted a large gathering of members and friends and exhibits included several detailed locality reviews. The 1962 winter was recorded as the coldest in living memory followed by a late spring and indifferent summer. Fifteen dealers attended and B. O. C. Gardiner exhibited live butterflies. The second Exhibition on Saturday 24th October 1964, from 2 pm to 5.30 pm recorded extremely kind weather for the year with a possible record attendance. R. F. Uffen gave a talk on identification of Lepidoptera by genitalia and the Society's slides were shown. St Ivo gave the usual good display and sold off surplus stock.

The next, on Saturday 9th October 1965, from 2 pm to 5.30 pm reported an increasing amount of people with even more exhibits especially in world species. A film show was given and T. S. Robertson gave his popular setting demonstrations. Bernard's fourth, on Saturday 15th October 1966, was a date change from the 8th, but held at the same venue on a warm sunny day with a record number of people. Increasing numbers of foreign exhibits appeared while there was a definite ecological approach and concern for conservation. (St Ivo could not come as the change of date had conflicted with another booking.) At this meeting the Council were debating changing the venue yet again because of the crush of people.

The fifth, on Saturday 7th October 1967, brought the second wet start to an Exhibition, but it did not stop the usual amount of people attending, including a number of new faces. A new section, The AES Conservation Group, was trying to drum up support and T. A. Robertson was still setting. St Ivo were back on the scene. Bernard's last, on Saturday 5th October 1968, from 2 pm to 5.30 pm was a perfect October day ensuring a record gathering of members and friends. Exhibits, however, were down but the indifferent summer could have been the cause. The Society's slides were shown by P. W. Cribb and helpers.

Saturday 27th September 1969, saw a much needed change of venue to Holland Park School, Kensington W6, and a change of Meetings

Secretary. P. W. Cribb was in the hot seat for the next two. The day started with a record number of people attending for what appears to be a longer period, as the ladies of the Council members did a stalwart job providing refreshments for *the whole day*. Exhibits were up (from 40 to 50) and members' slides were shown throughout the day. Peter assumed these duties at short notice and his son manned the door the whole time. Income from the event was £42.18.4d. Saturday 26th September 1970 was Peter's second. Attendance was probably down to around 1300 people but the meeting was very successful and the ladies, led by Mrs Hilliard provided the refreshments from 12.30 onwards.

On Saturday 25th September 1970, at the same venue, attendances were down again and the number of dealers had begun to make the place take on the atmosphere of a market place. St Ivo was not able to come again as Mr Berman had been taken ill. As this venue had reached saturation point (what, again!?), it was proposed that a register of approved dealers be made, and only those on the register would be allowed to trade at the Exhibition. This move was made to try to boost exhibits for which next year's theme would be "Back Garden Entomology". Mr Martin Hough was the organiser.

There were three letters printed in the *Bulletin* vol. 31, 1972, pages 35, 70 and 104. The first of these by David Tylor says that through the AES membership list and attending the Exhibitions, he has found many contacts. He is happy to be a member of such a friendly Society but feels that the newly acquired space at Holland Park is not being used for the purpose for which it was intended; the greater part of this new space is taken up by dealers instead of exhibits. He goes on to say that he is not suggesting dealers should be banned as they are useful in helping members see what is available, but he feels that more exhibits should be produced by the members as this is the main purpose of the day.

The second of these, written by E. W. Classey, says although not entirely against dealers at the Exhibition, it equates our event to an "Eastern Bazaar", and goes on to say that we must take action against undesirable developments that could destroy the Exhibition. The third, written by M. Sweeney, covers more or less the same ground but goes on to say that dealers of live/deadstock should be restricted.

From what I can make out it looks as though there were three people involved in the next Exhibition, which proved to be a balance between dealers and exhibits. Martin Hough assisted by Peter Cribb and George Prior were the members named. The date was 30th September 1972, and the theme "Garden Entomology" proved to be a useful incentive. There was a demonstration of genitalia dissection by R. Dickson and setting Diptera by Alan Stubbs; members' slides were shown by Peter Cribb and

St Ivo attended with their miniature zoo. Junior exhibits were excellent and refreshments superbly managed by Mrs Hilliard and Co.

Two letters were published in *Bulletin* vol. 32, 1973, pages 40 and 42. The first of these by M. P. Perceval says that he can see no reason why good trade exhibits should detract from the Exhibition; in fact they should complement good exhibits by us (the membership). He goes on to say that the number of exhibits is nothing short of pathetic, but it is obvious that large numbers of entomologists are present by the four or five deep crowds in front of the traders' stands. He suggests that exhibits be given a prominent position where they can be studied at leisure, separate from the dealers. He also suggests that more detailed reports of members exhibits should be given, with perhaps photographs similar to the BENHS reports of their Exhibitions. He finishes by saying a specific theme might encourage more members to exhibit!

The second letter by the then President, G. Prior, praises the standard of the junior exhibitors and says how difficult it was to come to a decision. He and Doug Olivant were so impressed by the standard that not one prize but three were given, and this only after a second examination and a cup of tea. He went on to say that the Council would be considering giving added recognition to the junior efforts in future.

The 29th September 1973 Exhibition was run by Peter Cribb and it had ideal weather which attracted a large attendance. Suggestions made by Council to improve the Exhibition were carried out and alternative dates were discussed but it was thought that the present dates were optimum for weather and attendance. Between 1,500 and 2,000 attended, but exhibits were down. Mrs Hilliard and her stalwart ladies produced refreshments as before.

Bernard Skinner had control for the next six years, still at Holland Park, the first on 28th September 1974, where a full house was reported with exhibits up. The next was on 27th September 1975, when it rained most of the day only easing off in time to go home. However, this did not stop members and friends turning up in similar numbers to previous years. Dealers had been briefed about the law and conservation with the proviso that old insects could still be dealt in. Exhibits maintained their improvement and juniors provided some very good work. Setting was demonstrated by Messrs Cribb, Bradford, Emmet and Else. London Zoo and St Ivo produced their usual high standards of work.

The third, on 2nd October 1976, saw a change of venue. As we could not book Holland Park, a stop-gap had to be found, and this was University College School. This hall was on two floors, ground and mezzanine; dealers were on the ground floor with exhibits around the balcony and in classrooms. B. A. Cooper, a founder-member and a former pupil at this school, gave a speech saying that he first became

interested in insects while at this institution, and from this was born the AES. On this occasion exhibits were down but those on show were outstandingly good; ITV was present for a series of natural history programmes, and this venue was soon packed shoulder to shoulder.

Bernard's fourth Exhibition, on 1st October, 1977, had not found a larger venue, so it was still University College, where exhibits were most interesting and varied but only 45 out of a membership of 1,400 was considered a poor showing. Joan Hilliard and her trusty helpers coped yet again with the catering.

The halls we have hired eventually become overcrowded, and University College was no exception. Wembley conference Centre was going to be our next venue. 21st October, 1978, Bernard's fifth; a bold decision to hire the Wembley Conference Centre but after an almost unanimous approval from the membership via a questionnaire, our misgivings were dispelled by the tremendous support given to us which would more than cover our financial commitment: the members had to pay 20p entrance fee. This did not apply to exhibitors; dealers were given a free pass for each table they hired, otherwise they paid. There were two sections, one reserved for dealers and the other for exhibits. A separate studio was available where films were shown. Because of the complexities of this venue, Bernard was ably assisted by Peter Cribb, Colin Hart, Eric Bradford and many willing workers. Bernard's last, on 15th September 1979, saw yet another change of venue. Wembley Conference Centre had proved too costly.

The meeting was held at Alexandra Palace and the choice was fortunate. Due to circumstances beyond our control we had suffered three changes in as many years, and it was hoped we could book this in future as the cost was within our means. A perfect day attracted an impressive number of members and friends and setting demonstrations were given. Only 42 exhibits were shown and these included St Ivo and other Natural History societies.

Colin Hart was the Exhibition Organiser for the next six years, and his first show on 27th September 1980 should have been held at Alexandra Palace, but we must have left a lighted cigarette there the year before as the place burned down and a new location had to be found rather quickly. This turned out to be the Old Hall, Royal Horticultural Society, Vincent Square, London. The report for the day said that the enthusiastic support of members and friends, and the ready co-operation of dealers plus ideal weather conditions made it a successful day. The 1980 season, with late spring and indifferent summer, encouraged only 37 members to exhibit and this number included St Ivo, AES Groups, and other Natural History Societies; 2,000 attended but car parking was not a strong point of this venue.

Colin's second, again a change of venue, this time at Hounslow Civic Centre, on 10th October 1981, was once more acclaimed to be the ideal venue and every effort was made to re-book for future years. The accommodation was spacious and came complete with cafeteria, bar and ample parking; a record attendance was recorded with coach parties from abroad, 25 traders displayed their wares, and a symposium on breeding British butterflies was a highlight. Exhibits were down with only 27 individual entries, although these were bolstered by St Ivo and six Natural History Societies. Colin's third, on 9th October 1982, at the same venue, attracted a good number of people, but the Civic Centre authorities were not pleased with the crush, although every effort was made to abide by the fire regulations. It was a privilege to see the display of "Birdwing Butterflies of the World" (Ornithoptera), from the largest private collection in Europe, Haugham and Low. Only 28 exhibits were shown which included St Ivo.

Our third year at Hounslow, and Colin's fourth Exhibition, on 8th October 1983, had a good attendance and most of the regular supporters showed their work, but more exhibits would have been welcome. Particularly disappointing was the Ansorge award entries, with only Simon Reavey entering, but nevertheless a worthy winner. A special feature was the Lullingstone Silk Farm display from World Wide Butterflies. This showed all the stages, including how the filament was wound. Only 22 individual exhibits were on display (this must be an all-time low). Dealers were on the increase with 50 plus invites being sent out and 30 of these coming to the show. The price of entry had gone up to 30p to balance the cost of this venue.

Colin's fifth Exhibition on 6th October 1984, still at the Civic Centre, was proving to be an excellent venue apart from the niggles about numbers attending and catering problems. A perfect autumn day attracted a record number of members and friends, and the support of other Natural History Societies and dealers made it a memorable day. Reflecting the fine summer, exhibits were up with 30 individual entries, and junior displays were the best for years. This was R. D. Hilliard's final Exhibition report in the *Bulletin*, a nearly uninterrupted yearly reporting of 32 years from 1953 to 1984, with only two years missing when he was not able to do this report, 1959 and 1971.

October 6th, 1985, Colin's sixth and last at the same venue. Long before opening time a large queue had formed. The Civic Centre is proving to be not large enough for all who wish to come and the yearly problems with fire regulations and the catering meant we had to use the cafeteria as exhibition space, and a small section of the main hall was sectioned off to provide drinks and sandwiches. Fortunately the bar was

still open and it was a mild day so people were able to sit outside. Exhibits were up with 39 entries being displayed which included St Ivo with the familiar small zoo. The entry had to be raised yet again to 50p, as the cost of this hall was rising fast.

Warnings were now being sent to all dealers concerning which species of Lepidoptera, English and foreign, they could sell with CITES and Wildlife and Countryside Act laws that had to be obeyed.

Dr Clive Betts wrote a letter to the Editor concerning our Exhibition (*Bulletin*, pages 79, 80, vol. 45), which said he was shocked at the complete domination of traders and the amounts of money changing hands at this event; yet members' exhibits were confined to a small side room. He was horrified and disgusted at the extent of trade in pinned specimens and exotic livestock. (We still allowed the sale of vertebrates at this stage.) He went on to say that despite many of these foreign insects being bred to this end, it hardly justified their slaughter for the purpose of adding specimens to a collection.

After continuing in this vein for two more paragraphs, he expressed anger that the AES should allow its Exhibition to become little more than a giant shop selling live and dead animals, and also expressed disappointment at the members themselves for pandering to such blatant commercial interests and for the pitiful numbers of exhibits. He went on to praise those who did present an exhibit without a price tag attached. I must admit that I agree in the most part with what he said, but I justify the sale of insects (now reduced by legislation), because this is what the main body of the membership wants. Also having dealers at our events brings in the necessary revenue to self-finance the meetings. I heartily concur on the point about lack of exhibits — this has been the bane of our Exhibitions since they first started.

October 11th, 1986. Yours truly in the hot seat for the first time, and at the same venue. Dealers were still going up; 68 attended, selling all categories of livestock, deadstock, equipment and books. The usual large numbers came (1400 programmes were sold at 50p per head). AES Groups put on their usual large and interesting displays, and Peter Cribb gave an illustrated talk on "A Naturalist in the Balkans". Exhibits were up — there were 50 including St Ivo who exhibited a high standard of work encouraged by the enthusiastic Mr Berman. The same old bones of contention were still being brought up by Civic Centre authorities: I think I had it easier than Colin as the plans of the event did not have to go to "Greater London Council" because the GLC had been abolished. I still had problems with the catering but luckily Sid Painter agreed to take on the task aided by his wife, but still taking up part of the main hall.

My second Exhibition and the last at Hounslow, on Saturday 10th October 1987, the year of the great storm, in fact six days later. It was decided to use another entrance to make it easier for people to get in. Around the same numbers as in previous years attended on a wet and windy day. The same number of dealers exhibited their wares and Paul Brock gave a slide show in the Council chamber depicting Phasmids. Exhibitors were down (surprise, surprise!), only 42 including St Ivo and their livestock; other Natural History Societies and AES Groups put on good displays. The sale of vertebrates was banned from this Exhibition onwards, but there was an increasing amount of Spiders being sold.

A new venue had to be found for our next Exhibition as the Civic Centre despite its attractive features left a lot to be desired on other counts. A lot of travelling was undertaken to find a suitable hall and places which were looked at were Pickets Lock, Sandown Park and Kempton Park; of the three Kempton was considered the most useful and was consequently booked.

The 22nd October, 1988, my third — and at the new venue, Kempton Park Racecourse. I decided that exhibits in this new hall would take pride of place, so they were arranged where people entering would see them first. The hall offered not so luxurious but adequate accommodation with more space and easier access for loading and setting up; the catering also promised to be without problems (on the day this promise was dashed, as we finished up with a hodge-podge). The usual throng of people attended on a gloriously sunny day, during which a slide show was put on by Peter Cribb in the Winners bar, henceforth known as the Special Events room.

Only 32 exhibits were shown but I put this down to the monumental error that our printers made when they failed to include the booking leaflet in the August *Bulletin*. The weather that year as far as I remember was not that good. The BBC filmed some of the displays, to be shown on a programme about hobbies that occupy the population; a short part of this was included in the eventual TV presentation shown on BBC 2.

My fourth on 7th October, 1989, still at Kempton Park. I was beginning to get the feel of this venue and I had arranged the dealers better; the entrance was moved to the middle of the hall to give better coverage to the exhibitors and dealers. The numbers attending were down considerably with only 1000 coming; perhaps the day had something to do with the decline as it was cold, windy and grey; the queue was allowed to shelter in the Tattersalls bar until entry time at 11.00 o'clock. Exhibits were the same as last year with only 33 entries, and I am not sure if all of these produced a display because I had seven requests for table space with no reports; assuming these seven did produce an exhibit, it is still a sorry showing especially after the hottest,

driest summer for 300 years. Our President, Alan Stubbs, gave a talk in the Special Events room on Nature Conservation, and prior to this I displayed my Moth Database.

My third Exhibition to be held at Kempton Park on 6th October, 1990, is, I hope, going to be better supported by the membership; I want to see as many exhibits as possible, it does not matter that what you have to display is common or otherwise — *bring it along*. Whatever you do, do not forget to submit that vital report as your hard work cannot be reported in the *Bulletin* if you do not do this. As a final thought: if exhibits were more plentiful, more room would have to be made for them and less of the dealers would get places at our Exhibition.

IT IS YOUR CHOICE.

References

Bulletin of the Amateur Entomologists' Society

Vol.6 pages 37, 40, 49 & 50. Vol.7 pages 17, 18, 19, 37, 86, 117, 131, 139 & 187. Vol.8 pages 5 & 47. Vol.9 pages 49 & 88. Vol.10 pages 117-118. Vol.11 page 109. Vol.12 pages 89-90. Vol.14 pages 1-2 & 95-97. Vol.15 pages 112-114. Vol.16 pages 85-87. Vol.17 pages 69-71. Vol.18 pages 87 & 91. Vol.19 pages 113-114. Vol.20 pages 123-125. Vol.21 pages 89-92. Vol.22 pages 33-34 & 70. Vol.23 pages 4-7, 73 & 74. Vol.24 pages 3-6. Vol.25 pages 4-7 & 74. Vol.26 pages 6-9 & 70. Vol.27 pages 42-45 & 74. Vol.28 pages 69-72. Vol.29 pages 59-62. Vol.30 pages 109 & 144-147. Vol.31 pages 32-34, 35, 70-71, 103 & 104. Vol.32 pages 40, 42, 117-118 & 118-121. Vol.33 pages 40-45. Vol.34 pages 4-9. Vol.35 pages 5-12. Vol.36 pages 1-11. Vol.37 pages 45-51. Vol.38 pages 45-52. Vol.39 pages 2-6. Vol.40 pages 2-6. Vol.41 pages 1-7. Vol.42 pages 3-7. Vol.43 pages 3-6. Vol.44 pages 53-56. Vol.45 pages 6-18, 74-79 & 79-80. Vol.46 pages 114-115 & 119-124. Vol.47 pages 126-129. Vol.48 pages 135-139

I would like to thank Brian Gardiner for digging out the Exhibition reports that were not put into the *Bulletin*; the references for these are as follows:-

The Entomologist. Vol.72 page 149. Vol.81 page 176.

The Entomologist's Record. Vol.51 page 86.

FOOD FOR THOUGHT

by A.R. Pittaway (4802)

Have you ever had the problem of finding that rare foodplant for your prized larvae, and then had to watch them starve to death? Have you not bothered to rear desired species for lack of a suitable foodplant? Well, in November 1989 I managed to find a specialist nursery which stocks many of the trees and shrubs needed to rear those exotic swallowtails, silkmoths etc, and at prices which will not burn holes in your pockets. Mrs Susan Cooper of Churchfields House, Cradley, near Malvern, Worcs WR13 5LJ (telephone 0886-880223) stocks *Euodia*, *Phello-dendron*, *Ptelea*, *Zanthoxylum* (all Rutaceae), *Ailanthus*, *Liquidambar*, *Robinia* and many more.

MILLPORT SUMMER SCHOOL

This holiday course is run jointly by the Universities of London and Glasgow and is held at the Marine Laboratory, Millport, Isle of Cumbrae, Scotland and will take place on 4th - 11th August.

The Marine environment of the West of Scotland is extremely rich and varied, with the majority of British species present. The University Marine Biology Station, situated on the Isle of Cumbrae, is uniquely placed as a centre for the study of this environment. Participants in the Millport Summer School will have access to first class laboratory and field equipment, and to the Station's research vessels. Students on the course will also be able to use the Station's excellent library.

This holiday course will be invaluable to anyone interested in natural history, but particularly to those amateur naturalists who would like to improve their knowledge of marine life and of the plants and animals along the margin of the sea. Topics studied will include:

The natural history, identification and distribution of rocky and sandy shore animals.

The natural history identification and distribution, mounting and preservation of seaweeds.

Dredging the sea bed, with subsequent examination and identification of the haul.

Marine microbiology, giving an introduction to the bacteria, viruses, microscopic algae and zooplankton.

The plants of Cumbrae, with emphasis on the supra-littoral.

The course will be taught by the staff of Millport Field Station and by lecturers from the University of Glasgow.

Details obtainable from:- The Enrolment Secretary, Department of Adult and Continuing Education, Glasgow University, 59 Oakfield Avenue, Glasgow G12 8LW. Telephone 041-330 4394 (24 hours).

A MIDLAND HUMMINGBIRD HAWKMOTH

by K. Williams (8197)

I was interested to read the observation of a "Hummer" (*Macroglossum stellatarum*) in the Portsmouth area by Mr Marples (*Bulletin* 49: 10). Members may be interested to learn that I caught a perfect specimen of this moth in a garden at Daventry, Northamptonshire on 11th September last year, at 2.35 pm when it was feeding from a mixed clump of flowers.

A week later another one was seen in the same area. It seems that with the forecast warming of the British climate, I wonder if the species will change its status into becoming a permanent resident.

A PERSONAL BATTLE FOR CONSERVATION, OR, WHEN ARE YOUR COMMONS MOWN?

by Tim Newnham (4597)

In my village of Staplefield, Sussex, there is a large triangular plot of common land, kept close-mown for the purpose of playing cricket etc, surrounded by other commons which are rough mown. Until 1989 the main common (which is not really of interest) was the responsibility of the County Council, being cut once a year in August/September. These outside commons could be likened to wild meadows in that they contain plants common to the habitats, eg ox-eye daisies, orchids, birds-foot trefoil, devils-bit and field scabious, plantain, sorrel, nettles, colts-foot, etc. The butterflies to be found are numerous and include Painted ladies, Meadow browns, Skippers, Common and Holly blues, Small coppers, Peacocks, Small tortoiseshells, Comma and other species which come either for nectar or to lay their eggs on their specific foodplants. In fact it is an oasis for them in a desert of ryegrass, or rather was until the Council decided, whether off their own bat or as a directive from someone else, to put in an extra cut in June/July.

This summer cut has several disadvantages to wild life; first, it means that the butterflies that come for nectar are suddenly deprived of food and become non-existent directly after the common is cut and do not return, a phenomenon which I have witnessed at first hand; secondly, those butterflies coming to lay their eggs are deprived of laying sites; and thirdly, the caterpillars already present are deprived of food. Also I commented on the type of mower used, a flail type which cuts so close to the ground that the grass and other foliage is cut into very small pieces and this includes the unfortunate caterpillars. Those that survive have no refuge in the closely cut sward and the mowing leaves a carpet which blocks essential light from the growing shoots. Lastly, mowing at this time of year means that most of the plants do not have a chance to flower.

Therefore I wrote to the County Council pointing out these facts and asking them to cancel the first cut and review their choice of mower, as a hay mower cuts higher, so leaving food for the caterpillars, more chance for the grass shoots to grow and there is also less chance of damaging the caterpillars. After much correspondence I won the battle for the abandonment of the first cut. However, last June, I was informed that the cutting of these commons had now been handed over to the Parish Council! When I learnt of this I spoke to the Chairman and he informed me that it was too late to stop the early cut this year and, lo and behold, the commons were cut the next day, but something could possibly be done for next year. I then wrote a letter to the Parish Council outlining

the problem of the early cut and choice of mower, and this was duly discussed at the Village Association meeting. From this discussion I have been approached by the Chairman of the Association, who is also on the Parish Council, for a list of the flora and fauna of the commons, so that they can refer to an expert in grassland ecology to advise on the best procedure.

Hopefully, now, my personal battle is won and the butterflies that were common will again be prolific. I would however, ask all AES members:

- Have *you* got the same problem?
- When was *your* local common cut?
- Who cuts *your* common?
- What are *you* doing about it?

If you are having the same problem, find out who is responsible for the mowing, write to them, talk to them personally, use every available chance to get your point across.

If an individual like myself can change a Council's policy, I'm sure you can!

WING EXPANSION....A LENGTHY PROCESS?

by Paul W. Batty (8026)

With a few years of experience of breeding butterflies and moths, I have noticed that on emerging from the chrysalis or pupa, the insect takes from a few minutes to an hour to fully expand its wings. (Of course the full drying out process may take much longer.) Recently, (March 10th - 15th 1990), I found emerging, a dozen or so Hebrew characters (*Orthosia gothica*) that I had been overwintering, having reared them the previous year. All emerged and inflated their wings fairly quickly, but one individual was determined to puzzle me. Around 6pm one evening, I noticed that one moth had just emerged as its wings were still tiny and crumpled. Around midnight that night, before retiring, I noticed that it had still not begun to inflate its wings and when at around 6pm the following day it was still in the same tiny crumpled condition, I wrote it off as being one of the inevitable "losses" one always gets in breeding these insects. Therefore it was to my amazement that upon inspecting the cage around 10pm on the third day (some 30 hours later), I found a perfect insect with fully expanded wings. Although conditions were rather cool, this had not affected the other moths, but this one individual had not apparently started to inflate its wings until between 24 and 54 hours after emergence.

WHAT A START TO THE YEAR!

by Brian O. C. Gardiner (225)

Two months of 1990 have now passed. Months which one would normally expect to be ones of snow and ice. Instead of which we have had sun and gales. In my Cambridge garden not a day has yet gone by without the sighting of at least one ladybird, and on some days a hundred or so; not in hibernation as one would expect, but actively walking and flying around the garden. On many days they have been joined by an assortment of diptera and of hymenoptera. Bumblebee queens have already been nesting and a dozen or so queen wasps were clearly also looking for suitable sites in February. Throughout the same month honey bees were gathering nectar from the profusion of early blossom. Both Small tortoiseshells (*Aglais urticae*) and Peacocks (*Inachis io*) were seen in January, a not so unusual occurrence for these hibernators, but the first Brimstone (*Gonepteryx rhamni*), which seems far less inclined than the nymphalids to take advantage of any fine spells, was not seen until 23rd February.

SOME EARLY 1990 SIGHTINGS

by B. R. Hebbes

With the spring-like weather we have had this winter I have noted several insects in my garden at Ramsgate, Kent. On 22nd February ten 7-spot ladybirds and one other were seen, together with a small fly and a bumblebee. The next day the same ladybird species were still in the garden and two small flies were observed on the kitchen window. A large black and yellow bumblebee which looked like a queen was also active although I did not notice any pollen on her.

SOME INTERESTING LATE 1989 LEPIDOPTERA RECORDS

by Jan Koryszko (6089)

On 17th November I found an almost dead Large yellow underwing (*Noctua pronuba*) moth in Longton indoor market. It was lying on the floor next to a fruit and vegetable stall and had most likely been transported there with the produce. There have been other occurrences of species which do not normally produce an autumn brood. In October a few Yellowtail moths (*Euproctis similis*) were recorded in Staffordshire. I suspect that those species not normally producing autumn broods will have been encouraged to do so by the abnormal warm weather that occurred and that larger numbers than usual of some species were produced.

AN EARLY HOLLY BLUE — TWO YEARS RUNNING

by Brian O. C. Gardiner (225)

Last year the first Holly blue (*Celastrina argiolus*) of the season in Cambridge was spotted by my son Andrew in his garden on 31st March. By a curious coincidence the first one of 1990 was spotted in my garden and on the same date!

HOW TO KEEP AND LOOK AFTER DESERT BEETLES

by Mark Johnson (3464)

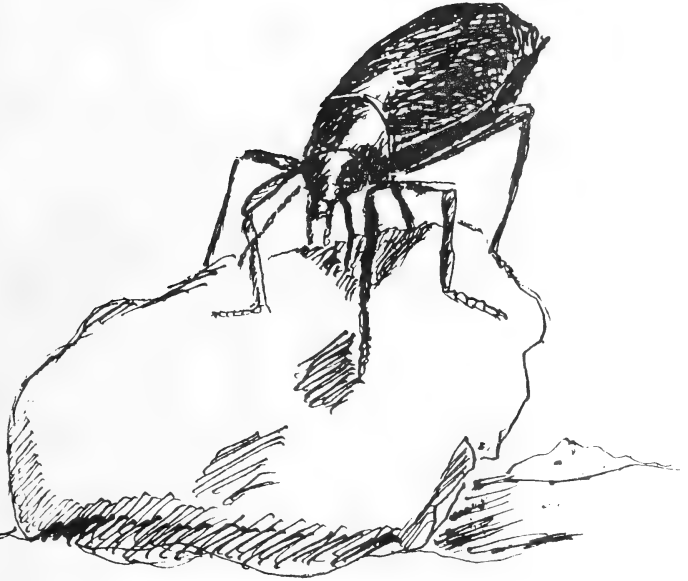
After studying and observing Water beetles for some time I decided to have a change and study Desert beetles. They are interesting for many reasons but mostly for their diversity of form, as can be seen from the illustrations of *Morica*, *Planata*, *Blaps* Spp., *Adesmia reticulata* from Ethiopia and *Prionotheca coronata* from Arabia.

First I put the Water beetles back into the pond from whence they had come. I then purchased two specimens of a *Blaps* species from Tunisia and one specimen of *Morica* from Portugal. I used the same aquarium after it had been cleaned and the water removed leaving the artificially-made cave and some of the moist gravel. After doing this I filled the aquarium with three and a half inches of Gem horticultural sand and the following cacti:

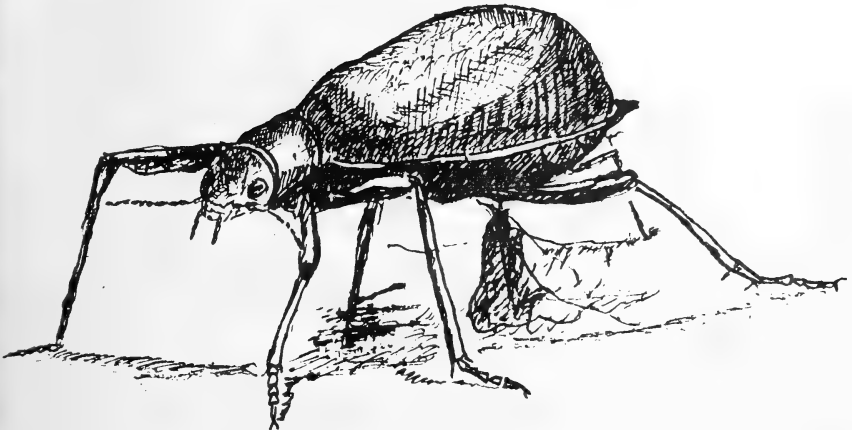
Opuntia subulata; *Mammillaria elongata*; *Mammillaria elegans*; *Mammillaria zeilmaniana*; *Rebutia* sp. Lav. 404; *Oriocereus celsianus*; *Pilosocereus azereus*; *Euphorbia bulbalina*.

The aquarium is 20 inches long by nine inches wide, the lid is made of wood with four triangles of ten millimetre holes in each corner and underneath is stretched some netting to keep out the flies. As shown, there is an inverted sea shell in which I put some liquid for the beetles to drink.

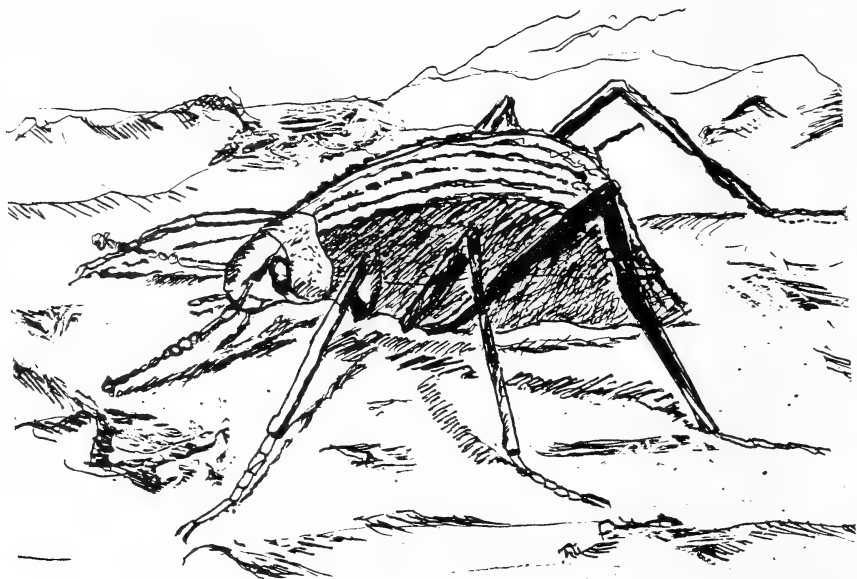
At first I fed them on tinned tuna fish, filling the shell with the liquid from the tin. After a while, to add variety to the diet, I gave them some mackerel in brine, slices of tomato and lettuce; sometimes adding a little milk in the shell, or even purified water. The cave is useful for the beetles to hide in and seems to satisfy them. I have over the past year been able to draw them as they rest or move about, as shown by the drawings of the *Blaps*; one on the move and the other resting on a rock, and *Morica* resting by the cave. They tend not to like very strong sunlight and are active at night. They can be seen resting on the cacti or cave in the cool hours of daylight when the sun is not too strong. So far they are living quite harmoniously together.



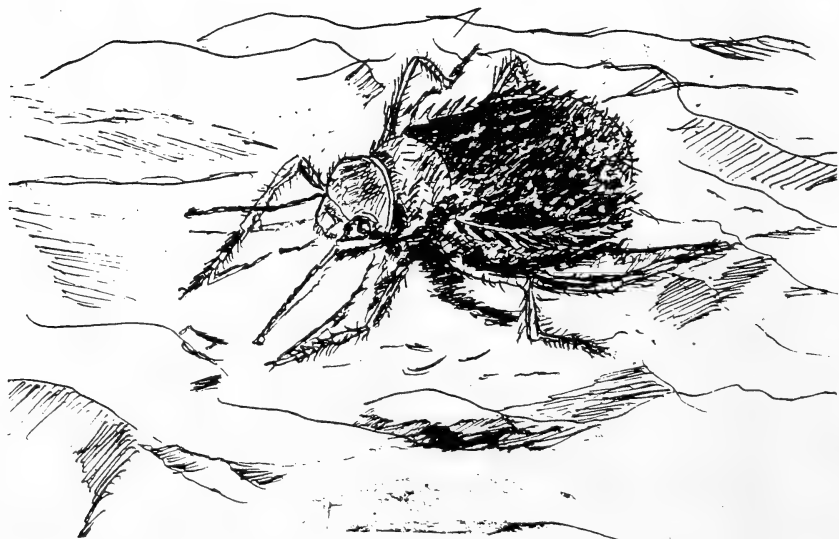
Blaps species at rest.



Blaps species on the move.



Adesmia reticulata



Prionothea coronata



Morica planata at rest

A VISIT TO THE EDINBURGH BUTTERFLY FARM

by Jennifer A. Johnson (9214J)

The Edinburgh Butterfly Farm is definitely a place to be visited. It is home to many thousands of tropical butterflies. The giant owl butterflies from South America are usually the first ones to be spotted as they rest on rotten bananas and other fruit. The strong scent of flowers and the noise of rushing water as you walk towards the insect exhibition, not forgetting the mud pool at which butterflies can sometimes be seen feeding. The insect exhibition shows caterpillars, pupae, tarantulas, bees, stick insects and other exotic, rare and interesting insects. Back in the flying area, butterflies and some moths go about their daily life of flying, courting, sipping exotic nectar, laying eggs or simply basking in the afternoon sunlight. Near the waterfall birds fly, eat or sleep, not even bothering to look twice at any of the butterflies. By late September a lot of the butterflies' wings show signs of age, wear and tear. Among the hundreds of species are to be found Chinese peacocks, Flames, Red mormons, Common sailors, Sulphurs, Owls, Postmans, Giant swallowtails and Monarchs.

THE SPOTLESS GATEKEEPER

by Paul W. Batty (8926)

I was interested to read the article by Mark Hope on a "Spotless gatekeeper" (*Bulletin* 47: 217-220). I have a specimen of this rare aberration (*Pyronia tithonus* ab. *obsoletissima*) in my collection, taken by me in Worksop in August 1988, and my friend Mr Martin White (6003) also has a specimen. I have searched again in 1989 but have failed to find any more specimens of this ab. in the same locality. However, locally in Dinnington I find one or two examples of the Gatekeeper with extra spotting on both the fore and hindwings in most years. David J. Carter, of the Natural History Museum, informs me that examples I have with two additional distinct black spots on the forewing, are probably referable to ab. *tithonellus* Strand. Another local site regularly throws up examples of the "Ringless ringlet" (*Aphantopus hyperantus* ab. *caeca*), at the rate of two or three per year. Although not particularly uncommon, this interesting aberration has only the white centres of the eyespots present. I hope to exhibit these and other unusual specimens at a later exhibition.

A HUMBLE BUTTERFLY QUIETS QUARRY

by *Spectator staff*

Milton — Industrial sized chainsaws and 45-ton backhoes are being held at bay by a butterfly at Canada's largest commercial quarry.

The clearing and blasting of a 20-hectare (50-acre) parcel of Dufferin Quarry's multi-million aggregate operation has been put on hold because a butterfly considered to be an endangered species has been sighted on the property.

The West Virginia White butterfly was seen on the Dufferin property by a Minister of Natural Resources team last spring while it investigated plants and animals on the province's endangered list.

Dufferin general manager Michael O'Connor said he was told that the province's Endangered Species Act carries a maximum \$3,000 fine and/or six months in jail if the company's operations disrupt or destroy the butterfly's habitat.

If Dufferin is forced to abandon the 20 hectares for the sake of the butterfly, it would represent a \$10 million loss for the company, he said.

Natural Resources has hired a consultant to review information on the butterfly's habitats. It will later ask an expert to recommend to the minister whether it should remain on the endangered species list.

COSTA RICAN IMPRESSIONS

by *Kenneth A. Beckett (8165)*

In the *Bulletin* of April 1989 there was an editorial about the Transworld Butterfly Company and the associated Naturalists' Ranch and Lodge in Costa Rica. It ended by suggesting that the experiences of members who had stayed there would be of interest. At about that time I had decided that Costa Rica was the safest American country in which to study the various zones of tropical rainforest. It also appeared that the Naturalists' Ranch and Lodge offered the best accommodation for a naturalist. What follows was largely written at the Lodge just before I left on 18th December 1989, while impressions were clear in the mind.

Firstly it should be said that Simon Ellis of the Transworld Butterfly Company acts as agent for the Rancho Naturalista which is owned and run by Americans John Erb and his daughter Lisa.

The rancho is comfortable, the owners friendly and helpful, the food is varied, interesting and good. There is no telephone or postal service. Scenically the site of the rancho could not be bettered. It sits on a wide ledge above the deep Tuis valley with a backdrop of mountains among them the massive volcanoes Irazu and Turrialba. The landscape is a patchwork of small scale cultivation, sugar cane and coffee being the dominant crops with bananas a close third plus other tropical fruit, vegetables and cattle. Among and above the fields are remnants of tropical pre-montane rainforest, some of them quite extensive.

Getting to the rancho is almost an adventure in itself as the last few kilometres are over a very steep and winding rutted dirt road which only a powerful four-wheel drive vehicle can cope with, and even that can sometimes get stuck in the mud!

As a horticulturalist by profession and a botanist by inclination, it was the plant life that I went to Costa Rica to see. However, wild life in general greatly interests me, especially Lepidoptera and other insects, though I don't profess to be very knowledgeable about them. Apparently the best butterfly season starts towards the end of January but quite a lot of species appear throughout the year.

For me, the main joy of the rancho property was its own extensive tract of virgin, submontane rain forest on the adjacent slope above. Here, an unobtrusive track has been cut which takes one painlessly into the heart of the wild. I walked this track on several occasions and each time was bewildered by the astonishing wealth of plant and insect life. In a forest of equal size in the British Isles there might be three or four species of trees, here there were probably thirty or forty and apart from *Cecropia* with its huge, fingered leaves, all difficult to identify.

Epiphytes, notably orchids and bromeliads (air plants) were much in evidence as were the lianes, also shrubs and perennials on the forest floor. Here, a gardener interested in tender plants, and even a layman who grows a selection of house plants can feel more at home. Dumb-cane (*Dieffenbachia*) is easily identified as are the various species of *Columnnea*, *Philodendron*, *Calathea* and *Begonia*.

Several butterflies inhabit the shady forest, notably the curious satyrid *Citherias menander* which looks as though its wings are cut from brown gauze tinted with rouge. At one of the small clearings along the path a male morpho (*Morpho peleides*) had its territory and each time I walked the track he lazily displayed his magnificent iridescent rich purple-blue upper wings.

By far the greatest number of butterflies were seen at the edge of the forest in semi-cleared sites and by the sides of wider dirt roads. Favourite areas seem to be where naturalised busy lizzies (*Impatiens wallerana* from East Africa) and the Mexican *Ageratum houstonianum* made colourful drifts. Here I often saw a wide variety of butterflies, most noteworthy being the heliconids, e.g. *Heliconius charitonia* and *H. melpomene*. Swift and seldom resting was a Phoebus butterfly, a brimstone-like species but a little larger and more darkly hued. Commonest of all, especially where the forest had been cleared for cattle grazing was the white-banded Fatima (*Anartia fatima*), a butterfly which reminded me of the White admiral though a little smaller and less "choice". Most species had white bands on the upper wings, but some individuals were yellow banded. There must be a rich array of moth species, judging by those which came to the domestic lights, but it was impossible to identify them without reference to the Museum of San Jose (a two-hour drive away). Other insects which came to my notice were leafhoppers, grasshoppers, bush crickets, stick insects, mantids, cockroaches, beetles, solitary wasps and ichneumon flies. There were also several large (almost giant) millipedes.

There is no doubt that the rancho and immediate areas have much to offer the entomologist, but it covers only the forest zone and to sample the natural delights of Costa Rica one must travel further afield. John and Lisa will take you to other areas for day trips, e.g. the montane forest of Cerro de la Muerte, the summit of Volcan Irazu or the lush jungles of Taponi. There are many other reserves and national parks in Costa Rica but to see some of them an itinerary must be worked out well beforehand.

Travelling can be slow as metalled roads are few, most of the country being served by dirt roads which in the mountain areas can be very rugged. Furthermore, in some places accommodation is limited and

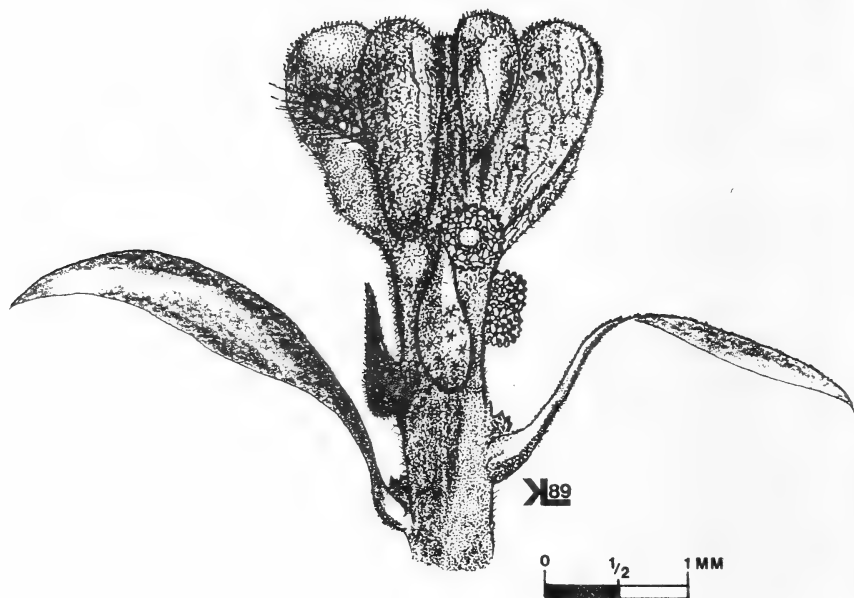
bookings must always be made well in advance. An added complication for the solitary traveller is that rooms are often designed for two or more people together and bookings for one may be refused. This, for example, is the case at Tortuguero and La Selva.

Simon Ellis of Transworld Butterflies will advise on these matters and do his best to see that travelling arrangements run smoothly and I certainly met with no problems during my stay.

ON THE WILD SIDE

by K. C. Lewis (8095)

The location of my garden is just twelve miles from London on the busy Old Dover Road. The garden is also very small, only twenty-one feet by fifty-one feet long. But I think I have proved, with planning and a bit of luck, just what can be achieved in only two years. The bit of luck was to lose the two Lime trees growing at the far end of the garden. They were lost in the Great Storm in 1987 and although I was sad to lose the trees it did open up the far end of the garden to the sun. The first thing that I did after clearing the ground was to plant some stinging nettle (used this year by the Small tortoiseshell (*Aglais urticae*) for egg-laying. The next foodplant bush is a *Choisya* or Mexican orange; this plant is now about twenty years old and covers an area of eight by four feet and is a mass of white blooms which the insects seem to love. By the side of the *Choisya* there is growing a common elder (*Sambucus nigra*) and in front of this a *Buddleia davidii* which is cut back to about ten feet high each year so that it does not get out of hand. In between all the shrubs and trees I have planted the ground cover plant (*Euonymus fortunei*) to form a dense cover; in fact it is impossible to see the end fence through it all. Along the left hand garden fence is growing a forty-year old ivy (*Hedera helix*). This runs the length of the garden to a pond which is of irregular dimensions but covers an area of about forty-eight feet. So this is the layout of the wild end of the garden. I then sat back and waited and in July 1988 on looking out of my bedroom window I spotted a pair of what I first thought were Common blues but on closer inspection I was delighted to see that they were in fact the Holly blue (*Celastrina argiolus*). Although they flew in close proximity I was unable to confirm a mating or egg laying so I had to wait and in due course was rewarded with a second brood flight. The next test was, would they overwinter, so each warm morning in spring 1988 found me looking out of my bedroom window hoping for a flash of blue wings. Spring 1988 in Kent was in fact quite cool with outbreaks of heavy rain, but with the start of better days they were again on the wing. And with the second brood I was able to see



a pairing and egg laying on the *Buddleia davidii* and one week later I observed a second female depositing eggs on the young buds of the ivy (see the illustration). The next day I went along the length of the ivy, with a hand lens, and found twenty-nine eggs attached to the buds and in one case three to a bud. The bud illustrated in my drawing had two eggs, one of which had hatched out. The larva from this egg was feeding with the front half of its body inside a fold of the bud. I did not try to find more than one egg on the *Buddleia* as it was like looking for a needle in a haystack; I just wanted to satisfy myself that what I had seen had in fact happened. Lastly in the past two summers I have found the following in my garden: Large white, Small white, Green-veined white, Small tortoiseshell, Peacock, Small heath, Meadow brown, Common blue, Holly blue, Comma, Red admiral, Brimstone, and Small skipper. I have also seen, by the pond, the dragonfly *Aeshna grandis*, and the damselflies *Calopteryx splendens* and *Platycnemis pennipes*, and in the pond the Common frog (*Rana temporaria*), one Common toad (*Bufo bufo*), and the Smooth newt (*Triturus vulgaris*), and so in a small way I have provided a wildlife oasis in the centre of a busy town.

COSTA RICA

by Ian Millar (9095)

Costa Rica is a small country, about the size of Wales, located in Central America between Nicaragua and Panama, which I visited for an insect collecting holiday.

The journey is long and tiring, taking 17 hours if travelling with K.L.M. via Amsterdam, Curacao and Guatemala. This route is recommended if you wish to bring live insects back to Britain as the alternative route is via Miami which has strict regulations.

My holiday was organised by Transworld Butterflies, who met me at San Jose airport in Costa Rica and took me to my accommodation, the Rancho Naturalista located outside the small village of Tuis, near Turrialba. The lodge was very good and run by Lisa (American) and Arnaldo (Costa Rican), who did the cooking and escorted guests daily to different collecting locations. I went to five different local areas, plus two long distance trips to a cloud forest and Atlantic lowlands. It is also possible to visit a volcano. Other trips can be taken to the Costa Rican beaches on the Atlantic side of the country (reputed to be better than Hawaii), San Jose, the capital, and white water rafting. I highly recommend the white water rafting as it is great fun.

The lodge is situated at an altitude of 900m, ideally located for butterflies on a 145 acre patch of Atlantic Montane rainforest.

The lodge has a m.v. light, which can be left on all night. This is very useful, since I managed to collect around 20 different Hawkmoths, Atlas moths etc, many of which I still have to identify. Hundreds of beetles can also be collected in this way, e.g. Harlequin beetles, Hercules, *Plusiotis* spp. (gold silver chafers) etc.

The ideal time to visit is during the rainy season, (last week in May until the end of August) in this area. At this time of year the mornings are warm and dry, 80-90°F, with rain (heavy short showers) in the afternoons, but not humid at around 900m altitude.

Collecting throughout the year is mainly done between 9 am and 1 pm, before the cloud comes in the afternoon, when you can relax in the lodge or go for a walk.

I visited the country at the end of April and found myself the only guest in the lodge for my second week. This was ideal and I used the m.v. light, and had to go through a bedroom to do so. This would not have been possible if the bedroom had been occupied, so check before booking.

Also before booking check on the number of dead insects of each species which are allowed to be taken out of the country, since the law was in the process of being changed while I was there (it was three specimens of each species with no total limit); it is also illegal to take out any live insects unless they are non-adult forms (eggs, larvae etc), but not illegal to bring them into Britain unless they are on the CITES or MAFF lists. Permits are needed for collecting dead insects, but can be arranged in advance of your arrival.

The total cost of my holiday was £1,100 for two weeks, but this has probably increased due to the decreasing pound. There is at least one English company, a large supplier of Entomology livestock, who also visit this country once a year.

In total I managed to collect around 100 species of butterflies in ten days, 40 large moths including hawk moths and about 70 different beetles.

This is a list of the butterflies that I have already identified from my set of specimens.

<i>Parides childrenae childrenae</i>	<i>Parides lycimenes lycimenes</i>	<i>Parides arcas mylotes</i>
<i>Papilio polyxenes stabilis</i>	<i>Papilio thoas nealces</i>	
<i>Morpho peleides limpida</i>	<i>Morpho theseus aquarius</i>	<i>Caligo memnon memnon</i>
<i>Smyrna blomfieldia datis</i>	<i>Pycina zamba zelys</i>	<i>Marpesia coresia</i>
<i>Marpesia alcibiades</i>	<i>Marpesia marcella</i>	<i>Junonia everete</i>
<i>Hamadryas arinome ariensis</i>	<i>Temenis laothoe agatha</i>	<i>Siproeta epaphus epaphus</i>
<i>Callicore pacifica bugaba</i>	<i>Anartia fatima</i>	<i>Hypanaria lethe</i>
<i>Anartia jatrophae</i>	<i>Historis odius</i>	
<i>Chlosyne janais</i>	<i>Tegosa anieta anieta</i>	<i>Castilia erantes</i>
<i>Tithorea tarricina pinthias</i>	<i>Mechanitis menapis saturata</i>	<i>Dircenna chiriquensis</i>
<i>Mechanitis polymnia isthmia</i>	<i>Actinote guatemalena</i>	<i>Actinote metampeplos</i>
<i>Lycorea cleobaea atergates</i>	<i>Danaus plexippus</i>	<i>Doxocopa plesaurina</i>
<i>Archaeoprepona demophon</i>	<i>Memphis euryppyle confusa</i>	<i>Memphis forreri</i>
<i>Dione moneta poeyii</i>	<i>Dryadula phaetusa</i>	<i>Eueides aliphera</i>
<i>Heliconius charitonia</i>	<i>Heliconius sara fulgidus</i>	<i>Heliconius tydno galanthus</i>
<i>Heliconius melpomene rosina</i>	<i>Dismorphia amphiona praxinoe</i>	<i>Dismorphia zathoe pallidula</i>
<i>Lieinix nemesis</i>	<i>Archonjas tereas approximata</i>	<i>Phoebis rurina</i>
<i>Eurema lisa</i>	<i>Eurema xanthochlora</i>	<i>Eurema albula</i>
<i>Catasticta sisamnus sisamnus</i>	<i>Catasticta flisa</i>	<i>Leptophobia caesia tenvicornis</i>
<i>Leptophobia aripa</i>	<i>Itaballia demophile centralis</i>	<i>Eurema daira</i>
<i>Phoebus argante</i>	<i>Oressinoma typhla</i>	<i>Dulcedo polita</i>
<i>Cissia gigas</i>	<i>Cissia tiessa</i>	<i>Taygetis andromeda</i>
<i>Cissia metaleuca</i>	<i>Cissia renata</i>	<i>Cissia hesione</i>
<i>Oxeoschisttus puereta submaculatus</i>		

I still have many different blues, skippers and hairstreaks waiting to be set and identified.

THE IMPORTANCE OF FORM FREQUENCY DATA TO ECOLOGICAL GENETICS

by M.E.N. Majerus (4027)

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I was most interested to read Helen Marcan's account on "*Field observations of variation in British Coccinellidae*" (*Bulletin* 47: 201-205). Publication of field data relating to colour and pattern variation is always of interest to those who work on the genetics and evolution of insect variation. Indeed it has always left me feeling somewhat dismayed and frustrated that there are so few published data sets on the frequencies of forms of most species. There are many entomologists who diligently record species variations, and their relative frequencies and distributions, in their note books, but never attempt to have them published. Consider for example those who run moth traps regularly. Most record all species caught, and note the numbers of those specific forms that they can identify. So, many scientifically valuable data sets of the frequencies of polymorphic species are undoubtedly scattered across the country in Lepidopterists' record books. Yet most of this information will never be available to scientists to whom it would be so useful. Old or long running data sets are of particular value. The study of micro-evolution and ecological genetics relies largely on observing and noting changes in form frequencies over long spans of time, and attempting to explain the causes of such changes.

Unfortunately for scientific research workers in the fields of ecological or population genetics, most evolutionary changes, even on a small scale, happen relatively slowly, taking years to become apparent. Most research money is supplied in three year grants, and so planning and obtaining financial backing for projects to look for evolutionary changes over several decades is problematic to say the least. However, if old data sets already exist in the entomological literature they can be used for comparison.

To give an example of the importance of form frequency data we can perhaps consider the case of the Peppered moth (*Biston betularia*). This moth is one of the most famous insects, and has been the subject of several hundred scientific papers.

The Peppered moth is polymorphic. The typical form is white, with a speckling of grey and black scales. Until the middle of the nineteenth century this was the only form known. In 1848 a black form of this species was captured in Manchester. The black form (called *carbonaria*) increased in frequency, so that by 1895, 98 percent of the Mancunian population were black. This black form spread to many parts of Britain, and increased in frequency in many areas, often becoming more common

than the typical form. A third form, called *insularia*, which was intermediate between the typical and *carbonaria* forms was also described. This form also reached appreciable frequencies in some populations. (The name *insularia* refers to a series of forms intermediate between *typica* and *carbonaria*, Lees and Creed 1977, Steward 1977.) The differences between all these forms have been shown to be genetic.

It was noted by the end of the nineteenth century that the black form was most common in industrial areas where pollutant gases such as sulphur dioxide killed lichens on trees, and where the fallout of soot pollution blackened the trees. Tutt (1896) suggested that the speckly typical form would be well camouflaged on lichen-covered trees, while the black form would be easy to see. Conversely, in industrial areas, where the trees are denuded of lichens, and are blackened by soot, the black form would be well hidden from predators, the typical form being more easily picked out. Tutt's suggestion was not confirmed by experiment until Kettlewell's famous work on the species over fifty years later (Kettlewell, 1955, 1956). Kettlewell showed that birds prey more heavily on the black form than the typical form in unpolluted woodland, the reverse being true in polluted woodland where the black form has the natural selective advantage. Kettlewell (1958, 1965) also showed that the frequency of the black form was closely correlated to regions of high pollution.

Despite the case of the Peppered moth being cited as one of the most famous cases of evolution actually being observed, and the fact that it appears in most modern biological text books which cover evolution, the details of the moth's ecology and behaviour are still being worked out, and there are still many questions to be answered in connection with it (see for example Mikkola, 1984; Howlett and Majerus, 1987; Brakefield, 1987). Yet, it must be wondered whether, if all the observations of this species, made and noted down by Lepidopterists since the *carbonaria* form first appeared, were available to scientists, the story would now be complete.

E. B. Ford, the "father of ecological genetics" wrote in 1975 that the failure to follow the early rise in the frequency of *carbonaria* was one of the great lost opportunities in science over the last 100 years. The frequency of the black form of this moth is now falling in many parts of Britain, following the enactment of anti-pollution legislation over the past thirty years (Clarke et al., 1985; Cook et al., 1986; Howlett and Majerus, 1987). So, there is a second chance to monitor changes in the frequencies of the forms, plot the decline, make predictions of the rate of decline given certain measured levels of selection, and so see if natural selection does indeed provide an explanation of the changes observed.

I have used the Peppered moth as an example because it is well known. However, I could have cited any one of several dozens of other species of British moth which exhibit interesting morphological variations. Indeed, it has perhaps been dangerous for me to concentrate on one of the few well-worked species because it may give the impression that similar amounts of form frequency recording and associated research have been carried out on other species. It has not. The Peppered moth has been worked on very much more than any other species, and although some others have received some attention, for many species no form frequency data are currently available (see Kettlewell, 1973 for form frequency data in melanic polymorphic species). In fact the tremendous amount of work that has been carried out on melanic polymorphism in the Peppered moth compared to other moths presents another pitfall: the results and deductions of research on this one species may have been extrapolated too widely. In many peoples' minds the phrases melanism and industrial pollution are inevitably connected. Yet, there is evidence that over half of British moths which today have melanic forms, had melanic forms prior to the industrial revolution. In some of these species, the frequency of melanic forms has increased with an increase in pollution levels, so they may be best described as examples of partial industrial melanism, as opposed to those species, such as the Peppered moth, in which the first occurrence of melanic forms at any appreciable frequency occurred subsequent to the industrial revolution. These later species can truly be called industrial melanics. Those in which the frequencies of melanic forms show no correlation with pollution levels are simply not industrial melanics. They may be called ancient or relict or rural or geographic melanics, depending on their biology, ecology and distribution. However, the reasons that they are polymorphic will be different from those leading to melanic polymorphism in fully or partially industrial species. It is therefore imperative that work is carried out on a range of other species, lest the mere presence of a melanic form of a species causes it to be automatically classed alongside the Peppered moth in an evolutionary sense, without any attempt being made to determine the evolutionary mechanism responsible for the melanism. The first step is to obtain and make available form frequency data on as wide a spread of polymorphic species as is possible.

Obviously those species in which more or less distinct forms occur are the most easy to study because the forms are easy to identify and count. Table 1 gives a list of Lepidoptera species which are relatively easy to score and for which form frequency data is likely to be needed and interesting. The list is not exhaustive, but contains many species for which I am sure data sets already exist in many Lepidopterists' record books.

Table 1. Lepidoptera with more or less distinct forms for which form frequency data is needed.

Species	Type of variation	Species	Type of variation
<i>Lasiocampa quercus</i>	melanism	<i>Laothea populi</i>	gc. grey or pinkish brown
<i>Tethea ocellaris</i>	melanism	<i>Peridea anceps</i>	melanism
<i>Polyploca ridens</i>	melanism	<i>Lymantria monacha</i>	range of melanic forms
<i>Idaea aversata</i>	banded vs unbanded	<i>Eilema griseola</i>	fwg gc. yellowish or grey
<i>Chloroclysta siterata</i>	range of forms inc. melanic	<i>Euplagia quadripunctaria</i>	hwg gc. yellow, orange or red
<i>Chloroclysta citrata</i>	range of forms inc. melanic	<i>Callimorpha dominula</i>	fwg. spot number and strength of hwg pattern
<i>Thera obeliscata</i>	range of forms inc. melanic	<i>Agrotis segetum</i>	melanism
<i>Hydriomena furcata</i>	range of banded and unbanded forms of melanic	<i>Noctua pronuba</i>	wide range of forms
<i>Eupithecia vulgata</i>	melanism	<i>Noctua comes</i>	wide range of forms
<i>Eupithecia icterata</i>	fwg. bicolorous vs multicolorous	<i>Xestia castanea</i>	fwg. gc. ochreous-grey vs reddish-orange
<i>Chloroclystis rectangulata</i>	melanism	<i>Orthosia gracilis</i>	range of colour forms from off-white through pinks to red
<i>Semiothisa brunneata</i>	melanism	<i>Orthosia gothica</i>	gc. grey vs grey flushed with reddish
<i>Angerana prunaria</i>	range of colour and pattern forms	<i>Orthosia incerta</i>	range of forms inc. melanic
<i>Odontoptera bidentata</i>	melanism	<i>Allophytes oxyacanthae</i>	melanism (note, 3 forms; typical, intermediate, melanic)
<i>Selenia dentaria</i>	melanism	<i>Antitype chi</i>	melanism
<i>Biston betularia</i>	melanism	<i>Eupsilia transversa</i>	fwg spot and satellite colours vary
<i>Lycia hirtaria</i>	melanism	<i>Xanthia icteritia</i>	variation in extent of fwg markings
<i>Apocheima pilosaria</i>	melanism	<i>Xanthia ocellaris</i>	fwg homogeneous vs well patterned
<i>Apocheima hispidaria</i>	melanism	<i>Omphaloscelis lunosa</i>	wide range of gc.
<i>Agriopsis leucopharia</i>	range of forms inc. melanism	<i>Craniophora ligustri</i>	melanism
<i>Agriopsis marginaria</i>	melanism (note vestigial winged females may also be scored)	<i>Acronicta aceris</i>	melanism
<i>Erannis defoliaria</i>	range of colour and pattern forms inc. melanics (note wingless females may be scored)	<i>Acronicta leporina</i>	melanism
<i>Menophra abruptaria</i>	melanism	<i>Acronicta alni</i>	melanism
<i>Peribatodes secundaria</i>	melanism	<i>Acronicta megacephala</i>	melanism
<i>Deileptenia ribeata</i>	melanism	<i>Acronicta rumicis</i>	melanism
<i>Paradarisa consonaria</i>	range of forms inc. melanics	<i>Acronicta menyanthidis</i>	melanism
<i>Serraca punctinalis</i>	melanism	<i>Cosmia trapezina</i>	wide range of gc.
<i>Boarmia roboraria</i>	melanism	<i>Apamea monoglypha</i>	range of gc. forms inc. melanic
<i>Ectropis bistortata</i>	melanism	<i>Apamea crenata</i>	melanism
<i>Ectropis crepuscularia</i>	melanism	<i>Nonagria typhae</i>	melanism
<i>Alcis repandata</i>	range of unbanded, banded and melanic forms	<i>Chilodes maritimus</i>	variation in pattern on fwg
<i>Hylaea fasciaria</i>	gc. reddish or greenish	<i>Colocasia coryli</i>	melanism
<i>Stauropus fagi</i>	melanism		

Helen Marcan's article is useful to illustrate how information on variations in insects should be published if it is to be valuable to later workers interested in the species in question. Obviously it is important that the species and variants being considered should be correctly identified. There are a number of errors in Helen Marcan's identifications, but, as Helen had the good sense to provide drawings of the ladybirds in question (and the editor had the good sense to find space for them) this is of relatively little consequence (see Majerus, 1990). If there is any doubt of the name of a form, try to either provide a drawing

of the insect or give a reference to a picture of the form (e.g. for the *carbonaria* form of the Peppered moth see Skinner, 1984, Plate 14.3). The year in which observations are made must be given, and each year should be treated separately. If a species is known to be bivoltine, it helps to give month or season counts separately. Location should be given, preferably with notes on the habitat types where samples were recorded.

Finally, and this is the one disappointing omission of Helen Marcan's article, give the numbers of each form present in the sample. Note, for statistical analysis it is important that actual counts are given rather than percentages or proportions. Many writers give data as percentages as this makes life easier for the reader. This practice is fine as long as the number in the total sample is given as well. (The average reader does not want to get out a calculator to be able to understand a data set, a research scientist will not mind doing so.)

The question then arises, how should one go about publishing data? This is particularly relevant now that publishing space is at such a premium. I would suggest, therefore, that accuracy and brevity are the things to go for. Table 2 sets out three sets of my own data in a form which I think would both be useful to research workers, and would be acceptable to at least some journal editors. Because of the small numbers of the red form recorded in any one year, it is not possible to compare the frequencies of the red form between years statistically. Consequently, some editors may require the table to be condensed to show just the sub-totals for each locality.

Depending on the depth of background knowledge, the detail of analysis, and the importance and strength of deductions and conclusions, a variety of journals could be approached. For shorter data orientated articles, the *Bulletin of the Amateur Entomologists' Society*, the *Entomologists' Gazette*, the *Entomologist's Monthly Magazine*, the *Entomologist's Record and Journal of Variation*, the *British Journal of Entomology and Natural History*, and the *Entomologist* are all worth trying. Longer articles could be sent to journals such as *Heredity*, the *Biological Journal of the Linnean Society*, *Ecological Entomology*, or *Evolution*. Have a look at some past issues to help pick the most relevant.

In the end, it does not matter too much where data gets published as long as it gets published. Because of the advances made in biological abstracts and indexing, a good researcher should always be able to find your data eventually, if you get it into print somewhere (note: many local natural history society magazines are not abstracted). And if you cannot get your data published, then at least send a copy of it to a records centre or someone who has recently written on the subject and so is likely to be interested.

Table 2a. Records of the red form *ab. brunnea* Tutt of the Lime hawkmoth (*Mimas tiliae*) from five locations.

Year	Locality	Grid. Ref.	Number of <i>typica</i>	Number of <i>ab. brunnea</i>	Percentage of <i>ab. brunnea</i>
1966	Northwood	TQ 082906	5		
1967	"	"	7		
1968	"	"	17	1	5.6
1969	"	"	14	2	12.5
1970	"	"	4		
1971	"	"	19	2	9.5
1972	"	"	16	1	5.9
1973	"	"	5		
1974	"	"	4		
Sub total			91	6	6.2
1973	Englefield Green	SU996698	8	1	11.1
1974	"	"	5		
1975	"	"	5	1	16.7
1976	"	"	19		
1977	"	"	22	3	12.0
1978	"	"	24	2	7.7
Sub total			83	7	7.7
1975	Ringwood	SU185065	6		
1976	"	"	17	3	15.0
1977	"	"	12	1	7.7
1978	"	"	4		
1979	"	"	2		
1980	"	"	5		
1981	"	"	1		
1984	"	"	10	1	9.1
1986	"	"	5		
1987	"	"	9		
1988	"	"	3		
Sub total			74	5	6.3
1979	Keele	SJ823440	11		
1980	"	"	5	1	16.7
Sub total			16	1	5.9
1981	Cambridge	TL430600	10	1	9.1
1982	"	"	17	3	15.0
1983	"	"	9	2	18.2
1984	"	"	24	4	14.3
1985	"	"	14	5	26.3
1986	"	"	18	3	14.3
1987	"	"	12	2	14.2
1988	"	"	13	1	7.1
Sub total			117	21	15.2
Total (all localities)			381	40	

All basically green forms of *M. tiliae* were scored as *typica*.

For description of *ab. brunnea* Tutt, see Heath and Emmet, 1979, plate 1, figure 2.

Table 2b. Frequencies of three forms of the Pine beauty (*Panolis flammea*)..

Location	<i>typica</i>		<i>griseovariegata</i>		<i>grisea</i>		Total
	Male	Female	Male	Female	Male	Female	
N 1968	12	4	5	0	0	0	23
N 1969	10	0	4	0	0	0	14
N 1970	6	1	0	0	0	0	7
N 1971	9	1	6	0	0	0	16
N 1972	21	5	5	0	0	0	31
N 1973	7	1	4	0	0	0	12
N 1974	19	6	8	4	1	0	38
N 1975	30	6	19	4	2	0	61
N 1976	35	11	23	9	1	1	80
Total	149	35	74	19	4	1	282
EG 1972	2	0	0	0	0	0	2
EG 1973	9	0	1	0	0	0	10
EG 1974	7	0	0	0	0	0	7
EG 1975	6	1	0	0	0	0	7
EG 1976	14	1	1	0	0	0	16
EG 1977	6	0	0	1	0	0	7
EG 1978	9	1	0	0	0	0	10
EG 1979	2	0	0	0	0	0	2
Total	55	3	2	1	0	0	61
PH 1975	11	2	0	1	0	0	14
PH 1976	18	2	3	0	1	0	24
PH 1977	14	3	2	1	1	0	21
PH 1978	4	0	0	1	0	0	5
PH 1979	15	2	4	1	0	22	0
PH 1980	3	1	1	0	0	0	5
PH 1981	11	3	2	0	0	0	16
PH 1982	31	8	4	2	1	1	47
PH 1984	17	6	4	2	2	1	32
PH 1986	3	0	2	0	2	0	7
PH 1987	6	0	0	0	1	0	7
PH 1989	8	2	0	1	0	0	11
Total	141	29	22	9	8	2	211
K 1979	7	2	2	1	1	0	13
K 1980	9	2	2	0	0	1	14
Total	16	4	4	1	1	1	27

N — Northwood, Middx (approx grid ref.TQ082906)

EG — Englefield Green, Surrey (SU996698)

PH — Picket Hill, Hants (SU185065)

K — Keele University, Staffs (SJ823440)

Table 2c. Records of the unbanded and banded forms of the Riband wave (*Idaea aversata*) in Cambridge (grid ref. TL430699), 1981-1988.

Year	Unbanded	Banded	Total	Frequency banded
1981	119	22	141	0.156
1982	174	30	204	0.147
1983	79	13	92	0.141
1984	43	8	51	0.157
1985	50	6	56	0.107
1986	134	31	165	0.188
1987	202	59	261	0.226
1988	321	104	425	0.245
Total	1122	273	1395	0.196

(Note — moth traps were not operated for the same number of nights in each year!)

I hope that this article does persuade some of the members of our Society to go through their old note or record books and sort out and disseminate their data on the variations of the insects they have been interested in. I have talked in this article mainly about moths, but variations of significance to ecological and evolutionary geneticists occur in many insect groups. I have written elsewhere on variations in ladybirds (Majerus, 1985; Majerus and Kearns, 1989), but many other beetles show distinct variations, as do many bugs, aphids, bees, and so on. In fact few groups of insects do not show some easily scored morphological variation. Work on insect variation is not confined to the adult stage. Many insects have nymphal, larval or pupal colour variants and these too would repay attention. The frequency of forms within particular populations or localities is of paramount importance in the field of ecological genetics. You can help provide that data. There really is no other field in which the amateur enthusiast can contribute more usefully to scientific research with so little effort beyond that which they normally devote to their hobby.

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(In connection with the above article, members might like to know of, for it is well worth consulting, a recent issue of the *Biological Journal of the Linnaean Society* Vol. 39, No. 4, pages 301-371, for this issue deals entirely with recent research on the Peppered moth in a series of articles.—Editor.)

ECOLOGY BLUES

This is the flea
 That had the bug
 That did the rabbit
 That cropped the grass
 That held the ant
 That kept the blue
 That died in the field
 That man built.

Don McNamara (5537)

SOME HOLIDAY NOTES BY A SCOTSMAN IN WALES

by *E. Pickard (3928)*

In three weeks of sunshine my summer holidays this year were spent caravanning in North Wales.

At a camping site at Rhyl I was pleasantly surprised by the amount of butterflies to be seen. On arrival, a Red admiral was sighted on creeping thistle, but this was the only one seen during our stay, although later on in the week one was seen in a car park in the middle of town.

Exploring the dunes near the sea, I came upon a large colony of Gatekeepers, and as this was a new species to me I was delighted, but although they were very abundant on lucerne, they proved to be extremely difficult to photograph and I spent a frustrating morning trying to get some worthwhile pictures. Meadow browns flew in company with the Gatekeepers, while in a stand of creeping thistle there were numerous Small tortoiseshells.

Both Large and Small whites were common too, coming onto the dunes from where they had been prospecting the brassicas in nearby gardens. Common blues, a Wall and a Small copper made up the nine species which I recorded within a hundred yards square area at the campsite.

A trip to the Great Orme at Llandudno led to the discovery of a colony of Graylings in a sort of quarry. I had great fun trying to stalk them with my camera, but unfortunately the pictures were unsuccessful due to the nervousness of my subjects and my often precarious perch on the scree. I understand the Great Orme Grayling is a sub species but I really did not see any difference between this one and the Scottish insect with which I am familiar.

As my holiday was drawing to a close, we were nearing Chester on the way north, it was decided to pull into a picnic area. Here a Peacock was seen on ragwort and numerous Walls were in flight along the edge of a weedy field and basking on a fence.

Back in Scotland now, although the weather had not deteriorated, the only butterflies to be found at our camp site at Barns Ness, East Lothian, were Meadow browns, Common blues, Small heaths and Small coppers. I also took a plant census and it might be of interest to note that while at Rhyl I recorded 38 plants in the immediate vicinity of the campsite, I recorded 50 from Barns Ness.

On the last day of the holiday, before returning home to Aberdeen, we were shopping in Dunbar. While sitting in the car at the kerbside I noticed a large pale moth fluttering to the ground underneath the car in front. I dashed out and managed to secure a fine female Swallowtail moth which subsequently laid about 100 eggs.

REARING NOTES ON SOME SPANISH BUTTERFLIES

by Gareth King (8585)

During the spring and summer of 1989 whilst I was working in Madrid, weekend trips to the Sierra de Guadarrama or further afield were very productive. Nine species of butterfly larvae were found and about fifteen species of moth. Early May was especially productive, but by June the weather was hot — oppressively so — and most of the region was baked dry.

The following observations refer to some butterfly species not commonly reared in Britain.

Euchloe ausonia (Dappled white)

The larvae of this species were at first taken to be those of *Anthocharis belia euphenoides* (Moroccan orange-tip) and their identification was only verified later by the photographs of the two species given in *Biología y morfología de Las orugas* by Carlos Gómez de Aizpúrua. Confusion was due to two reasons; having seen *A. belia euphenoides* flying in Jaén at the same time as finding ova and also because I ignored the account of *E. ausonia* in Higgins and Riley because the distribution map did not tally with Jaén (southern Spain) nor did the flight time — it being given as June/July. According to Aizpúrua *E. ausonia* is distributed throughout Spain, whilst *E. ausonia simplonia* is restricted to the Central Pyrenees, the Catalan Pyrenees and the Cordillera Cantábrica. These accounts completely contradicted that of Higgins and Riley, who put *ausonia* as distributed in the Spanish mountains and *simplonia* as being found all over Spain and southern Europe into the Middle East. Aizpúrua puts *simplonia* simply as a subspecies of *ausonia* not as a species in its own right. To give Aizpúrua the last word, he cited the work of W. Back, 1979, who placed *ausonia* in three different groups according to location in Europe and North Africa; *crameri* Butler, 1869 North Africa, Portugal and Spain, S.E. France to Génova in Italy, *ausonia* Hübner, 1804 south-east Europe and *simplonia* Boisduval, 1828 in the western Alps, Pyrenees and the Cantabrian mountains. I think I can therefore say with some justification that my larvae were of *Euchloe ausonia crameri* having been collected from southern and central Spain.

Ova and young larvae of this Pierid were found on the Cruciferous plant *Biscutella laevigata* in late April and early May in Jaén, Granada and Balneario de Jabalcuz (provincia de Jaén) and on 20th May in San Rafael (Segovia), the latter find was on *Diplotaxis muralis*. Regarding the Andalusian stock there were problems finding *laevigata* in Madrid, but fortunately the larvae accepted other cruciferous plants without incident, specifically *Sisymbrium officinale* and *Sinapis arvensis*. As I

discovered on collecting trips the larvae are very cannibalistic. For this reason they were reared separately on cut sprigs of the foodplant in sponge-filled margarine tubs. As long as the food was kept fresh they did not wander. The larvae grew very quickly; the first larva shrunk and turned violet on 8th May ready to pupate. The fully-grown larvae were about 5cm in length, yellow with broad green stripes, a little larger than *cardamines*. From late May problems were encountered due to heavy rains which must have affected the suitability of the foodplant, giving the larvae digestive problems. For this reason only five larvae successfully pupated and of these, three died.

Aporia crataegi (Black-veined white)

Larvae were first found in San Rafael on 20th May, the majority being fully grown, although a small nest of younger specimens was also found. They were feeding singly or in small groups on hawthorn. At home in Madrid, larvae were found to do better on cut food in water rather than in plastic boxes. The first larvae pupated on 25th May. Another batch was discovered a few days later, this time on pear near the railway line in San Raphael. Typically, several larvae were parasitised. The first imago emerged on 12th June. All subsequent emergencies were released in Cercedilla (Madrid). Regarding initial sightings in the wild, butterflies were seen initially on 18th June, including a pair in cop. in San Rafael and also in Tablada (Madrid). Larvae of the next generation were found on pear in San Raphael on 16th July.

Colias croceus (Clouded yellow)

This butterfly is probably the commonest here in Central Spain. Imagines were seen on the wing from early February and were seen in all localities visited without exception. Five ova were collected in Villalba (Madrid) on 11th June, some of which were seen to have been laid by a female of form *helice*. They were laid on *Vicia tetrasperma*.

The larvae hatched on 14th and 15th June and were given the latter plant as well as *V. cracca*. They developed incredibly quickly, the first larva settling down to pupate on 28th June. Of the four butterflies that emerged, two were form *helice*. Subsequent finds of ova were in San Raphael on 18th June on *Lotus cornicalatus* and from Tablada on *Medicago falcata* on 1st July. Resulting larvae did not however survive. The incredibly high temperatures at that time of year made it difficult to keep cut food viable for any length of time.

Ipliclides podalirius feisthamelii (Scarce Swallowtail)

A day trip to Pueretollana (Cuidad Real) on 5th June was made especially enjoyable with the discovery of the larvae of this swallowtail not so very far from the belching Repsol Quimica chemical plant dominating this town in the foothills of the Sierra Morena. I was

searching for further *Saturnia pyri* (Great Peacock moth) larvae on the almond trees, but instead found five larvae of *Podalirius feisthamelii*. In Madrid, almond not being at hand, sloe was given instead which the larvae accepted with no problem, contrary to Friedrich's assertions.

The larvae were kept in a sunny window in a netting cage, at least until it got too hot. Again, this species was a quick feeder, the first pupating on 15th June. However, of the four pupae obtained, only two imagines emerged, the others died containing fully-developed butterflies. The perfect insect was released in Tablada.

Melitaea trivia ignasti (Lesser-spotted fritillary)

Five larvae of the first brood of this species were found on Mullein (*Verbascum thapsis*) near San Lorenzo del Escorial (Madrid) on 6th May. They were mostly fully-grown. Their waxy chitinous "coat" caused the loose "hairs" of the plant to adhere to their bodies making them very difficult to discover. Another was found in San Raphael on 20th May. Four out of the six larvae pupated but none produced adults.

Melitaea cinxia (Glanville fritillary)

San Raphael was becoming a favourite weekend haunt due to the wildlife, and as a refuge from the omnipresent Madrilenian heat. It was in a wet meadow on 17th June that a dozen larvae of this nymphalid were collected from *Plantago media* (plantain).

All were final instar. Pupation began in earnest on 23rd June. Again, the heat became a problem as a few pupae died before imagines began to emerge on 1st July. Although breeding on might have been a possibility it would have been too difficult to grow plantain with temperatures daily into the forties.

Syrichthus proto (Sage skipper)

Ten larvae were collected from Sage growing in rocky hills near Balneario de Jabalczuz (Jaén). All but one of the larvae were immature and feeding in rolled-up leaves. Sage proved difficult to find in Madrid — no garden centres stocked it — but plants were eventually located at the local station. However, any foodplant problems were solved for me as the majority of the larvae were parasitised. The surviving larvae ate very little at the best of times but it was noticed that for a period of some weeks throughout June they were quiescent, remaining in their leaf shelters and not eating. That is to say they have an aestivating stage. Two of the larvae had pupated by 28th June still in their leaf shelters. A male emerged on 6th July, a second on 14th July, both being released.

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ALTERNATIVE LARVAL FOODPLANTS FOR THE ADONIS AND CHALKHILL BLUE BUTTERFLIES

by Alan Butler (7903)

A few years ago I was faced with the dilemma of running desperately low of plants of the horseshoe vetch (*Hippocrepis comosa*), the larval foodplant of the Adonis blue (*Lysandra bellargus*). I had several larvae rapidly feeding up and quickly consulted several books and called several friends to ask advice. Several people had suffered with the same dilemma, but none were able to offer alternatives. I tried as many different vetches as I could find in my area. Still no luck. Then I happened to mention this problem to my friend, Professore Eric Lees in Yorkshire, who informed me that previously he had reared both the Adonis and the Chalkhill blue (*Lysandra coridon*) on crown vetch (*Coronilla varia*). I quickly dispatched my larvae by post, and in due time received my pupae back. I had in fact suffered no losses and all pupae hatched into perfectly normal imagos.

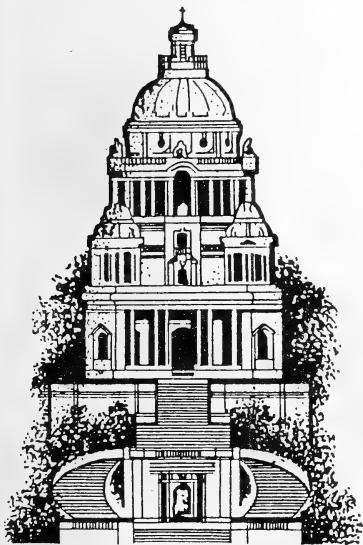
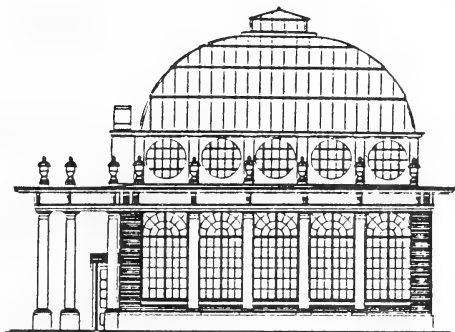
Perhaps this information is of use to other people. I personally have found the horseshoe vetch to be a difficult plant which does not grow fast and tends to rot in the winter. However, before switching over to crown vetch, a word of warning: it grows extremely fast and spreads like wildfire if left unchecked. I found it to be as difficult to contain as mint!

Lastly, I assume that both species of butterfly will lay on this plant, but I must say that I have no direct experience of this. I would be interested to hear from others who have had similar experiences.

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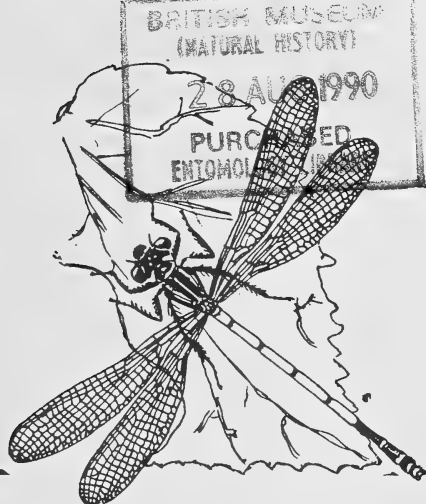
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Dr. C. BETTS, 'Roseland', Poltimore, Nr Exeter, Devon EX4 0AT.

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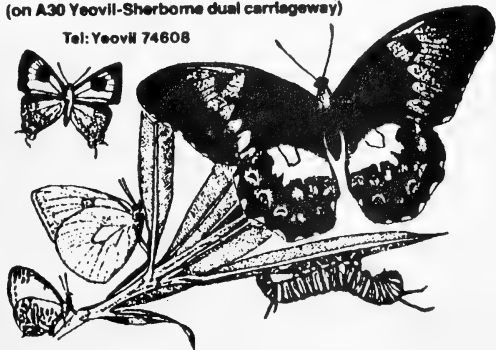
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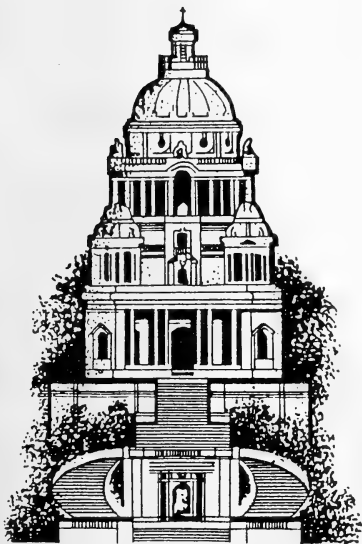
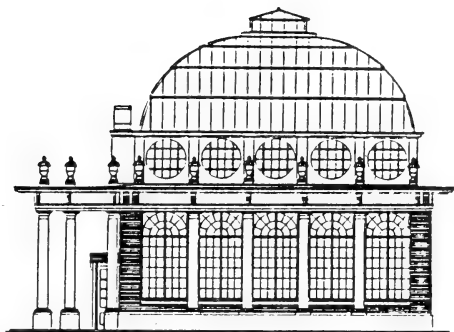
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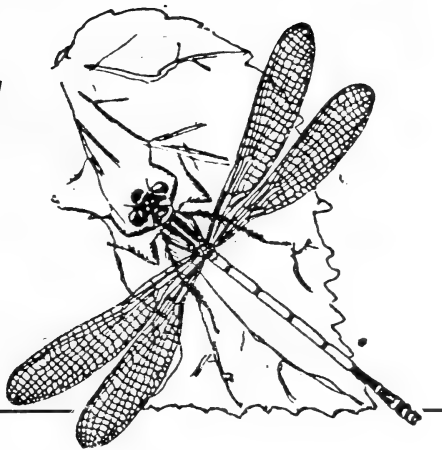
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AES BULLETIN

No. 371



LETTER TO THE EDITOR

Dear Brian,

I do so hate to gripe, but one look at the Wants and Exchange list No. 170 (June 1990) had me rather disappointed.

Whose idea was it to bang the prices up? . . . it's certainly got rid of all the livestock sellers as well (or is it just coincidence that **no-one** has any livestock to sell at the moment?).

I thought that this was a non-profit making organisation. Going back to last year, the same thing happened with Duncan Reavey and Mark Colvin's *Directory for Entomologists*. Someone set a silly registration price (small charge of £25), for the Trade section and as a result all we got were 24 well established traders whom we all know and love, but surely the mission was to bring to light all the little people in the field and compile a *comprehensive* Directory for the members. (Yes, I know there was a limit as to how many dealers could be included . . . even more reason to list the unknowns instead of the well-known.) Surely there is enough dosh in the kitty to help subsidise some of these facilities for the members, instead of banging up the charges and wiping the slate clean of Traders and ads.

I am (technically) a trader as I regularly sell a bit of livestock (although this is not my employment). After I have sold my £1.50 a dozen caterpillars and given a few away for nothing and paid postage and packaging and spent a fortune on rearing containers and plants and spent hours rearing the livestock Where am I going to find my £10 for three lines?

Yours sincerely,
Paul W. Batty (8926)

OUR ANNUAL EXHIBITION

This will again take place at Kempton Park Racecourse and this year we have been assured by the Kempton Authorities that the catering arrangements will be fully operational.

A NOTE ON THE SOUTHERN HAWKER IN STAFFORDSHIRE

by Jan Koryszko (6089)

Over the past few years the Southern hawker dragonfly (*Aeshna cyanea*) has been recorded more frequently at Parkhall Country Park, than it has in other areas where you would expect to find it.

The reason for this is that Parkhall has quite a lot of small ponds in the area which this species is fond of. Mike Hesketh, a ranger at the park, who is a keen naturalist, said he has been seeing the Southern hawker quite often, and he took a specimen for confirmation because it can sometimes be mistaken for the Common hawker (*Aeshna juncea*) which also frequents the area.

It will be interesting to see if the Southern hawker will still remain common in the area after the hot summer of 1989, when a number of small ponds dried out, which may affect the status of this species in the area, and no doubt other species also in Staffordshire.

HELP AT HAND FOR RARE BUTTERFLY

from habitat

A boost to the numbers of rare Northern brown argus butterfly can be expected from a conservation project being carried out at the St Abb's Head National Nature Reserve in Berwickshire. The work of fencing off a steep hillside on which the butterflies live has been organised by the Scottish Wildlife Trust (SWT) and the National Trust for Scotland. The work is based on the advice of an expert researcher who found that the rockrose, the preferred plant on which the butterfly lays its eggs, was being overgrazed by sheep. It is hoped that by excluding the sheep the rockrose will flourish thus providing more egg-laying sites.

The Northern brown argus was one of the first butterflies to recolonise Britain following the last Ice Age and is confined to Northern Britain. Its numbers are decreasing and while the reasons are not fully understood, the work being carried out at St Abb's will alleviate the decline locally. Details from John Crichton or Andy Reynolds. Scottish Wildlife Trust. Tel: 031-555 1801.

**THE
AMATEUR
ENTOMOLOGISTS' SOCIETY**



**ANNUAL REPORTS FOR 1989
OF THE SOCIETY AND ITS ASSOCIATED BODIES**

OF THE COUNCIL

Membership of the Society as at 31st December 1989 was 1,838 members, and this comprised 10 Honorary, 48 Life, 11 Affiliated/Exchange, 1651 Senior and 118 Junior Members.

The Society enrolled 269 new members. Taking into account the loss of members each year, 1989 has shown a deduction compared with the previous year, mainly due to the increase in subscription.

The high turnover of members creates a particularly heavy administrative load and we are especially grateful to our Registrar, Mrs Cribb, for all her work on our behalf.

After much debate, the Council decided to increase the number of *Bulletins* to six per year, beginning in 1989. The Society adopted a quarterly format for the *Bulletin* in 1963, and Council felt that members would appreciate a more frequent publication. The six issues, edited by Mr B.O.C. Gardiner contained 244 pages of text and numerous illustrations. During the year the Society published *A Directory for Entomologists*, edited by Mr D. Reavey and Mr M. Colvin, and it is hoped to update the *Directory* on a two to three year period. The Council met on five occasions during the year at the Central Hall, Westminster. The AGM was held at the rooms of the Royal Entomological Society, South Kensington. The Meeting was chaired by our President, Dr D. Lonsdale, who then gave a fascinating talk on "Barking up the Right Tree" (A Natural History Tour).

The Annual Exhibition was again held at Kempton Park Racecourse, a full report of which appeared in the June *Bulletin*.

Council reports, with much regret, the death of several members, including Capt. A.R. Hallett, W. Plant and C.J. Harding.

C.E. Penney
Honorary Secretary

OF THE TREASURER

As expected, last year's results show significant changes to the Society's General Fund with expenditure increasing by £4,124 to £16,580, and income increasing by £4,227 to £17,514. The increase in expenditure was largely due to improvements to membership services by publishing two additional *Bulletins*, the associated Wants & Exchange lists and the Directory for Entomologists, although inflation also played its part. Most sources of income improved, and the only disappointing feature was a reduction in the Society's membership. Whilst it was anticipated that the increase in subscription rates (the first in eight years) to offset inflation and to improve services to members, would result in some losses, the numbers failing to renew their membership was disappointing. However, the Society's finances remain in a healthy state, and if membership improves this year it may be possible to increase still further the number of *Bulletin* pages printed.

On the publications front, the sale of handbooks and other publications was disappointing, with the gross value of sales down from £6,376 to £4,473. This was undoubtedly in part due to the current economic circumstances in the UK with trade orders significantly lower. However, it was also due in part to a lack of new and revised publications, but there should be a significant improvement later in 1990 with the publication of at least two handbooks (the revised *Coleopterist's Handbook*, a new *Conservation Handbook* and a revised *Praying Mantids* leaflet). The trading surplus for the year was £1,260, and with the addition of Bank account interest the Publications Fund stands at £41,125 with sufficient cash reserves to meet current plans for new publications.

R.A. Fry
Honorary Treasurer

OF THE CONSERVATION COMMITTEE AND OF THE SOCIETY'S REPRESENTATIVE FOR THE CONSERVATION OF BRITISH INSECTS

Committee meetings and organisation

The AES Conservation Committee met twice in 1989; in March and November. During the year, one Committee member, Mr C. Eastwood, who had worked as the Committee's Exhibitions Organiser, resigned and has not yet been replaced. The JCCBI met twice, also in March and

**INCOME AND EXPENDITURE ACCOUNT
FOR THE YEAR ENDED 31st DECEMBER 1989**

EXPENDITURE				INCOME		
1988		1989		1988	1989	
£		£	£	£	£	
Bulletin Costs:				Subscriptions:		
236	Editorial	246		7592	Ordinary and Affiliate	16019
5885	Printing	7096		357	Junior	472
2421	Despatch	3701		184	Life Membership Fund	288
174	Indices	190				
			11233	1145	Donations:	10779
						1061
Membership Services:				254	Enrolment Fees:	327
—	Entomologists' Directory	354				
550	Membership List	540				
192	Wants & Exchange Lists	255				
			1149	1495	Investment Income (Gross):	
					National Savings and Midland Bank	
					Accounts	2583
Administration etc:				Other Income (Net):		
505	Stationery and Notices	497		1505	Advertising Revenue	2029
195	Postage and Carriage	204		687	Annual Exhibition	692
1040	Registrar's Fees	1100		68	Badges	43
588	Meetings Expenses	780				
—	Study Groups Support	25				
229	Depreciation	823				2764
227	Insurance	283		13287		17514
82	Sundry Expenses	189				
			3901			
132	Conservation:	297				
2456		16580				
831	Surplus Income to General Fund:	934				
<u>3287</u>		<u>17514</u>		<u>13287</u>		<u>17514</u>

**PUBLICATIONS TRADING ACCOUNT
FOR THE YEAR ENDED 31st DECEMBER 1989**

EXPENDITURE				INCOME		
1988		1989		1988	1989	
£		£	£	£	£	
New and Revised Publications Costs:				6376	Sales (Gross)	4473
3	Editorial etc.	170				
626	Printing	990		—	Increase in value of stocks:	—
1325	Decrease in value of stocks:	264				
2550	Selling and other expenses:	1789				
1872	Trading Surplus to Publications Fund:	1260				
<u>6376</u>		<u>4473</u>		<u>6376</u>		<u>4473</u>

R.A. Fry, Dip.E.E., C.Eng., M.I.E.E.
Hon. Treasurer.

**The Report of the Auditors to the Members of the
Amateur Entomologists' Society**

We have examined the records of the Amateur Entomologists' Society and, in our opinion, the Balance Sheet gives a true & fair view of the state of affairs on 31st December 1989 and of the Income and Expenditure for the year ended on that date.

A.J. PICKLES, F.C.A.

**AMATEUR ENTOMOLOGISTS' SOCIETY
BALANCE SHEET AS AT 31st DECEMBER 1989**

1988	1989	1988	1989
£	£ £	£	£ £
General Funds:		Fixed Assets:	
11030	Balance at 1st January 1989 26861	2238	Office Equipment at cost 4113
	<i>Add:</i> Surplus income (deficit) for year 934	—	<i>Less:</i> Depreciation to date 823
15000	Bequest from P. Crow —	2238	
26861			Investments at cost:
	27795	660	£712 Treas. 12¾% 1995 660
4324	Life Membership Fund: 4819	1260	£1470 Treas. 9½% 1999 1260
261	Ansorge Award Fund: 281	150	109 M&G Charifund Income Units 150
28095	Crow & Hammond Trust Fund: 60434	55415	NSB and Midland Bank Investment accounts 85140
	Creditors:		87210
2737	Advance Subscriptions 3048		Current Assets:
273	Advance Donations 302	23	Stocks at cost 342
	3350	500	Sundry debtors 820
		2255	Cash at Bank Current Account 4967
		50	Cash in Hand 50
			6179
<u>62551</u>	<u>96679</u>	<u>62551</u>	<u>96679</u>

PUBLICATIONS FUND AT 31st DECEMBER 1989

1988	1989	1988	1989
£	£ £	£	£ £
34663	Balance at 1st January 1989 37811		Investments:
1872	<i>Add:</i> Trading Surplus for the year 1260	16881	NSB and Midland Bank Investment accounts 21935
1276	Interest — NSB and Midland Savings Accounts 2054		Current Assets:
37811		16265	Stocks at lower of cost or valuation 16000
2550	Creditors: 41125	6340	Sundry Debtors 4461
	1789	875	Cash at Bank 518
<u>40361</u>	<u>42914</u>		20979
		<u>40361</u>	<u>42914</u>

STUDY GROUPS' FUNDS

1988	1989	1988	1989
£	£ £	£	£ £
(178)	Balance at 1st January 1989 381		Current Assets:
559	<i>Add:</i> Surplus Income for year (Deficit) (21)	351	Cash at Bank 295
		30	Cash Floats 65
<u>381</u>	<u>360</u>	<u>381</u>	<u>360</u>

November, and the Society's representative, Dr D. Lonsdale, attended both meetings. The JCCBI, in turn, was represented at the monthly meetings of Wildlife Link by Mr S. Brooks. The appointment of the JCCBI's Conservation Officer, a new post which was mentioned in last year's report, took place in September, but the appointee resigned after only several weeks and the post is now again vacant.

Local representation

Dr C.R. Betts, our Habitat Conservation Officer, has received twelve offers of help in response to his recruiting programme for local conservation representatives within the Society. He is preparing a computer database of local information which some of the representatives have provided. There is a need for more volunteers throughout the British Isles, especially in eastern England, Wales and everywhere north of the Humber.

The Nature Conservancy Council

The Government's plan to split the NCC into three autonomous bodies, representing England, Scotland and Wales, has met with much criticism from entomologists and others because it threatens to weaken or eliminate some important central functions. These include the administration of the Invertebrate Site Register. Also the costs of setting up separate administrations are unlikely to be adequately met.

Sites and species of special interest

The JCCBI is continuing its species' surveys, but there have been problems with funding, and thus rather less progress than in previous years. However, Mr P. Waring of the NCC has produced important information on the status of a number of endangered moth species. Insects which have come under special consideration by the JCCBI include the Netted carpet moth, the New Forest burnet, the Large blue butterfly — which continues to flourish in its reintroduction site — and the Manx grasshopper which has been under threat from a golf course development proposal. The Manx site was the subject of a letter sent on behalf of this Society. Several other sites under threat have been of concern to us, including Orlestone Woods in Kent, St Catherine's Hill in Hampshire and Yateley Common in Surrey. On a more positive note, many other sites are being documented for their habitat value and hence possible protection. This work is being done both by individual amateurs and by others working under contract to such organisations as the Forestry Commission. A notable effort in this field of activity is the work of the National Trust's biological survey team.

Legislation

An interesting aspect of the year's legal developments has been the extent to which laws can be used flexibly and appropriately. The Wildlife & Countryside Act (1981) proved to be more flexible than it had seemed, when the NCC was able to obtain protection against unlicensed trading for a long list of vulnerable butterfly species without making their collection illegal. On the other hand, the Berne Convention which seems so valuable in its emphasis on habitat protection, has not been flexible enough to allow anti-collecting measures to be waived in cases where they are not essential. This problem underlies the NCC's refusal to allow Berne protection for the Marsh fritillary and the Southern damselfly.

Exhibitions and conferences

Our Committee mounted three displays; at the Devon Wildlife Trust's "Garden Party" in June, at a symposium of the Royal Entomological Society of London in September and at our own Annual Exhibition. We thank Mr P. Goodson and Dr N.M. Collins for their help in connection with the Devon and RESL events respectively. In April 1989, Dr Lonsdale attended a most interesting conference on conservation held by the British Ecological Society, and both he and Mr R.A. Fry attended an equally fascinating symposium; that of the RESL — already referred to — which was the first international meeting on insect conservation of its kind.

Publications

Considerable progress has been made with the Society's book on insect habitat conservation. Mr Fry compiled first drafts of nearly all the contributions from the authors whom he approached, and large parts of the text were edited by him and by Dr Lonsdale. They have been greatly helped by Mr A.E. Stubbs, one of the principal authors, who has acted as technical editor. Unfortunately, the workload on Dr Lonsdale has prevented the further publication of *Insect Conservation News*, but this should be remedied early in 1990.

Conservation field meetings

These have been largely suspended, pending the appointment of a Field Meetings Organiser, but Mr J.E. Cooper led another in the series of very interesting and well-attended meetings near Huntingdon in May.

C.R. Betts
D. Lonsdale

STUDYING BUTTERFLIES IN FRANCE

by David Corke (2962)

Judging from the frequent articles about butterflies seen on continental holidays, and the trays of specimens on show at the entomological exhibitions, France is becoming an increasingly popular hunting ground for British butterfly enthusiasts. This is not surprising, since France still has many rural areas with traditional agriculture and an abundance of butterflies. Intensive agriculture has destroyed most habitats in the flat areas suitable for arable prairie farming, but the favourite holiday areas are the hilly regions which have always had the richest fauna. I must say I find some articles by British butterfly collectors in France a little annoying: they are no more than a diary of the holiday — species collected are listed but often not enough detail is given to make the records useful for people and conservation organisations compiling local lists. The French are now becoming much more interested in, and concerned about, their butterfly fauna and we visitors should try to make our observations useful. The purpose of this article is to suggest some preparations you might make when planning your next trip to France, in the hope that you will then be able to add significantly to the study of French butterflies.

Where to stay

In my experience, it is much better to go to one place and stay there as long as you can afford, rather than dashing uncomfortably from one camp-site to the next. Rental cottages called *Gîtes de France* cost very little more than staying on camp-sites, are always in rural areas (usually owned by a small-scale farmer) and will give you a proper home base — allowing you to run a mothtrap, fill a table top with pots of larvae or pop a butterfly in the 'fridge for a few minutes as an aid to photographing it. (OK, I know it's cheating, but it works!)

Maps

Another advantage of a single base for your holiday is that it makes it worth buying proper maps for your locality — and nothing helps the search for butterflies so much as a decent map. Michelin maps are fine for car travel, but the only maps worth buying for use on foot are IGN ones. IGN is the French equivalent of Ordnance Survey and maps for the whole of France are available in 1:100,000 (green series), 1:50,000 (orange series) and 1:25,000 (blue series) scales. You can usually get the 1:100,000 maps in decent British map shops, but it is best to buy the others when you reach your destination in France. In the Pyrenees (one of the best butterfly areas) the 1:50,000 maps are produced in larger sheets (*cartes de randonnées* series) which work out cheaper and contain

better foot-path information. There are also modern 1:50,000 scale geology maps for many of the most interesting areas. Careful study of a geology map is always worthwhile: a change in underlying geology is usually reflected in a changed pattern of land-use and vegetation and a quite different set of butterflies.

Grid-references

While IGN maps are at least as good as British OS maps of the same scale, the grid reference system is much more of a problem. Anyone publishing lists of British observations would give a grid-reference so that the records could be added to the standard dot-distribution maps. There are similar local mapping schemes under way in France and we should try to make our records detailed enough to be mapped.

IGN maps are not criss-crossed with grid-lines like OS ones. Many French distribution mapping projects began using the European-wide UTM system of grid squares, which are not marked on many French maps and involve "compensation zones" in parts of France, where the squares are not square (it is impossible to make a square grid cover such a wide area as the whole of Europe). Most present mapping schemes use a system of "grades rectangles" which are 28 km east/west and 20 km north/south. These rectangles correspond with the sheets of the orange series 1:50,000 maps. The 1:25,000 maps cover the east or the west half of a grade rectangle (12 × 20 km) and are numbered accordingly.

These rectangles are too big for most local mapping schemes and are subdivided into four or 32 smaller rectangles (not marked on the maps!). To make matters worse, the edges of most IGN maps are marked with scale lines of two different systems of latitude and longitude and at least three different grid-referencing co-ordinates! The message is this: do not attempt to use grid-references, even if you don't get it wrong, the reader of your records will not know which system you used.

The locality you recorded in should be specified thus:

1. Département name and number (equivalent to an English county). There are 94 départements in mainland France and all have a standard two digit number and name. The number appears as the last two digits on a resident's car number-plate and as the first two digits of any post-code for a town or village.
2. Commune name: equivalent to a town or parish in England. These are clearly labelled on road signs and the commune limits marked clearly on all IGN maps.
3. A description of the site including a mention of the map you were using and a feature marked on that map (eg Hillside 1 km east of Centre de Vacances, Commune of Oust, Dept Ariège (09) on 1:25,000

map 2047 ouest). This will enable anyone to place your record in the correct square or rectangle for whichever recording system is in use.

Identification Books

I suspect almost everyone will use one or other of the three Collins Guides. The newest (New Generation Guide to the Butterflies and Day-flying Moths of Britain and Europe, by Michael Chinery) has several advantages. It includes the day-flying moths, which the others do not. It includes many caterpillars, pupae and eggs, although I am not sure the pictures are good enough for very certain identification. The distribution maps have been re-drawn and use visible red ink instead of the invisible yellow of the pocket guide by Higgins & Hargreaves, or hiding the maps at the back as in the original Higgins & Riley. A lot of very condensed information is packed on the identification pages — but the sections on biology (very interesting though they are) add unnecessary weight if what you want is a light pocket guide. Whichever field-guide you use, some species (certain blues, pyrgine skippers, smaller fritillaries and *Erebias*) are likely to need some specimen collecting for absolute certainty, although in most cases, really good photographs of upper and underside will be enough.

There are several French books that have a great deal to offer and which I have not seen reviewed in any British publication: perhaps typical of our insular attitude.

(Editor's comment: This is due to French publishers commercial practices. They do not send us review copies, nor give reasonable trade terms to English bookdealers, thus making it very difficult and expensive to purchase French published books in England. I will gladly publish any review received.)

If you are seriously interested in French butterflies you should think about reading the following:

Les papillons de jour et leurs biotopes by the Ligue Suisse pour la Protection de la Nature. This is not a field guide: it weighs a ton! But it is the most beautiful, most scientifically accurate and most useful book I know for any European country's butterflies. It has only two snags for the user in France: since it is intended for Switzerland it omits some species found around the Mediterranean or in the Pyrenees and not the Alps. Also it only treats the "true" butterflies, omitting the skippers. But the 182 species it does cover have beautiful paintings of the adults, and colour photographs of every stage (including adults) plus really accurate information on habitat preferences, flight times and foodplants. This book will cost you £45, but for over 500 pages, 25 big plates and many hundred colour photographs, this is dirt cheap. If you read German better than French, there is a German edition for the same price.

The Guide de Papillons d'Europe is a French edition of Higgins & Riley's Collins Field Guide — so why pay twice the price for a French edition? It has a few advantages: unlike the present English edition, it has been revised recently (1988) and contains quite a lot of new information in the text (but not on the maps, which are unaltered). Also the classification has been revised to a standard now common in much of Europe, which you may or may not like (eg *Iphiclides* split into two full species and the genus *Polyommatus* made huge).

Finally *Sauvons les Papillons* published by Duculot is a French version of a German book, *Aktion Schmetterling*. It is about the biology and conservation needs of butterflies and moths in Europe (with special reference to France) and is full of splendid colour photographs. Not an identification guide, but a good read which makes practising one's French worthwhile.

You should be able to purchase any of these books in England from Classey's — don't expect to find the Swiss book in French bookshops, the others you might (but French VAT on books makes them dearer).

French journals

Unlike Britain, French entomologists have a scientific journal devoted to Lepidoptera. It is called *Alexanor* and has published local distribution lists for many parts of France. It costs 190 francs a year to subscribe (write to Alexanor, 45 rue de Buffon, F-755005, Paris). If you can get to a library that has a complete set (eg the Royal Entomological Society Library in London), a search for existing records from the area you plan to visit will make your preparations more interesting.

French local natural history societies

Many regions and départements of France have their own natural history societies and most are engaged in biological survey work. Many organise day field-trips on which visitors are welcome (often being asked to pay a few francs). Look for advertisements in the local Syndicat d'Initiative (Tourist Office) or local museum. Some regions even have special nature centres with exhibitions (Maison de la Nature et de l'Environnement or some similar title).

When you get home

After the photographs or specimens are all sorted out and identified, what should you do with the results? If, while on holiday, you have made contact with the relevant French society, it is a courtesy to send them your records (even local societies are likely to have someone who can read English, if you don't feel up to writing in French). But please also publish your observations somewhere — in a French journal if you can

write French or an English one (eg this *Bulletin*) if not. Either way, the records will then be "in the system" and be listed in the worldwide abstracting journals where anyone interested can track them down.

Finally

My own favourite corner of France is Ariège, which I visit every year and where I am working with the local natural history society to produce the first ever list of butterflies for the département. If your travels take you (or have already taken you) to Ariège, do please send me details of your observations. Bonne chasse et bonnes vacances!

BUMBLEBEE SURVEY PROJECT — HELP WANTED

This project aims to identify habitats of value to bumblebees and to formulate management recommendations for use by farmers and conservationists. Bumblebees are useful insects because they pollinate some crops as well as wild flowers. In recent years a number of species of bumblebee have disappeared from parts of the country. A shortage of suitable nesting sites may have contributed to this decline. In 1989 over 100 records of bumblebee nests were received, providing much information about the kinds of places bumblebees choose to start their colonies. Following this success the survey is running again in order that particular aspects of nest site location can be investigated. Nest forms are available free (colour identification charts are £1.50) from Mike Fussell, Dept. of Zoology, Downing Street, Cambridge CB2 3EJ.

AGAINST THE ROADS

Cecil Parkinson's seven billion pound (our money!) road programme continues to raise serious concern and very relevant criticism. In a recent editorial in the NCC's publication *Topical Issues* it is pointed out that the road programme will affect 162 SSSIs, one National Nature Reserve, three Local Nature Reserves as well as many other areas of good wildlife habitat. In view of the many conservation sites already lost it is quite clear that the Department of Transport gives a very low priority to conservation.

The NCC has had prepared a leaflet *The treatment of nature conservation in the appraisal of trunk roads* and this is available from their Planning and Policy Branch, Northminster House, Peterborough PE1 1UA.

BOOK REVIEW

An atlas of The Butterflies of Northumberland and Durham by N.J. Cook. A4, pp.71, spiral bound. Northumberland Biological Records Centre, 1990. Price £6.00.

A region that must rank as one of the poorest in England for butterflies (26 species currently extant) now has a second major work on the fauna to add to Dunn and Parracks' 1987 *magnum opus* (reviewed *Bulletin* 47: 25).

Such a rapid follow-up should not be seen as overkill, however, for this is very much a recorders' atlas which perfectly complements the earlier work. Firstly the maps, which although on the same tetrad grid covering the three vice-counties, are each full A4 size making interpretation and annotation so much easier. Useful maps in the introductory text also give the number of species for each vice-county and 10km square, and the position of major settlements. The only complaint concerning the maps must be the lack of date categories, for all records are shown under a single post-1945 notation. The introduction concentrates on the recording scheme operating on the two counties, with an emphasis on encouraging further recording.

The body of the work is taken up by the species accounts, with a page of text covering description, habitat, flight period and current status, this facing each full page map. The text is lucid and concise but with sufficient detail to enable localities and other relevant information to be discussed.

I was slightly confused by the coded score for "distribution", however, where 1 = the scarcest species and 5 = the commonest. This blurs the distinction between the spread of distribution and abundance/scarcity, which are not necessarily linked. A more descriptive approach would have been useful.

The work is completed by brief accounts of those vagrants/migrants and extinct species that have been found in the region. There are no maps to accompany these but references to the key early works are included.

This is very much a practical contribution to the study of butterflies in the North-east, and with the stimulus of knowing that species such as the Small skipper and White-letter hairstreak are gradually seeping into the region. Lepidopterists can go out to fill those "gaps" in distribution that a study such as this inevitably reveals.

VARIATION IN BRITISH COCCINELLIDAE - A RESPONSE

by M.E.N. Majerus (4047)

Department of Genetics, University of Cambridge, Downing Street, Cambridge CB2 3EH

In volume 47 of the *Bulletin* (pp 201-205), Helen Marcan reported some field observations of variation in British Coccinellidae. As I now work on variation in Coccinellids at Cambridge, it is nice to know that portraits of these attractive insects were adorning the walls of one of the Cambridge colleges long before I found a niche here.

Helen Marcan's observations are of interest to me as I have a number of data sets from samples in Bedfordshire obtained more than a decade after her own work, and it is helpful to have older data with which to compare more recent data sets on the variation within populations, to look for evolutionary changes. Through the Cambridge Ladybird Survey, I have accumulated data sets from many parts of the country on variations in the 2 spot ladybird (*Adalia 2-punctata*) and the 10 spot ladybird (*Adalia 10-punctata*). Some of this data has already been published (Majerus and Kearns, 1989). Other data will be published in a pair of forthcoming papers in scientific journals which deal specifically with evolutionary and population genetics. In this article, I wish to correct some errors in Helen Marcan's article and make some speculative suggestions about the colour pattern variations which occur in these species.

In the text of her article, Helen Marcan makes reference to a number of named species and variations. I was surprised, to say the least, to find the 13 spot ladybird (*Coccinella 13-punctata*: syn *Hippodamia 13-punctata*) mentioned, (although the initial identification was said to be tentative). The 13 spot ladybird is very rare in Britain and may be extinct (see separate item in this issue - Editor). The most recent confirmed record being over 35 years old (an unconfirmed record of a specimen found in East Anglia in the 1970s has recently come to our attention). Fortunately, the article is illustrated by a series of drawings which are accurate enough to be used as a basis for re-identification in most cases. The true identity of nine of the ladybirds is obvious from their portraits.

Helen's figure 2a is correctly identified as *Coccinella 11-punctata*. This is obvious from the pattern on the pronotum, and from the position of the five spots on each elytron and the shared scutellary spot. Figure 2b, and figures 3a, 3b, and 3c are, however, not 13 spot ladybirds. All are forms of the 10 spot ladybird (*A. 10-punctata*). This is evident in the first place from the pronotum. The series of small black dots on the pronotum is characteristic of these forms of the 10 spot. The pronotum of the 13 spot is quite different (see figure i).

It is perhaps pertinent to make some comments about the variation that occurs in the 10 spot ladybird, for it is the most variable British ladybird. Three main groups of forms occur. The most common form (called *typica* or *decempunctata*) is variable in its ground colour, ranging from pale buff or fawn, through a range of oranges and light browns to red. The elytra sport anything from 0 to 15 black or brown spots. These are usually quite small, and some may be rather faint. The most common spot numbers are 8, 10 and 12. The scutellary spot at the base of the elytra (shown to different extents in Helen Marcan's figures 2b, 3a and 3c) is often absent. The second group of forms, called variously f. *decempustulata*, chequered, or the bedsocks variety, is again variable in its ground colour, with the range of colour being similar to that in the typical form. Upon this colour is a grid-like pattern which is variable both in extent and colour. The grid may be maroon, brown or black, and gives the insect a chequer-board appearance. Moon (1986) notes that individuals in which the ground colour is dark, with the grid-pattern being paler do occur, but I have never seen any individuals like this. The third form is quite different. It is called form *bimaculata* and is dark all over (maroon, purple, brown or black) except for a pale "shoulder-flash" on each elytron. This flash may be yellow, orange or red.

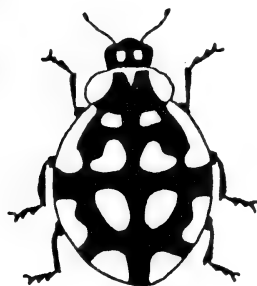
Most 10 spots found can easily be ascribed to one of these groups of forms, although occasionally intermediates do occur. Most populations contain all three forms, with *decempunctata* almost invariably being the commonest and *bimaculata* the rarest. The differences between the forms are genetic (see Majerus and Kearns 1989; Majerus et al, in press).

The 2 spot ladybird (*A. 2-punctata*) is also very variable, and many of the forms which occur in the 10 spot are similar to forms in the 2 spot. This means that the identification of some of the ladybirds by Helen Marcan to the 2 spot is somewhat problematic, particularly as the colour of the legs of the ladybirds is not given. In Britain all 2 spot ladybirds have black legs, while 10 spot ladybirds have orange or brown legs. This distinction provides a very useful deterministic feature for use in the field. Although it is not possible to be sure of the identity of all of the figures 1a - 1g inclusive, in Helen Marcan's article, 1b and 1d are undoubtedly correctly identified. The other five figures provide varying degrees of uncertainty. 1a could be either the *sublunata* form of the 2 spot, or the *bimaculata* form of the 10 spot. The shape of the flash shown is more characteristic of the 10 spot, and *bimaculata* is much more common than *sublunata* which is rare in all populations.

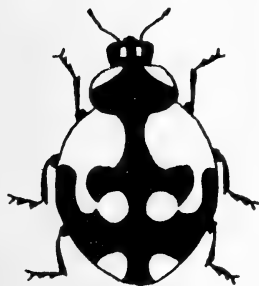
However, without knowing the colour of the legs, definitive identification is not possible. Similarly, 1c could either be an example of the *duodecempustulata* form of the 2 spot (see figure ii) with the upper



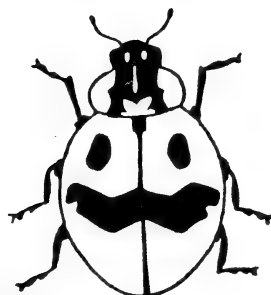
i



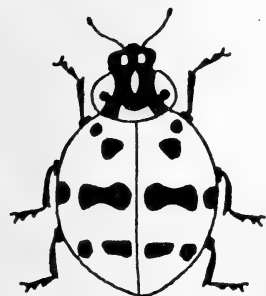
iii



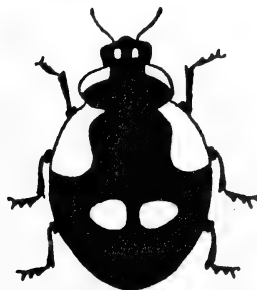
ii



iv



v



vi

Legends for figures

- i. Pronotum of the 13 spot ladybird (*Hippodamia 13-punctata*).
- ii. 2 spot ladybird (*Adalia 2-punctata*) form *duodecempustulata*.
- iii. 2 spot ladybird (*Adalia 2-punctata*) form "extreme *annulata*".
- iv. 2 spot ladybird (*Adalia 2-punctata*) form "zigzag".
- v. 2 spot ladybird (*Adalia 2-punctata*) form "spotty".
- vi. 2 spot ladybird (*Adalia 2-punctata*) form *quadrinaculata*.

central spots fused, or it could be a heavily marked chequered patterned 10 spot. Again, the latter is much commoner than the former, but without knowledge of leg colour the identity remains uncertain. The identity of 1e is not open to such ambiguous interpretation. It is a "block *annulata*". The genetics of this form are known. It is found in ladybirds which carry one extreme *annulata* allele (an allele is a form of a gene) and one zigzag form allele (see figures iii and iv). The identity of 1f is also not in doubt. It is a form called "new duodecempustulata", and carries one *duodecempustulata* allele and one extreme *annulata* allele.

Finally 1g again presents problems. I have previously seen individuals similar to this from three sources. Some 10 spots of the *decempustulata* form occasionally have the grid markings incomplete at the sides. Alternatively, stocks of pure breeding *duodecempustulata* 2 spots produce a few individuals with this type of incomplete pattern. In addition 2-spot individuals carrying one "spotty" allele (see figure v) and one *duodecempustulata* allele may look like this. Without more information it is not possible to be more precise, and as all three forms would be exceedingly rare in wild populations, none can be said to be more probable than any other. Indeed, as all are normally so scarce in the wild, it is quite possible that the specimen figured is none of these and genetically represents a form new to science. Although, during our work on the genetics of colour pattern variation in the two species of *Adalia* we have given nick-names to many forms, this one has not been named. Nor, we note, does Mader (1926-1937) have a figure similar to this despite the fact that he illustrates over one hundred different forms of each of the species in question. Mader does not have a form *intermedia* for either of these species. However, unless Helen Marcan has additional notes on the ladybird or ladybirds in question which would allow a definite species diagnosis to be made, I do not feel that the name should stand.

Why there should be so much genetic variation in the 2 spot and 10 spot ladybirds is a complicated and confusing problem. A range of different explanations has been given in relation to the 2 spot. The factors which it has been suggested may affect the forms which occur in a particular population and their relative proportions include:-temperature in both summer and winter, the amount of sunshine, humidity, atmospheric pollution (particularly soot), altitude, oceanicity of the climate, mating behaviour, and the similarity of forms of other common species of ladybird (mimicry). How these different factors may interact is difficult to understand, but it is certain that different factors are important in different areas, and there is not a single general answer to the question "why are 2 spot ladybirds variable?" (for reviews see

Muggleton, 1978; Brakefield, 1987; Majerus and Kearns, 1989). Two rather strange points in relation to the variation in this species may be made. Firstly, the 2 spot is generally thought to be warningly coloured, the bright colours serving to advertise to potential predators that it is at least distasteful if not actually toxic. Evolutionary theory predicts that warningly coloured species should vary little, so that inexperienced predators can easily learn the colour patterns of distasteful or poisonous potential prey, and so avoid them. Yet the 2 spot ladybird is one of the most variable insects in Britain. This apparent contradiction has yet to be explained. Secondly, a comparison between the frequencies of forms of the 2 spot and 10 spot ladybirds produces an unexpected phenomenon. While the frequencies of 2 spot forms vary widely in different populations, those of the 10 spot are relatively constant. For example, the two commonest melanic forms of the 2 spot (forms *quadrimaculata* (figure vi) and *sempustulata* may comprise over three-quarters of some British populations, (e.g. Glasgow, see Creed 1971, Majerus and Kearns, 1989), but they are absent from other areas, such as most parts of East Anglia. Yet the melanic form of the 10 spot, form *bimaculata* is present in all British populations and occurs constantly at frequencies between about five and fifteen percent. Although these species have many ecological and biological features in common, and often occur together, the factors which affect the frequencies of their forms must act in very different ways on the two species. It is probable that a detailed comparative study of the variation, basic biology, ecology and behaviour of these two species would be highly illuminating, not only in respect of the factors which are responsible for the differences between them in respect of their variations, but also in respect of the way natural selection acts on wild populations generally.

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A *BOMBUS HORTORUM* RECORD FROM CAMBRIDGESHIRE

by Henry Berman (5573)

The heralding fanfare for a stable spring is for me the purposeful drone of the humble bumble bee queens fresh out of hibernation. Usually it is the small early nesting bee, *Bombus pratorium* sporting two yellow stripes and an orange-red bot!

This year on the 10th March, nearly two months early, I spied a different species, buzzing in a grumbly sort of way next to my local bus-stop. This was a Long-headed garden bumble bee, *Bombus hortorum* also fairly small, dressed in three yellow bands, tipped off in white. Is this a record? We should be told.

PGETRY OF THE NINETIES — IT'S A SHORT LIFE

(Apologies to Louis MacNiece)

Doctor Smith took his collection

Sold it in the market

Used the money bought a car

But has nowhere to park it.

It's no go your butterflies

No go lepidoptera

Get the money while you can

And spend it at the opera.

Farmer Giles had a field

SSSI they called it

Had some orchids and a rose

But claimed could not afford it.

It's no go serenity

No go preservation

The dumper truck will be here soon

With grants for reclamation.

There is a jungle standing still

With happy cutters felling

Please the bankers plant some cows

For burgers sweetly smelling.

It's no go your arteries

No go all the weather

So get it while you may old chum

Compound interest is for ever.

Don McNamara (5537)

PHASMIDA AND COLEOPTERA AS FOOD

by Phil Bragg (8737)

That well-known book *Why not eat insects* (Holt 1885) has been much talked about at several exhibitions and meetings which I have attended. However, I have yet to meet anyone in Britain who has personal experience of doing so! Even the author, to judge from his writing style, had never tried eating insects. Perhaps Dick Vane-Wright of the Natural History Museum has tried them — I didn't see the programme which was referred to in the October AES *Bulletin* (McNamara 1989).

Last summer, Patrick van der Stigchel, a fellow member of the Phasmid Study Group, accompanied me on a phasmid collecting trip to Sarawak. During the trip I had, on two occasions, the opportunity to try eating insects for myself.

The first occurred while we were staying at Bengoh, a Dayak kampong some 30 miles from the capital, Kuching. As phasmids are best collected at night, it seemed wise to hire a local to act as our guide while we were in the jungle at night. We were fortunate to be able to hire Bajing, who had spent all his life in Bengoh and also knew some interesting facts about the local phasmids!

Bajing told us that the villagers, who belong to the Bideyuh tribe, used to eat the eggs of the largest insects which we were collecting. These were later determined to be *Haaniella grayi grayi* (Westwood). The adult females are brown in colour but otherwise resemble the bright green "jungle nymph", *Heteropteryx dilatata* (Parkinson), which is commonly offered for sale at entomological exhibitions. The egg is barrel shaped, about 9mm long and 6mm in diameter; it is covered in fine hair. Evisceration of a dead specimen showed the body typically contains about 15 eggs in various stages of development.

Bajing said the usual procedure was to cut the female open, remove the eggs, boil them in water for 30 seconds, remove the shell and eat. As the aim of the trip was to collect live insects to bring back to the UK, I waited until an egg had been laid. After cooking, I found the shell was easily removed, and with some hesitation, I popped it into my mouth. They are actually a bit of a let-down, rather tasteless and chewy. O.K., but nothing exciting. Bajing said no one in his kampong eats them now. However, in the less sophisticated kampongs (Bengoh has electricity for three hours per night) I'm sure they are still looked on as a useful source of protein.

The second chance was eating Sago worms. I believe these are beetle larvae. They are found in the Sago Palms when they are cut down to harvest the sago. The worms are readily available from the Sunday

market in Kuching — they are rightly considered a delicacy. By request one of my hosts, Lee Yong Yen served them up one evening. They are purchased live and are stir fried in a hot wok, being thrown in while alive. After two or three minutes they are ready to eat. They are very sweet if cooked correctly but become bitter if overcooked. Eating the head is optional. I found the contrast between the crunchy, slightly bitter head and the sweet juicy body enhances the flavour. They are excellent — I'll make a point of having them again on my next trip.

I'm told you can eat the Sago worms live; bite through the tough skin and squeeze the contents into your mouth then discard the skin and head. Cooked ones are great. Raw . . . I'll leave it to you to try!

If you want to try Phasmid eggs I would suggest those of *Eurycantha calcarata* Lucas. They are a similar size and from a species which is easy to breed if you become addicted. I have a few *Haaniella grayi* in culture but I don't expect to open a restaurant for quite some time!

I wish to express my thanks to Virginia Cheeseman (entomological supplier) for providing the collapsible cages used during the trip.

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AN INTERESTING MICRO (*CEDESTIS GYSSELENIELLA*) IN PARKHALL COUNTRY PARK, STAFFORDSHIRE

by Jan Koryszko (6089)

During July 1989 I was beating in coniferous woodland in Parkhall Country Park, Staffordshire. A number of common species were taken, and a few microlepidoptera.

The micros were sent to Mr R.G. Warren for identification. All but one of these also turned out to be common species. The exception proved to be a very small moth (*Cedestis gysselelliella*). Mr Warren said he had very few records of it in Staffordshire. The other areas being Burnt Wood, Swynnerton, Cannock Chase, and also recorded by the late H.W. Daltry at Maer Woods. Mr Warren said this species was often overlooked with it being so small.

I saw quite a few of these moths when beating. This species is locally common in the county, and a new record for Parkhall Country Park, which is becoming very entomologically interesting in recent years with a number of uncommon species being recorded.

SOME IRISH MOTH RECORDS

by Tim A. Lavery (8677)

The moths of Ireland have always been a relatively neglected component of the Irish fauna, yet over the past 150 years, a great deal of knowledge has been built-up regarding the origin, biology, ecology, and distribution of our native and immigrant lepidoptera, much to the credit of amateur entomologists like E.S.A. Baynes, Kane, Birchall, Beirne, Donovan and Haynes, to name but a few.

These lepidopterists spent much of their spare time travelling around Ireland in search of new species and busily collating data on those species already known to them. Of all the localities which were most frequently visited, two places stand out in terms of natural beauty, species' variety and uniqueness of habitat. These are the Burren district of north Co. Clare and the oakwoods of Killarney National Park, Co. Kerry. It follows therefore that these regions became the mecca for native and visiting lepidopterists, and in the following pages I have endeavoured to give details of certain "interesting" Irish moth species which have as their Island strongholds, these two regions. I have chosen those with a particular local and constricted distribution, which are considered somewhat of a speciality by fellow lepidopterists. Each moth is accompanied by an illustration, and map representing the current distribution knowledge up to September 1989.

The presence of the Wood tiger, *Parasemia plantaginis plantaginis* in Co. Kerry has been unconfirmed for some 80 years, since Kane (1901) gave it as occurring at Killarney and the McGillicuddy's Reeks. On 5th July 1989, while collecting in the vicinity of Lough Cruttia, on the north slope of Mount Brandon (Irish Grid Q4909, UTM MT1) a single female specimen of *P. plantaginis* was seen in flight, disturbed from an area of dry bog, with rush and grasses. This is a most typical situation in which to find this moth. This new locality record appears to confirm the existence of this species in Co. Kerry, and suggests that it has been overlooked in many similar sites throughout the county, where its presence is still awaiting discovery. The mountainous slopes below Tomies Mt. in Killarney National Park seems a very possible location. There are also many such boggy/heathland sites further south, towards Kenmare and West towards Caragh, near Glencar.

The Wood tiger is safely established in this country and is only rarely endangered in certain localities where grant-aided land improvement schemes and conifer afforestation plans destroy the available habitat. Luckily this pretty moth is locally widespread and therefore nationally safe. (See Map 1.)

Certain species of lepidoptera are restricted by foodplant or particular habitat requirements, but when one considers the larval foodplant of the Bloodvein (*Timandra griseata* Petersen), which includes dock and sorrel, weeds that are found almost everywhere, it is surprising to learn that this little geometer is very rare in Ireland, and apart from old, unconfirmed records from Counties Galway, Sligo and Louth, this moth is only to be found in the southwest counties of Cork and Kerry, but has never been recorded in any numbers, and in general is extremely scarce, with most records from the oakwoods of Killarney, where it is on the wing in July and August. (See Map 2.)

During a day-long entomological foray into Counties Kerry, Limerick and Clare, on 14th June 1989, in the company of Mr Tom Ryall, a local botanist and keen entomologist, I took a specimen of the Least minor, *Photedes captiuncula tincta* Kane, in the vicinity of Barrigone (near Askeaton), Co. Limerick.

This specimen appears to be the first record from Co. Limerick and represents the most southerly record for Ireland. This tiny noctuid is easily missed in the field and resembles a "micro" moth in flight, so it was to my delight and surprise to find this species at the bottom of my net, after a session of sweep-netting along a rough pasture, carpeted with dwarf juniper and a great variety of grasses and flowering plants which favour this calcareous region, a virtual extension of the Clare limestone pavement.

At present *P. captiuncula* is only known from the Burren district, Co. Clare, parts of south Co. Galway and from a few areas in Co. Mayo where it is generally common but very local. This Limerick locality extends its distribution appreciably, while suggesting further localised colonies may yet be discovered if the limestone regions to the east of Clare and Galway were more intensively searched, during late June and early July when the adult is fresh and the population at its peak. A number of grassy meadows near Inchquin Lough, north Clare (I.G. R3790) where the Least minor was known to occur, have in the past few years disappeared due to scale land clearance for low-intensity agricultural use. I have twice visited these localities in the past two years and can no longer find the moth in any of its stages.

The Burren is the main stronghold of this species in Ireland, but with such land improvement activities becoming more and more frequent throughout this most unique of regions, and with only small areas under minimal protection, the future of *P. captiuncula*, though not yet endangered to any great extent, serves to show the possible future of many other species could be bleak indeed, unless a large expanse of the Burren is declared a national heritage zone or some similar conservation

strategy is called into action before yet another major site of international importance is irreparably destroyed. A first and important step should be the designation of Environmentally Sensitive Areas (ESAs) as put forward by the Union of Professional and Technical Civil Servants in their draught *Policy for Nature Conservation in Ireland* (1987).

Irish Distribution Data:



Map 1
Wood tiger



Map 2
Blood-vein

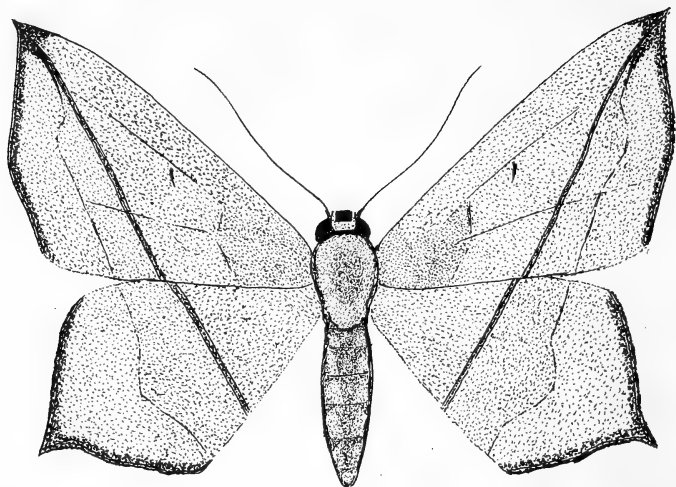


Map 3
Least minor

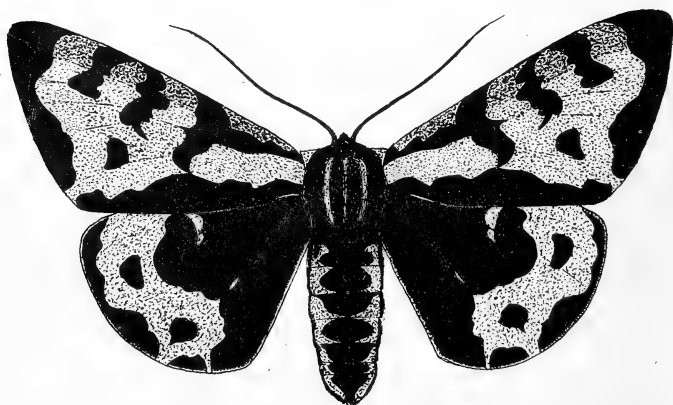
These maps have been compiled from data held by myself as part of the Irish Lepidoptera Records database (Lavery, 1989) and are plotted on the Universal Transverse Mercator (UTM) grid system, which uses 50km square units, which is a very useful and informative method for mapping faunal distribution on a national and international basis, as the larger grid squares than the normal Irish Grid system as operated by the Ordnance Survey, give a better overall picture of a particular species distribution over a sizeable area. This UTM system is generally used in Europe now, including use in national invertebrate recording schemes.

Acknowledgements

Much of the data used in compiling the accompanying maps was derived from field records supplied by Ian Rippey (BBCS Northern Ireland), John W. Lavery, Raymond F. Haynes, and my own personal data. Literature records and references as well as data originating from the lepidoptera collections of the Ulster Museum, Belfast and the National Museum, Dublin, is gratefully acknowledged along with the continued co-operation of Dr Robert Nash (Ulster Museum) and Dr J.P. O'Connor



The Blood-vein.
Timandra griseata Petersen.



♀

The Wood Tiger.
Parasemia plantaginis plantaginis Linn.



(National Museum), who have in addition to allowing access to various important collections, also provided much additional information.

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SOME OBSERVATIONS ON THE MOTHS OF LONDON CITY

by Raymond A. Softly (5734)

D.A. Booth's report of an Eyed hawkmoth at Waterloo Station (*Bulletin* 48: 206) brought back a number of memories of the City of London, from which place of work I retired fifteen years ago. I doubt his conclusion of a colony of Eyed hawks at Waterloo: I believe the species to be wide ranging as an adult rather than colonial, and that the shallows which colonise any derelict building site can provide plenty of opportunity for breeding. I do recall a few years ago finding an Eyed in the entrance hall of Stockwell Underground station.

The shallows growing on the derelict tracks at Broad Street station before its recent redevelopment were host to the Puss moth and I found a cocoon there constructed not of fragments of bark but of bits chewed from an abandoned piece of roofing felt lying on the ground. Broad Street station in its semi-derelict state, half covered in a forest of buddleia in which poplar and birch had also taken hold, proved an interesting hunting ground and yielded a range of Lepidoptera; the Cinnabar moth, for example, which I believe really prefers field ragwort, was happy with the Oxford ragwort in the corners of even the still used platforms.

Also I can recall the appearance of an Old lady, not in Queen Street, but next door to the Old Lady of Threadneedle Street, in the Lothbury Office of the now National Westminster Bank. I think this species can well survive on the numerous ivies that are planted in raised flower beds at the foot of office buildings. On fuchsia planted in a flower bed next to the Royal Exchange I found Elephant hawkmoth larvae. I have always kept an eye on the more substantial greenery of Finsbury Circus but have found little more exciting than a Brindled beauty on a lime tree.

Larvae of the Vapourer moth were one year in great abundance on the plane tree that no doubt still dominates a tiny churchyard tucked away at the back of alleyways behind Cornhill. This species, with its wingless female, evidently must disperse to fresh territory in the newly-hatched larval stage, when its long hairs allow it to be blown about with the dust of the streets. It seems a hazardous throw-away strategy for survival — the newly-hatched larva is seldom going to find any food near at hand, but it only needs one to survive to produce another egg batch on a cocoon tucked under some grimy windowsill of an office building.

There are obviously many niches, no matter how formal or artificial, ready for exploitation within the busiest heart of the concrete jungle. And for species not themselves powerfully mobile there is always public transport. Who has not observed from time to time the odd moth in a railway carriage or an underground train? Even Mr Booth's Eyed hawk may have hitched a lift from the country!

ON TWO YEARS IN THE PUPA

by Dave Rolfe (6572)

I was interested to read Peter Cribb's account (*Bulletin* 49: 18) of the Iolas blue butterfly (*Iolana iolas*) remaining in the pupal stage for two years. This reminds me of a similar incident that happened to me many years ago.

I had obtained a pupa of the Orange tip (*Anthocharis cardamines*) one autumn, I can't remember where from, so I kept it cool and safe for the winter and around the end of March, I placed it in an emerging cage. I sprayed it, and a few other various pupae in the same cage, but it did not emerge. I checked it occasionally and it seemed to be alive all through the summer and by about September it was left in the cage and more or less forgotten.

The following year other pupae were put into the cage and around April I noticed the wing pattern in this elderly pupa starting to show through and shortly after a perfect male emerged. I am sorry to say that, as I was very young then, it was immediately despatched and put into my collection only to fall prey to museum beetles a few years later.

I believe there are other records of Orange-tips staying in the pupal stage for two winters; I believe "South" may have mentioned it in one of his books. Has anyone else had this species overwinter twice?

As a postscript, can anyone tell me of the life history of the museum beetle? The books I have that mention it are very vague and how the dickens do they appear in almost airtight drawers and cases?

SOME OBSERVATIONS ON THE SYRPHIDAE (DIPTERA) OF THE COUNTIES OF CLWYD AND GWYNEDD, WALES

by M.O. Hughes (3612)

The two counties of Clwyd and Gwynedd in North Wales encompass a wide variety of habitat ranging from salt marsh to mountains over 3,500 feet. Entomologically, the region, in my view, is still fairly underworked and no doubt more research will reveal further species some of which, although I have not encountered them myself, are known to exist.

	CLWYD	GWYNEDD
Genus BACCHA		
<i>Baccha</i> spp.	Common in both counties. On female was taken on a Crosville bus (inside) in Carmen Sylva Road, Craig-y-Don, Llandudno, Gwynedd on 8th August 1987.	
Genus MELANOSTOMA		
<i>Melanostoma mellinum</i>	Common in both counties. Melanic female taken at Glascoed 24.5.75	Melanic female taken in Gwydyr Forest 7.8.67.
<i>Melanostoma scalare</i>	Very common in both counties and apparently much more common than <i>mellinum</i> .	
Genus PLATYCHIRUS		
<i>Platychirus albimanus</i>	Exceedingly common in both counties. By far the commonest Platychirus.	
<i>Platychirus clypeatus</i>	—	Three males taken in Gwydyr Forest 5.8.87.
<i>Platychirus manicatus</i>	Common in both counties.	
<i>Platychirus peltatus</i>	One male at Llyn Helyg 27.5.88. One female at Kinmel Bay, Rhyl, 21.9.74. One female at Kinmel Bay, Rhyl 18.9.75.	Not found.
<i>Platychirus scambus</i>	One female at Glascoed, 14.5.75.	Not found.
<i>Platychirus scutatus</i>	Frequent in both counties.	
<i>Platychirus sticticus</i>	Not found.	One female in Gwydyr Forest, 5.8.87.
<i>Platychirus tarsalis</i>	One female in Bishop's Wood Prestatyn 26.5.75. One female in Bilberry Wood, Hawarden on 15.5.89 and 7.6.89.	Not found.
Genus PYROPHAENA		
<i>Pyrophaena granditarsa</i>	Frequent in both counties.	
<i>Pyrophaena rosarum</i>	Not found.	One male in Gwydyr Forest 19.8.76.
Genus PARAGUS		
<i>Paragus haemorrhous</i>	One male at Bishop's Wood, Prestatyn 28.8.75.	One female in Gwydyr Forest 29.8.83 and 21.8.84.
Genus CHRYSOTOXUM		
<i>Chrysotoxum arcuatum</i>	Not found.	Regularly found in Gwydyr Forest.
<i>Chrysotoxum bicinctum</i>	Not found.	One female in Bishop's Wood, Prestatyn 28.8.75.

	CLWYD	GWYNEDD
<i>Chrysotoxum festivum</i>	One female in my garden at 1 Woodside Avenue, Kinmel Bay, Rhyl 11.8.79. One female in Foryd Road, Kinmel Bay, Rhyl 4.7.80.	Not found.
Genus DASYRPHUS		
<i>Dasyrphus albostrigatus</i>	One male in Bishop's Wood, Prestatyn 31.5.75.	One male in Gloddaeth Woods, Llandudno 13.5.74. One male in Bodysgallen Woods, Deganwy, Llandudno 24.6.74.
<i>Dasyrphus lunulatus</i>	Two females in Bilberry Wood. Hawarden 7.6.89.	Not found.
<i>Dasyrphus tricinctus</i>	Fairly frequent in both counties.	
<i>Dasyrphus venustus</i>	Fairly common in both counties.	
Genus EPISTROPHE		
<i>Epistrophe elegans</i>	Common in both counties.	
<i>Epistrophe grossulariae</i>	Frequently found in both counties.	
<i>Epistrophe nitidicollis</i>	Not found.	One female in Gwydyr Forest 31.7.85
Genus EPISYRPHUS		
<i>Episyrphus balteatus</i>	Exceedingly common in both counties.	
Genus ERIOZONA		
<i>Eriozona syrphoides</i>	Not found.	Two males Gwydyr Forest 24.8.84. One female Gwydyr Forest 26.8.84 and 24.8.84.
<i>Eriozona syrphoides</i> is by no means common but is apparently established in Gwydyr Forest which is largely coniferous.		
Genus LEUCOZONA		
<i>Leucozona glauca</i>	Quite common in wooded areas in both counties.	
<i>Leucozona laternaria</i>	Quite frequent in both counties but apparently scarcer than <i>glauca</i> . The females of this genus appear to be more in evidence than the males.	
<i>Leucozona lucorum</i>	Quite common in both counties.	
Genus MEGASYRPHUS	<i>Megasyrphus annulipes</i>	Not found. Five females taken in Gwydyr Forest between 18.8.83 and 21.8.88.
Genus MELANGYNA		
<i>Melangyna arctica</i>	Not found.	Two males Gwydyr Forest 5.8.87.
<i>Melangyna compositarum/</i> <i>labiatarum</i>	Not found.	One female Bodysgallen Woods, Deganwy, Llandudno 2.8.73. One female Gwydyr Forest 19.8.76. One male Gloddaeth Woods, Llandudno 25.5.74 and one male in Gwydyr Forest 31.7.85.
<i>Melangyna lasiophthalma</i>	Quite common in both counties.	
<i>Melangyna quadrimaculata</i>	Not found.	One male Gwydyr Forest 12.4.88 also two females.

	CLWYD		GWYNEDD
<i>Meligramma cincta</i>	Not found.		One male Bodysgallen Woods, Deganwy, Llandudno 10.5.73. One female near Cymryd Farm, Conwy Valley 30.5.74.
Genus MELISCAEVA			
<i>Meliscaeva auricollis</i>	Fairly frequent in both counties.		
<i>Meliscaeva cinctella</i>	Not found but no doubt exists. Common.		
Genus METASYRPHUS			
<i>Metasyrphus corollae</i>	Common in both counties.		
<i>Metasyrphus lataifasiatus</i>	One female in Woodside Avenue, Kinmel Bay, Rhyl 3.8.75.	Not found.	
<i>Metasyrphus luniger</i>	Common in both counties.		
Genus PARASYRPHUS			
<i>Parasyrphus annulatus</i>	Not found.		One male in Gwydyr Forest 7.5.87. Also frequent locally in Gwydyr Forest 7.6.88.
<i>Parasyrphus punctulatus</i>	Not found.		One female near Cymryd Farm, Conwy Valley 30.5.74. One female Gwydyr Forest 24.4.84. Two females Gwydyr Forest 7.5.87. One female Gloddaeth Woods, Llandudno 5.5.89.
Genus SCAEVA			
<i>Scaeva pyrastris</i>	Quite common in both counties.		
Genus SPHAEROPHORIA			
<i>Sphaerophoria menthastris</i>	?		One male near Eglwysbach 24.7.74. Possibly one male Gwydyr Forest 18.8.83
<i>Sphaerophoria philanthus?</i>	Not found.		
<i>Sphaerophoria scripta</i>	Common in both counties.		
Personally I find this a most difficult genus to deal with, due to the need to examine the male genitalia. Many do not seem to correspond with the keys in Stubbs. It is quite possible that many more species occur in the two counties.			
Genus SYRPHUS			
<i>Syrphus ribesii</i>	Very common in both counties.		
<i>Syrphus torvus</i>	Not found.		One male Gwydyr Forest 31.7.85. One female Bodysgallen Woods, Deganwy, Llandudno 5.5.73. One female Gloddaeth Woods, Llandudno 15.5.74. One female Gwydyr Forest 7.5.87.
<i>Syrphus vitripennis</i>	Very common in both counties.		
Genus CHEILOSIA			
<i>Cheiliosia albitarsis</i>	Common		Not found but no doubt exists.
<i>Cheiliosia antiqua</i>	One male Bilberry Wood, Hawarden 7.6.89	Not found.	
<i>Cheiliosia bergenstammi</i>	Common in both counties.		

<i>Cheilosia fraterna</i>	CLWYD Not found.	GWYNEDD One male, one female, Gwydyr Forest 7.5.87. Not found.
<i>Cheilosia grossa</i>	One female in Foryd Road, Kinmel Bay, Rhyl 4.4.80.	
<i>Cheilosia illustrata</i>	Very frequent in both counties.	
<i>Cheilosia impressa</i>	Common in both counties.	
<i>Cheilosia nasutula</i>	One female in Fyny'r Allt, Llanwrst 2.6.66.	Not found.
<i>Cheilosia pagana</i>	Common in both counties.	
<i>Cheilosia proxima</i>	Not found.	One male Bodysgallen Woods, Deganwy, Llandudno 10.5.73. One female Gloddaeth Woods, Llandudno 13.5.74. One female near Fferm Bach, Llandudno 11.8.74. Two females Gwydyr Forest 5.8.87.
<i>Cheilosia scutellata</i>	Not found.	Not found.
<i>Cheilosia soror</i>	One female near Rhyd-y-Foel 13.8.84.	
<i>Cheilosia variabilis</i>	Common in both counties.	
<i>Cheilosia vernalis</i>	Frequent in both counties.	
<i>Cheilosia vulpina</i>	Not found.	One female Gloddaeth Woods, Llandudno 18.8.84.
Genus FERDINANDEA		
<i>Ferdinandea cuprea</i>	Not found but no doubt exists.	Quite frequent locally mainly in wooded areas.
<i>Ferdinandea ruficornis</i>	Not found.	One male Gloddaeth Woods, Llandudno 28.4.84.
Genus PORTEVINIA		
<i>Portevinia maculata</i>	Three males in Bilberry Wood Hawarden 15.5.89.	Not found.
Genus RHINGIA		
<i>Rhingia campestris</i>	Common in both counties.	
Genus CHYRYSOGASTER		
<i>Chrysogaster chalybeata</i>	One male Bilberry Wood, Hawarden 7.6.89.	Not found.
<i>Chrysogaster hirtella</i>	Not found.	One male near Dolgarrog 27.5.74. Two males at Bontnewydd, near Aber 4.6.74.
<i>Chrysogaster solstitialis</i>	The commonest <i>Chrysogaster</i> found fairly regularly in both counties.	
Genus LEJOGASTER		
<i>Lejogaster metallina</i>	Frequent in both counties.	
Genus NEOASCIA		
<i>Neoscia podagrica</i>	Common in both counties.	
Genus ORTHONEVRA		
<i>Orthonevra nobilis</i>	Not found.	One female Gwydyr Forest 24.8.84.
<i>Orthonevra splendens</i>	Frequent in both counties.	
Genus SPHEGINA		
<i>Sphegina clunipes</i>	Not found.	Two females Gwydyr Forest 5.8.87.

	CLWYD	GWYNEDD
Genus ERISTALIS		
<i>Eoseristalis abusivus</i>	Not found	One male Llanfair PG, Anglesey.
	I believe that this species may have often been overlooked.	
<i>Eoseristalis arbustorum</i>	Very frequent in both counties.	
<i>Eoseristalis horticola</i>	Very frequent in both counties.	
<i>Eoseristalis intricarius</i>	Very frequent in both counties.	
<i>Eoseristalis nemorum</i>	Very frequent in both counties.	
<i>Eoseristalis pertinax</i>	Exceedingly common in both counties.	
<i>Eoseristalis rupium</i>	Two females Gwydyr Forest 19.8.76. One female Gwydyr Forest 18.8.83. One female Gwydyr Forest 21.8.84.	
	This species seems to be very local and somewhat elusive. Found in Gwynedd only.	
<i>Eoseristalis tenax</i>	Exceedingly common in both counties.	
Genus ERISTALINUS		
<i>Eristalinus sepulchralis</i>	One male Talacre 20.7.75. One female Foryd, Rhyl 25.8.82.	Not found.
Genus HELOPHILUS		
<i>Helophilus hybridus</i>	One female near Cwm 22.6.75. One male Kinmel Bay, Rhyl 14.8.80. One female Talacre 7.6.75.	Not found.
<i>Helophilus pendulus</i>	Very common in both counties.	
<i>Helophilus trivittatus</i>	Three females Kinmel Bay, Rhyl 19.8.80.	Not found.
Genus MYATHROPA		
<i>Myathropa flora</i>	Very frequent in both counties.	
Genus PARHELOPHILUS		
<i>Parhelophilus frutetorum</i>	Not found.	One male, Gloddaeth Woods, Llandudno 13.6.74. One female as above 14.6.74. One male Penrhynside Woods, Llandudno 14.6.74.
Genus EUMERUS		
<i>Eumerus ornatus</i>	Not found.	One male Bodysgallen Woods, Deganwy, Llandudno 24.6.74.
Genus MERODON		
<i>Merodon equestris</i> var. <i>equestris</i>	One male Talacre 7.6.75. Four females Kinmel Bay, Rhyl 5.6.88 - 12.6.88. One male Cross Tree Lane, Hawarden 7.6.89.	Not found.
var. <i>narcissi</i>	Three males Kinmel Bay, Rhyl 5.6.88 - 15.6.88. Three females Kinmel Bay, Rhyl 5.6.88 - 12.6.88.	Not found.
var. <i>transversalis</i>	One female Kinmel Bay, Rhyl 5.6.88.	

	CLWYD	GWYNEDD
Genus PIPIZA		
<i>Pipiza fenestrata</i>	Not found.	One male Gloddaeth Woods, Llandudno 23.4.74.
<i>Pipiza luteitarsis</i>	Not found.	Locally frequent in Gloddaeth Woods, Llandudno April - May 1974. Also three females taken at above locality 5.5.89.
<i>Pipiza noctiluca</i>	Fairly frequent in both counties.	
Genus TRICHOPSOMOYIA		
<i>Trichopsomyia flavitarsis</i>	Not found.	Two males Gloddaeth Woods, Llandudno 5.5.89.
Genus ARCTOPHILA		
<i>Arctophila fulva</i>	Not found.	One male Gwydyr Forest 26.8.82.
Genus SERICOMYIA		
<i>Serycomyia lappona</i>	Not found.	One male near Dolgarrog 27.5.74. One male Gwydyr Forest 7.6.88.
<i>Sericomyia silentis</i>	Not found but almost certain to occur.	Very frequent in Gwydyr Forest, May - August most years.
Genus VOLUCELLA		
<i>Volucella bombylans</i>	One male Kinmel Bay, Rhyl 12.6.88.	
var. <i>plumata</i>		One female Gwydyr Forest 31.7.85. One female Gwydyr Forest 5.8.87.
<i>Volucella pellucens</i>	Very frequent in both counties.	
Genus CRIORHINA		
<i>Criorhina berberina</i>		One female Gloddaeth Woods, Llandudno, 25.5.74.
<i>Criorhina floccosa</i>		One male Bodysgallen Woods, Deganwy, Llandudno 5.5.73.
<i>Criorhina ranunculi</i>	One male (white tail) Llyn Helyg 20.4.88. One female (red tail) Llyn Helyg 20.4.88.	One female (red tail) Gloddaeth Woods, Llandudno 25.5.74.
Genus SYRUTTA		
<i>Syritta pipiens</i>	Exceedingly common in both counties.	
Genus XYLOTA		
<i>Xylota coeruleiventris</i>	Not found.	Frequent locally in Gwydyr Forest June - August 1988.
<i>Xylota segnis</i>	Common in both counties.	
<i>Xylota sylvarum</i>	One male Bilberry Wood, Hawarden 7.6.89.	One male Gloddaeth Woods, Llandudno 12.7.74.
<i>Xylota xanthocnema</i>	Not found.	Two males Gloddaeth Woods, Llandudno 12.7.74. One male Penrhynside Woods, Llandudno 18.8.74.

This species may prove more frequent than previously thought.

These observations confirm that at least approximately 105 - 110 species out of the approximately 260 known total for the British Isles occur in Clwyd and Gwynedd. No doubt many more occur and the extensive coniferous forests are well worth further observation.

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MOTH MENACE

Brown-tail alert to all gardeners

by Caryl Pritchard

(This article was sent to us by member Frank Marples (8226) and is reprinted from the *Portsmouth and Southsea Journal*, issue No. 337 of 3rd May last, with the permission of the editor to whom we express our thanks.— Editor.)

Horrified gardeners and allotment-holders in the South have put out an alert this week — the Brown-tail moth caterpillar is back!

The furry menace devastated crops all over the area three years ago, costing Portsmouth City Council more than £1m, plus weeks of extra manpower before bringing the pest under control.

Not only does it have a voracious appetite which reduced plants like cabbages to a stalk — the moth bears irritant bristles which cause rashes in most people.

“I’ve just looked out of my window and seen one of my small apple trees alive with the things,” complained a woman in North End. “They wrecked my garden last time, and I think people ought to be warned.”

Portsmouth City Council’s Environmental Health Department (Pest Control), said there were 25 cases outstanding that had been reported during the past fortnight.

“It’s not a major problem at the moment,” said a spokesman, “but we want people to report them — especially if they spot the tent-like ‘nests’ of webs in trees or bushes.

“Also stay away from the caterpillars — they are brown, hairy with an orange stripe — because they irritate the skin.

“They tend to infest places close to marshes — most of the calls have come from areas such as Farlington and Drayton. Our staff have had a lot of experience in dealing with this particular pest, and each case is treated on its merits.”

AN ABERRATION OF THE GATEKEEPER

by Dominic Rey (7929)

On the evening of 26th July 1984 I walked to the top of Robinswood hill, which is a scrub-ridden locality near Gloucester, to sort through roosting Gatekeeper butterflies (*Pyronia tithonus*). On a lone bunch of ragwort I found an immaculate male of ab. *unicolor*. This specimen has the hindwing undersides entirely golden-brown, the yellow patch being absent. Typical examples were commoner in 1984 than they have been of late.



AN ABERRATION OF THE WALL BUTTERFLY

by Dominic Rey (7929)

While prospecting on common land near Stroud, Gloucestershire, on 29th May 1982, I came across the usual colony of "Hill-top Dwelling" male Wall brown butterflies (*Lasiommata megera*). At the age of 15, as I then was, I especially chased Wall browns and while doing this I netted a male with a difference. It had typical forewings although that on the right was chipped on the apex. There was reduced eye spotting on the hindwings, with only the one eyespot remaining.



A SYNTOMIS SOLUTION

by David Moon (3850)

In February 1987 some observations of mine on *Syntomis* appeared under the title "Is *Syntomis phegea* breeding in southern England?" (*Bulletin* 6: 51). They followed the discovery of a strange larva during a holiday "somewhere in the south" in 1983.

The various points of enquiry raised in the 1987 notes had been sent to our Editor a year or so earlier and were not originally intended for publication, although I certainly didn't oppose the idea when Brian suggested it.

In February 1988 John Gregory (4116) added his doubts as to the suggested identity of the larva in a *Bulletin* note entitled "A query on *Syntomis phegea*" (*Bulletin* 47: 42). John was then kind enough to forward his own colour slides of the Footman moth larvae mentioned in his query, and these photographic studies quickly revealed a marked similarity to the larva in question. They left little doubt that it was, indeed, that of a large Footman moth and, most likely, of the Four-dotted footman (*Cybosia mesomella*), which, of the two species mentioned by John, most nearly approaches *Syntomis phegea* in size.

I am most grateful to John for providing the means of resolving this irksome problem. Based on excellent photographic evidence, it is now easy to see how such a confusion could have arisen — the larvae of some Footman moths are remarkably similar to those of certain syntomids (to which, of course, they are quite closely related).

All of this underlines the superiority of good photographs over the often woefully inadequate artists' impressions (specially of lesser-known moth larvae) which pass as aids to recognition in much of the popular literature. It also serves as a warning against jumping too hastily to conclusions where possible rarities are concerned: a kind of twitcher's impulse in the entomological field! As my original notes indicated, I am no expert on British moths, having directed my attentions to the Saturniidae from an early stage. Better to broadcast revised ideas, however, where these stem from improved knowledge, than to disguise one's ignorance with a self-protective silence. Let this be a lesson to us all!

In conclusion, I can now point to a number of factors that contributed, consciously or otherwise, to the earlier confusion: firstly, the particular location — an open woodland beyond Godshill on the Isle of Wight, not too far from Luccombe Chine (an extremely mild locale and one, perhaps, noted for alien landfalls because of its continental aspect); secondly, the knowledge that a butterfly house/exhibition lay not too distant on the island (from which all manner of strange insects

might conceivably escape from time to time); thirdly, that open-minded holiday spirit associated with visiting new areas, coupled with the thrill of the unexpected encounter — in this case that of a strange larva; finally, the extraordinary likeness of the later reared *Syntomis* to the remembered features of the I.o.W. larva.

A SCARCE MICRO, *COLEOPHORA MAYRELLA*, RECORD IN STAFFORDSHIRE

by Jan Koryszko (6089)

During September 1989 I was collecting microlepidoptera in Parkhall Country Park. A few common species were identified, and the rest were sent to Mr R.G. Warren to identify.

About a month later, out of these, one moth turned out to be quite a scarce species in the county, this being *Coleophora mayrella*. This is one of the case-feeders, and makes a case on the white clover which grows in and around Parkhall Country Park, which is only the third locality in Staffordshire where this species has been recorded so far.

The other two are Trentham, by R.G. Warren, and in the past at Madeley, by the late W. Daltry, FRES, these moths having been found in their own gardens. Mr Warren had my specimen for his collection because he has few examples in it. I feel that this species may prove more common than the record books suggest, because its foodplant is widespread in the county. It is just under-recorded, as with many species of the microlepidoptera.

Most entomologists seem to just study the macrolepidoptera, but if we all took a few micros on our collecting trips, and sent them to an expert for identification, the distribution of micros would be much more clear in our county record books.

TWO EARLY BIRDS

by Richard Dickson (3674)

A Humming-bird hawkmoth, *Macroglossum stellatarum*, showed up on 20th March this year, reported by my colleague Fr Bruce Barnes, feeding from *Polyanthus* flowers in Paulsgrove vicarage garden, near Portsmouth.

Holly blues, *Celastrina argiolus*, first appeared in Southsea on 22nd March, and have continued in force until writing this note on 1st May.

BOOK REVIEW

The Butterflies of Egypt by Torben B. Larsen. Tall 8vo, 112 pp, 8 coloured plates. Apollo Books, Lundbyvej 36, DK-5700, Svendborg, Denmark. 1990. Price DK 240.00.

Egypt is a far larger country than the British Isles, for it has an area of around one million square kilometres. It is also a very hot country which straddles Africa and Asia. One might therefore expect it to have a profusion of butterflies. This is not so and I think it will come as a great surprise to many to learn from this book that there are fewer species — only 58 — than we have here. Since over 90% of the terrain is desert, however, this puts this low number into perspective, but even so one is inclined to conjecture that it is also due to the intensive cultivation that is known to have taken place over the past 10,000 years at least, which has radically changed the natural vegetation of the oases as well as the valley of the Nile and its delta. Indeed, many other members of the flora and fauna (eg, oryx, baboons, papyrus) have become extinct in historical times.

In spite of the fact that Egypt has the oldest recorded instances of butterflies, in pharaonic tomb paintings, the country has been little recorded until recently although accounts and records of its butterflies have appeared when considering adjacent countries or the Middle East area as a whole.

Of the species that do occur a number are familiar British species. The Swallowtail (although considered here to be a distinct species), Large and Small whites, Small copper, Red admiral, some of the blues; indeed the Short-tailed blue as well as the Bath white, so rare with us, are among the commoner Egyptian species, whilst the opposite is true of the Large white. A glance at the colour plates or the list of butterflies reveals that the majority of Egyptian species belong to the families Pieridae and Lycaenidae, the Nymphalids being particularly poorly represented.

While all species are discussed, giving their distribution in Egypt, status, relationships to their distribution elsewhere, as well as the larval foodplant where known, a considerable part of the book is given over to subjects such as the ecological sub-divisions to be found in Egypt, to the history of butterfly research there, to biography of butterflies and their role as pests. The book concludes with a very useful bibliography and an index to all the pages on which a species is mentioned.

While one may not agree with all the author's conclusions, such as retaining the genus *Artogeia* and raising *Papilio (machaon) saharae* to specific rank, this is a well-written book giving a mine of information on a previously rather neglected area where there is clearly much scope for

further research. This is suggested in some of the author's discussions which throw up some interesting points. Why should the mainly Pacific Island species *Zizina otis* exist in the Siwa oasis of the Western desert? The proposition that Egypt is too hot for the rare *Pieris brassicae* is a good one, since it is known to be infertile after a few hours at 33°C. Clearly research now needs to be done to determine the upper temperature limit of *Pieris rapae* which is such a common species.

The book is very well printed in a clear well-spaced typeface and the colour plates, two of which depict scenery, are excellent. The depiction of only one or two examples, none of which has source data, can, however, create some false impressions. One wonders for instance if the Small whites in Egypt really have the males appreciably larger than the females, while the example of *Pieris brassicae* illustrated and given as the nominate *brassicae brassicae* is in fact *brassicae nepalensis*.

Brian Gardiner

BOOK ANNOUNCEMENTS

by the Editor

The following books recently published have been brought to the notice of your editor and while it is not intended to give them a critical review, the following information concerning them is given for the information of members.

Special biotic relationships in the arid southwest Edited by Justin O. Schmidt. 8vo, pp.154, illustrations. University of New Mexico Press, Albuquerque. Price not given. This short book gives some account of aspects of life in the Sonoran desert of California and insects are but a small part of it. These include the relationship of fruit-flies with cacti; harvest ants; termites, both their foraging habits and the role they play in the life and ecology of the desert.

The above book should be available through any specialist bookdealer, as should also the following, which, if not, can be obtained direct from E.J. Brill, P.O. Box 9000, 2300 PA Leiden, The Netherlands. Note that the prices given are in Guilders, as I do not have a sterling price quoted me. All are cloth hardback with dust jackets.

Key to the Insects of the European Part of the USSR. Volume IV: Lepidoptera Parts 1 and 2, edited by G.S. Medvedev. 1989/90. 1. (xxvi, 991 pp., 585 figs.) 2. (x, 1092 pp., 675 figs.) ISBN (part 1) 90 04 08924 1, ISBN (part 2) 90 04 08926 8. Price: Gld. 195 (part 1), Gld. 280 (part 2).

Part I of Volume IV, *Lepidoptera*, covers the most archaic groups — suborders Microjugata, Macrojugata, and several minor families of the suborder Frenata, including the economically important Tortricidae (17 families). The species composition of these groups in the European part of the USSR is almost completely reviewed (about 1200).

Lepidoptera Part 2, presents several lower families of the suborder Frenata, including clothes moths. Many are pests of stored goods and destroy items made from wool and fur. In all 33 families are described.

In both parts keys are provided up to the species level and the genitalia illustrated. Information is also presented on the morphology, biology, and geographic distribution of families and genera.

Keys to the Insects of the European Part of the USSR. Volume V: Diptera and Siphonaptera: Part I, edited by G. Ya. Bei-Bienko, 1989. (xxii, 1505 pp., fig. 506-964). ISBN 90 04 09028 2. Price Gld. 230.

The highly complex order Diptera and the small, specialised order of fleas, Siphonaptera are studied in this volume, which is the first in world literature to include, as far as possible, a complete list of species known throughout Europe, particularly the European part of the USSR.

Almost 8,300 species of Diptera, representing 114 families, and 160 species of Siphonaptera are described. However, despite the fairly large number of species included, this volume lays no claim to total coverage of the species composition of dipterous insects from the European part of the USSR. This is due to the high degree of variation in studies of individual groups of Diptera and an insufficient study of these insects in several regions of the territory.

The keys extend to the species level except for a few genera of the family Chironomidae studied in the imaginal phase. All species are included which have a practical significance either as harmful or beneficial organisms with reference to plant protection or forest, medical and veterinary entomology.

Los Carabidos de Navarra, Espana (The Carabid Beetles of Navarra, Spain), (Coleoptera, Carabidae). Descripción, Bionomía, Distribución, Geográfica y Clasificación by F.J. Arricibita and L. Herrera. ISBN 90 04 08980 2. Price not yet known.

Within the context of the fauna of Spain, this book is the first monograph about the Carabid beetles of a singularly interesting region: Navarra. The book includes a brief description of the physical area, picturing the great climatic contrasts together with the large botanical diversity. There are Boreoalpine, Eurosyberian, Eurasian, Euroatlantic,

Euromediterranean, Pontomediterranean, and North-African elements to be found among the rich, very interesting, 266 species of fauna.

The core of the book is devoted to the species description, captures, bionomy and geographic distribution. This part includes keys to the subfamilies, genera and species.

The excellent drawings, with precise U.T.M. coordinates and the potential distribution for the Western Palearctic Region, and the large number of literature references, make this book an indispensable volume.

Blackflies (Simuliidae) by I.A. Rubtsov. 2nd ed. 1990. (xxviii, 1042 pp., 424 figs.) ISBN 90 04 08871 7. Price Gld. 300.

The majority of blackflies are bloodsuckers of man and domestic animals.

Throughout the vast territory of the Soviet Union, in the steppes, forest, and especially the taiga and tundra, blackflies occupy a prominent place among the blood-sucking Diptera.

Blackflies are transmitters of several diseases of domestic animals, mainly onchocerciasis of cattle and reindeer, and many dangerous diseases of domestic fowl, caused by protozoa. Hence they are of medico-veterinary and sanitary-epidemiological importance.

The purpose of the present volume is to provide a brief description of species and new identification keys. It primarily incorporates numerous additions to the first edition of the *Fauna of the USSR*. This second edition also includes 18 species from countries adjoining the Palearctic region, which have not been recorded to date in the Soviet Union, and 30 species described by Enderlein from Europe (whose description has been improved upon), which may be discovered later in the Soviet Union.

The Nepticulidae and Opostegidae (Lepidoptera) of North and West Europe by R. Johannson, E.S. Nielsen, E.J. Nieuwerkerken and B. Gustafsson. 1990. 2 vols. 14.5 x 21 cm. (739 pp., 1122 figs, 54 coloured plates). Fauna Entomologica Scandinavica, 23. ISBN 90 04 08698 6. Price of set bound Gld. 220.

This two-volume monograph (consisting of one text and one plate volume) treats the north-west European Nepticulidae and Opostegidae, which together form the superfamily Nepticuloidea. All species occurring in Fennoscandia, Denmark, the British Isles, the Netherlands, Belgium, northern France (North of Paris), Germany, Poland and the Baltic states, are included. This comprises 121 Nepticulidae and four Opostegidae. All species, including sexual dimorphism and polymorphism, are illustrated on 54 coloured plates. There are more than 400 line drawings of male and female genitalia and nearly 200

drawings of leaf-mines for all species. All species are completely redescribed with additional notes on biology and distribution. Twenty-six lectotypes are designed and three new synonymies are established. A richly illustrated separate chapter gives descriptions of fully grown larvae of most species. A well illustrated introduction covering morphology, systematics and classification is provided for each family. Further, remarks on handling of nepticulids, rearing and collecting are given. Keys are given for adults, male and female genitalia and mines and larvae.

The Saturniidae of America: Ceratocampinae by Claude Lemaire. 4to, pp.480, 64 coloured plates, 379 fig. Soft cover. Museum Nacional de Costa Rica, San Jose. 1988. Price \$80.00.

Published by them to mark the centenary of the Nacional Museum, this is the third volume of Lemaire's monumental study of the American Saturniidae and, unlike the previous two volumes, is profusely illustrated with colour plates.

The Ceratocampinae are a group of largish moths most of which are a rather dull shade of yellow or brown but which have often spectacular larvae and an almost endless variety of interesting and unusual eggs. The colour plates are, therefore, of great help in identifying these rather uniform moths, of which 170 species are given in this volume, and to whet our appetite, a number of the larvae and eggs are also shown in colour.

The main text is in French, but for each species there is an English summary of the main diagnostic features and for the genera there is a Spanish summary as well.

SOME EARLY FLYERS IN 1990

by J.H. Payne (5923)

On the 26th December 1989 my son found a Peacock butterfly (*Inachis io*) on open ground when playing golf on the course at Harrowden, Northants. The 8.30 a.m. temperature had been low with a white frost. He brought the butterfly home and kept it in a flower pot in his garage. On the 23rd February it became active, a warm still sunny morning, shade temperature midday was 60°F. It was put on a primrose plant in flower in sunshine, sprayed with fructose. The butterfly seemed weak but to our delight we saw it flying strongly later in company with a male Brimstone (*Gonepteryx rhamni*). Both Small tortoiseshell (*Aglais urticae*) and Comma (*Polygonia c-album*) were also flying.

SOME EARLY 1990 BUTTERFLIES IN NORTH WARWICKSHIRE

by Brian Mitchell (8068)

February 23rd 1990 seems to have brought sightings of butterflies in many parts of the country. Temperatures, according to the weathermen, reached about 18 degrees and in this part of North Warwickshire produced some notable records of butterfly sightings. On a personal note, it was the earliest date on which I saw the customary quartet of overwintering species all on the first day of a season's sightings — and the first time since this had happened since 1985 (*Bulletin* 45: 61) when a very early Painted lady was also seen on 6th April of that year.

A Comma was basking in the garden before 10.00 a.m. and a Small tortoiseshell was present in the afternoon until 3.10. At Whitacre Heath Nature Reserve (SSSI) I saw my first Brimstone and four Peacocks — possibly the earliest seen at this Warnact reserve.

At Alvecote Pools Nature Reserve (SSSI) the earliest ever sightings of not only Brimstone (two or three) and Peacock (four) but also Small tortoiseshell occurred in just over thirty years of recording since it became a reserve and forty for which records exist.

All the butterflies except Small tortoiseshell are the earliest I have seen flying in any season.

GREEN HAIRSTREAK (*CALLOPHRYS RUBI*) ABERRATION

by Alan Butler (7903)

Recently I came across a rather unusual aberration of the Green hairstreak butterfly and thought it would be of interest to other members. I would be particularly interested to hear whether or not this aberration is considered to be rare.

The butterfly is normal in all respects apart from the upper-side where the normal colouring is replaced with uniform slate-grey bordered with dark brown. It may be that such aberrations do occur frequently but are easily overlooked in view of the fact that the butterfly always rests with its wings closed and in flight the abnormal colouring of the wings is obscured by the green of the underside.

The butterfly was taken in July 1989 near the town of Valkenswaard in the province of North Brabant in the Netherlands. It was in fact only discovered by accident from six examples taken from the same vicinity.

Reference to various texts leads me to believe that this aberration is rather scarce. For instance, reference to Frowhawk (*Varieties of British Butterflies*) reveals: "Excepting the great diversity in the development of

the white markings on the under surface, . . . there is not great variation. Occasionally the insect is blotched with pale ochreous on the upper surface.” According to Russworm (*Aberrations of British Butterflies*): “The only variation of the upperside recorded is a slight bleaching or ochreous colouring on the outer half of the wings”.

However, during my return to England for Christmas, I was able to spend an hour or two in the British Museum where I examined several similarly-marked British examples referred to as ab. *cinerascens* Rebel. Unfortunately I did not have my own specimen with me and was therefore not able to compare directly with those in the Museum collection.



Green hairstreaks. Top: aberration, the upperside is uniform slate-grey bordered with dark brown and the underside is normal. Ab is referable to *cinerascens* Rebel. Bottom: normal example.

AN OBSERVATION OF THE ANGLE SHADES MOTH IN STAFFORDSHIRE

by Jan Koryszko (6089)

On 14th October 1989, a day of sunny intervals and showers, I visited the Potteries Shopping Centre in Hanley, Stoke-on-Trent, Staffordshire. Outside the centre, large numbers of plants and shrubs were on sale.

As I was looking at the plants, I noticed on the walls close by that there were a number of freshly emerged Angleshade moths (*Phlogophora meticulosa*) drying their wings. There were about a dozen in all at various points on the walls. They must have pupated in with the plants, and walked the very short distance from the plants, and up the walls to dry their wings.

I know this species has been found at all times of year, but my own observation is that I always seem to find more of them in the autumn. Maybe in good summers like 1989 the resident population is boosted by migrants in the autumn?

It is worth looking at any time of year, where plants are for sale. Perhaps other, rarer, species may be found. This may be one way some species accidentally get introduced from other counties or even other countries, more so in the case of the Microlepidoptera, which are often overlooked.

LADYBIRD EXPLOSION LIKELY

from habitat

Because of the mild winter it appears that 20 times the usual numbers of ladybirds have survived into the spring. Egg-laying, which lasts until the end of June, began two months early last year, doubling the annual cycle. Thus the biggest ladybird population explosion since the summer of 1976 has been forecast. Then the numbers of ladybirds drove tourists away from south coast beaches.

A RARE SYRPHID FLY, *POCOTA PERSONATA*, IN WALES

by M.O. Hughes (3612)

In the early afternoon of Thursday, 17th May 1990, I took a female of this rare species in Bilberry Wood, Hawarden, Clwyd, Wales. It was at rest on the broad leaf of a deciduous tree in brilliant sunshine.

I have been an amateur dipterist for nearly 28 years and have never come across this species before, even when I was living in the south of England. It may be a new record of Clwyd, if not for the whole of Wales. It would be interesting to hear of other Welsh records.

A THOUGHT ON WEATHER AND LEPIDOPTERA SCARCITY

by Peggy Pittkin (8792)

I was most interested to read the article on dearth of butterflies in 1989 (*Bulletin* 48: 243-244). This also was the case with moths as well in my area. Now most people think when we have a very hot summer it will be the case that butterflies abound.

I have found over a period of years that the numbers are affected by winter weather. After a cold dry winter many butterflies are to be seen, in fact they abound.

Another thing I notice is that overwintering butterflies may be quite normal in numbers, but the second brood fail to materialise; could this be because the overwintering insects are not sufficiently strong to reproduce?

Severe winters which are dry as with frost and snow do not have this untoward breeding effect on them. Are they perhaps like plants which can damp off with too much rain?

Does the position where they overwinter have any effect? Here I live by the river Avon and we get many river mists; would they fare better on dry acid soil rather than alkaline as it is here? I would be interested to hear other opinions.

LEAF NECTARIES ON THE LAUREL BUSH

by P.J. Palmer (7163)

The small glands at the base of the Laurel leaves noticed by Koryszko (*Bulletin* 48: 110) and Bainbridge (*Bulletin* 49: 76) are leaf nectaries. These nectaries are used by the plant to decoy ants away from the flowers where their attentions are likely to be detrimental to the pollination process. Close observation of a Laurel bush will reveal a horde of ants scurrying around — making good use of this source of nectar. A brief account of decoy nectaries and other plant adaptations concerning ants may be found in *Pollination of Flowers*, Procter and Yeo, Collins New Naturalist Series, pp.145-146.

Fear of cyanide poisoning has always prevented me from tasting the nectar, but the survival of the visiting ants, bees and wasps suggests that it is quite harmless. This is to be expected if the plant is not to risk killing potential pollinators. The absence of outbreaks of cyanide poisoning amongst consumers of honey also supports this view. Perhaps an AES member with a knowledge of chemistry would care to use a more rigorous test for confirming the lack of cyanide. I am sure the rest of the membership would be pleased to allow the intrepid chemist the honour of earning a place in the history books by allowing him or her to be the first to taste the nectar.



NORTH WARWICKSHIRE BUTTERFLY RECORDS WANTED

I am attempting to put together details of the butterflies of the borough of North Warwickshire and should be grateful for any members to send me their records, past and present, from this region. I have also taken on the job of recording both butterflies and dragonflies seen at the Warnact reserve of Alvecote Pools and would welcome any interesting records, particularly of very early or late dates of appearance, unexpected or scarce species, unusual numbers etc from any members who may have visited the site during the past 30 years.— Brian Mitchell, 127 Watling Street, Grendon, Nr Atherstone, Warwickshire CV9 2PH.

THIRTEEN IS UNLUCKY FOR LADYBIRDS

from habitat

For centuries the number thirteen has been considered unlucky — but now one species of ladybird has proved it, says the Nature Conservancy Council. With the species *Hippodamia tredecimpunctata*, which has thirteen black spots on its bright orange back, the number appears to have been fatal, as it may have disappeared in Great Britain. Of the 43 species of ladybird found in this country it has become the rarest. As yet the reason for its demise is not known.

A RARE ORANGE-TIP VARIETY

by J.H. Payne (5923)

Each season for many years I have collected ova of the Orange-tip (*Anthocharis cardamines*) for the sheer pleasure of releasing the imago in the spring. This of course is with the exception of any aberrant forms. In the spring of 1989 I passed on many pupae to friends but fortunately had a female aberration emerge from the ones I had left; it was a female without the dark tip to the forewings. This was named for me as an unfigured extreme of ab. *lineata* Lempke by Mr D.J. Carter of the Natural History Museum.

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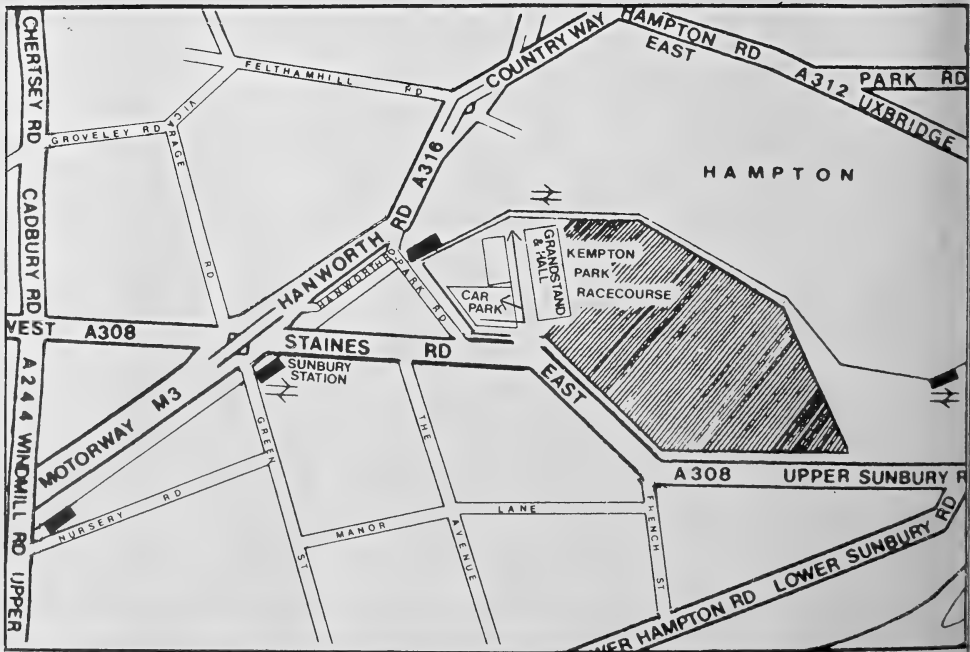
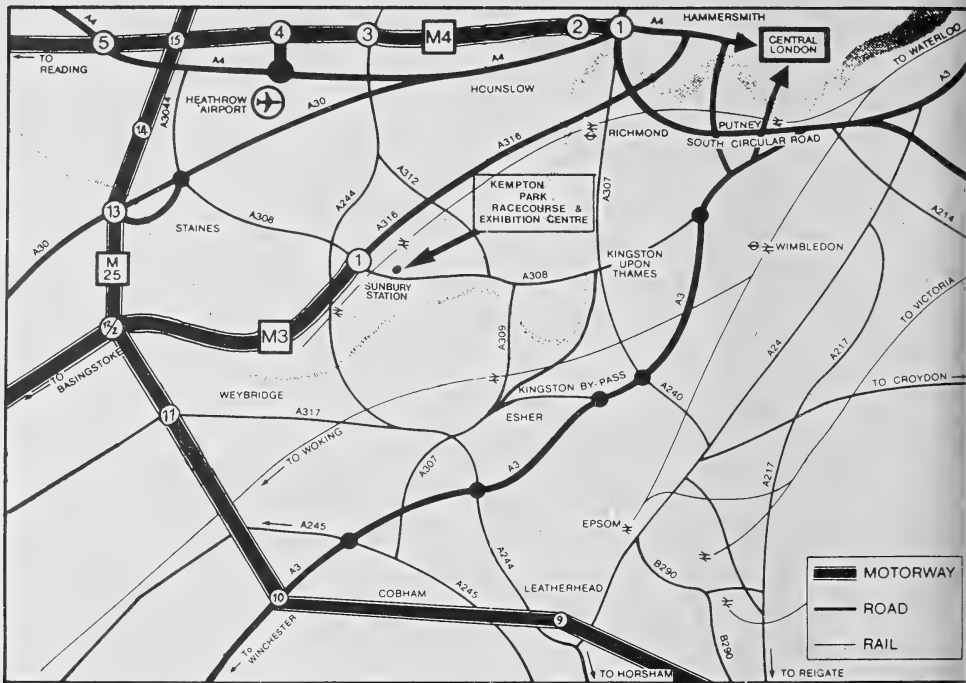
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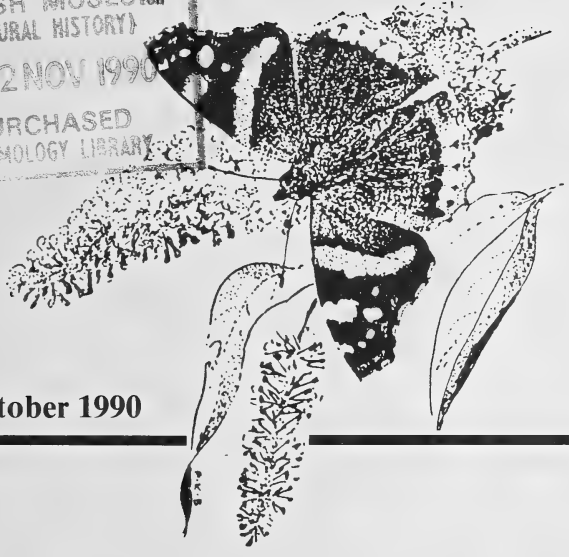
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EDITOR
BRIAN O. C. GARDINER, F.L.S., F.R.E.S.

The Amateur Entomologists' Society

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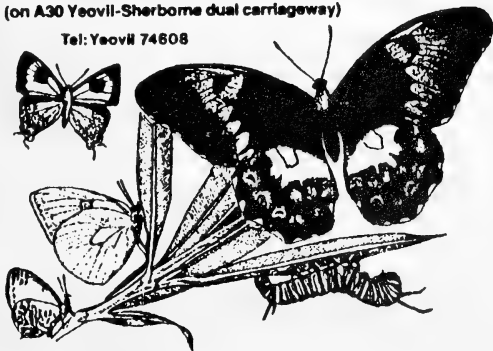
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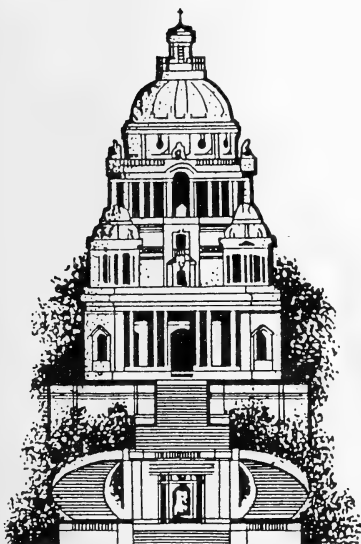
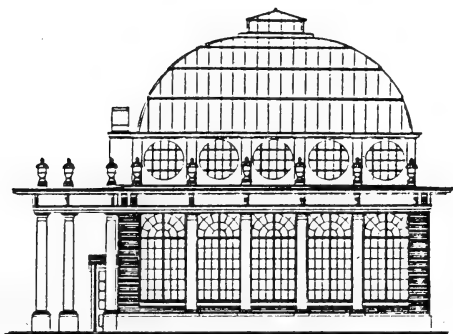
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AES BULLETIN

No. 372



GENERAL OBSERVATIONS ON RHOPALOCERA IN THE ARDECHE REGION OF SOUTHERN FRANCE DURING JUNE 1982

by Nigel Gossling (5169)

After having spent the major portion of my family camping holiday in the Roussillon regions of south-west France during the first ten days of June 1982, which has been the subject of an earlier *Bulletin* article of mine, we moved to a peaceful and attractive camp-site created in a broad valley of the Baume river (a small tributary of the Ardèche river) amongst orchards and vineyards. This area of France lies within the eastern foothills of the Cévennes which straddle so much of southern France, and which is now largely a National Park region of wild limestone hills, striated with spectacular gorges and caves. The most dominating feature of this region is, perhaps, the Ardèche river itself, which as one of the main tributaries of the mighty Rhône, winds its way in an easterly direction across the whole region and provides the visitor with one of the most beautiful scenic routes through the tree clad hills with the river itself twisting and turning for over 24 km far below within steep sided gorges.

Although this region is a rapidly expanding wine producing area, there are still to be found many tiny villages and hamlets tucked away in the hills where the terrain and local habitats are surprisingly diverse in character. The region's predominant limestone composition has attracted a rich and varied flora and fauna, although the low summer rainfall and high temperatures tend to keep arboreal growth amongst the high and exposed hill slopes sparse and Mediterranean in character. However, the fertile valleys and sheltered meadow pastures provide the French farming community with a reasonable commercial return for fruit growing and wine production. This is certainly a most attractive region of France, which is largely unspoilt and free from large sprawling towns and industrial areas; despite the shortness of my visit I quickly found the region to be an Entomologist's haven of delight!

As the camp-site lay so close to typical scrub covered hillsides and rough pasture, there was little inclination on my part to explore territory far beyond our base; apart from a couple of morning forays with the family into more richly wooded districts a few kilometres to the north-west, where butterfly life was perhaps less in evidence, my observations were mainly confined to this local area called Les Gorges de la Baume. My observations revealed a surprisingly wide range of species for this period of the year with a few unexpected surprises amongst the Satyrines, which were unusually advanced in appearance on the wing; this phenomenon was perhaps due to early clement and mild spring weather after a reasonably harsh winter.

The weather during this short visit (10th - 14th June) was predominantly warm and sunny with only the odd isolated thundery shower in the early afternoon and late evening during the first two days. In other respects the conditions were ideal for field work, and I was fortunate enough to be able to carry out a reasonable survey in depth of the wide range of butterfly species to be found in this southern region of France during the early summer period.

PAPILONIDAE

Papilio machaon bigeneratus Vty (syn. *gorganus* Fruhst.) (Swallowtail)

Only two male imagines were sighted in the local hills in the early morning of 10th June, and at no other time was this common species encountered. It is likely that my visit fell between the main spring and summer broods which would account for such paucity of imagines discovered on the wing. This species is, however, likely to be widely distributed throughout this region.

Iphiclides podalirius L. (Scarce swallowtail)

Although no adult imagines were found on the wing throughout my short visit, whilst foraging amongst scrub and small trees close by the camp with my elder daughter, we chanced to find a young larva in its third instar at rest on the leaf of a small cherry bush. We were both amazed at the larva's cryptic camouflage against the bright green foliage, and although we spent some time searching amongst other similar bushes to hand, it was perhaps not surprising that we did not find further larvae. I did, however, transport this one prize back home and successfully reared it through with a diet of apple from the garden and, within ten days, the larva had pupated and a fine female imago emerged in early August.

*PIERIDAE**Pieris brassicae* L. (Large cabbage white)

As suspected this common species was confined to the cultivated areas close to the river and was rarely found amongst the Mediterranean scrub in the flanking limestone hills above the gorge. Most imagines appeared to be male and were in good condition, and due to the pronounced black apical spots present on the forewing uppersides I concluded that these were probably spring-brood insects.

Pieris manni Mayer (Southern small white)

This species was certainly to be found in small numbers amongst scrub at higher elevations above the gorge, and was frequently found feeding on a wide variety of cruciferous plants growing in sheltered areas. Both male and female imagines were recorded as being present, and I did particularly note that many females were very small in wing span and displayed a distinct amount of grey suffusion on the fore and hindwing uppersides extending from base well into the discal central area of the wings.

Pieris ergane Geyer (Mountain small white)

This local and generally montane species of "white" was found in a few restricted areas of scrub along the top of the gorge, which commanded spectacular views of the surrounding countryside. There were few male imagines to be found as most sighted insects appeared to be female. This species is easily confused with *mannii* not only due to the similarity in appearance, but due also to the fact that both species are often on the wing together. It is, perhaps, however true to say that this species is much more local in appearance and is largely confined to exposed grassy sub-Alpine mountain slopes in central and south-eastern Europe and is probably a rare species in southern France. I certainly was surprised to stumble across this species in a region of southern France which, despite its beauty, cannot be described as containing sub-Alpine meadows! This species clearly requires more detailed study to ascertain its full geographical range in Europe.

Aporia crataegi L. (Black-veined white)

Within minutes of my first foray into the limestone hills above the gorge I soon discovered that my visit had been innocently but well timed to witness the female imagines ovipositing in meticulous manner on the upper sides of young leaves of small blackthorn bushes. I was interested to note that this butterfly appeared rarely to oviposit on leaves of large and mature bushes and instead was attracted to the smaller and often spindlier bushes growing on poor shallow soil above the gorge where the extent of sunlight and exposure would have been appreciable. The eggs

were always laid in condensed batches of 50 or more and these were easily found amongst the uppermost branches at a metre or less above the ground due to their bright but pale yellow coloration. I did find a few batches of earlier laid ova which were turning grey prior to the emergence of the young larvae. A few male imagines were sighted in flight within the camp grounds and also amongst the peach orchards and vineyards nearby. In view of the advanced stage of emergence of this species at the time of my visit it is likely that male imagines are likely to be found in larger numbers from mid-May onwards unless hampered by unduly wet and cold early spring weather in this region of France.

Euchloe simplonia Freyer (syn. *E. ausonia crameri* Butler) (Freyer's dappled white)

This species was encountered in limited numbers around the edges of the orchards and vineyards as well as waste ground areas near the camp-site and close by the river. In view of the generally worn condition of most imagines sighted I deduced that they were the tail-end of the spring brood. The odd later-emerged imago was found in desultory flight in the hills behind the gorge. This species is certainly not uncommon in this region of France and probably produces two to three broods a year.

Colias croceus Geoffroy (Clouded yellow)

Although I have no doubt whatsoever that this species is common enough in this region in later summer months, I have to report that I only encountered but two male imagines throughout my short five-day holiday period both of which were engaged in fast erratic flight amongst the scrub above the gorge. One of our camp companions did report to me of a sighting in the camp compound on the last day of our visit. In view of the strong migratory habit of this species imagines are likely to be encountered at any time throughout the spring until the late autumn months in any normal year.

Gonepteryx cleopatra europaea Vty. (Cleopatra)

Although this species is common enough throughout most of the Mediterranean coastal regions of France and south-west Europe, its appearance elsewhere in inland districts becomes increasingly sporadic as one moves further north into central Europe. However, in this region of France I found the species reasonably common and in view of the period of my visit most imagines appeared to be in good condition. It is worth noting that this butterfly was sighted by us in large numbers along the road verges wherever red valerian was growing in profusion above the spectacular Ardèche Gorge which extends for over 24 kilometres until the Ardèche river reaches the Rhône valley. My family and I were amazed at

the beauty of such a sight and my only disappointment lay in the fact that there were few spots where we could safely take the car off the road in order to have a closer look at these butterflies as well as other species which were present. This drive was part of our return journey to Avignon and was certainly a befitting way to finish our short holiday in this attractive region.

NYMPHALIDAE

Libythea celtis Laich. (Nettle-tree butterfly)

This species is not, perhaps, uncommon in this region as its larval foodplant (*Celtis australis*) is reasonably abundant around the road verges and in scattered numbers in the limestone hills beyond. I only encountered two imagines, one of which I caught and found to be a male in very good condition. This unusual butterfly appears to adopt an independent and solitary way of life and is even believed to display a modest migratory instinct in certain parts of southern Europe. The butterfly appears to enjoy sunning itself on the top foliage of small bushes and shrubs and is often attracted to bramble blossom in the company of many Nymphalids which are often on the wing in early summer. For a species which hibernates for a lengthy period I was surprised to catch an imago in such good condition when most would have been past their best in early June. I found no signs of ova amongst the larval foodplants which I examined, nor any evidence of larval activity.

Limenitis reducta schiffermuelleri Higgins (Southern white admiral)

This lovely butterfly was not as common in its appearance as was found during the first part of our holiday in the Roussillon region of south-west France, although the odd imago could be guaranteed to be seen gliding across the river and feeding on moisture at the edge of rock pools around the banks of the river. I noted that there was little evidence of this species' larval foodplant, *Lonicera* ssp., in evidence near the river, and I did wonder whether the few sighted butterflies had perhaps travelled downstream from some suitable breeding patch elsewhere. We certainly found this species to be more abundant in the extensive woodland areas lying to the north of our camp-site amongst the foothills of the Cévennes, where the humidity factor was greater and there was less exposure to direct sunlight.

Nymphalis polychloros L. (Large tortoiseshell)

This species was not uncommon amongst the deciduous trees lying close to the river bank and around the orchards nearby. The butterflies were often seen skimming low over the river for short distances and then

soaring rapidly over the tree tops with a repeat performance a few minutes later; occasionally the odd butterfly was sighted imbibing moisture by the edges of muddy pools in the late afternoon. Due to the similarity in the sexes I was not able to determine which sex was more commonly sighted.

Aglais urticae L. (Small tortoiseshell)

This common and widely distributed species was rarely found in flight due, probably, to the period of my visit falling outside the earlier spring emergence from hibernation. Two worn male imagines were sighted on 13th June amongst the scrub on the higher slopes above the gorge as a testimony to this species' predilection for high exposed terrain.

Cynthia cardui L. (Painted lady)

A limited number of butterflies were occasionally found feeding on a variety of composites and thistles amongst waste ground pockets in the local orchards; elsewhere this species was rarely sighted.

Argynnis adippe D. & S. (High brown fritillary)

I was delighted to stumble across a few freshly emerged male imagines avidly feeding on bramble blossom in hollows around the upper slopes above the gorge. All butterflies were form *cleodoxa* Ochs. which do not display silver spots on the hindwing undersides. I was surprised at such an early appearance of this handsome fritillary; although usually to be found in early July in summer pastures and waste-ground areas close to wooded countryside throughout most of Europe, this fritillary obviously will emerge in early June in southern localities when weather conditions are favourable. This species is certainly becoming less common throughout central Europe and is probably particularly sensitive to sharp changes in local habitats brought about by woodland clearance and other ecological disturbances.

Argynnis niobe L. (Niobe fritillary)

The discovery of this handsome large fritillary, also within the upper limestone slopes above the gorge, was an even greater surprise to me, particularly as both male and female imagines were found. I have never found this species on the wing so early before and have generally considered it to be a July butterfly in most parts of Europe. These particular butterflies were the largest members of the species that I have encountered to date with a forewing wing span from apex to base of as much as 33 mm amongst females and 30 mm amongst males. Both sexes displayed a rich orange fulvous coloration with a regular series of sub-marginal, post-discal and discal spots; the hingwing undersides were pale

ochreous with yellowish sub-marginal, discal and basal spots indicating that all imagines were of form *eris* Meigen, which is most widely distributed in southern Europe.

Boloria daphne D. & S. (Marbled fritillary)

During a morning visit on 12th June to a wooded area of the Cévennes foothills lying to the north-west of the camp-site, where we found idyllic sheltered pockets of pasture and vineyards, I found one male in fine condition in the midst of patrolling an extensive patch of bramble in full bloom. This is a most attractive fritillary which apart from its bright orange fulvous coloration and well-defined macular black spots displayed on the fore and hindwings uppersides, displays distinctive marbled lilac-brown patterned hindwing undersides. This fritillary is widely distributed in southern Europe and appears to particularly favour warm and sheltered southern valleys and woodland pastures.

Boloria dia L. (Weaver's fritillary)

During the last afternoon of our visit (14th June) I spotted two brightly coloured small fritillaries gliding around a sheltered damp patch of rough pasture lying behind the gorge slopes, which upon closer investigation turned out to be two somewhat worn male imagines of this small species of fritillary. They were clearly the last of the early spring brood, and I suspect that this species is somewhat local in this region of France, as it generally favours regions of central and northern Europe with a more temperate climate. When freshly emerged this species can be confused with the Small pearl-bordered fritillary (*Clossiana selene* D. & S.) which favours a similar habitat and is often found on the wing at the same period. The markings and coloration of the hindwing undersides are, however, distinctly different and the margin of the hindwing is sharply angled at vein 8, which is a particular feature of this small fritillary. Whereas *C. selene* will generally have only one brood in the year, *C. dia* will often produce two to three broods in favourable years.

Melitaea phoebe D. & S. (Knapweed fritillary)

Although this variable species of fritillary is widely distributed throughout central and southern Europe and appears on the wing from April to early September in two or three broods, I have to report that I only encountered two fine male imagines and one bleached and worn female imago in a sheltered patch of meadow clearing in the foothills of the Cévennes lying to the north of the camp-site; these butterflies displayed the usual bitonal coloration accompanied by the mottled macular black markings on the fore and hindwing uppersides. No imagines were sighted in the limestone region close to the camp-site.

Melitaea didyma Esper (Spotted fritillary)

This is also a widely distributed species of fritillary and by no means an uncommon sight amongst dry terrain throughout central and southern Europe. Owing to the general coloration and markings I was not entirely convinced that the imagines found belonged to the southern sub-species *M. didyma meridionalis* Staudinger because of the reduced grey suffused coloration displayed by the females which is a general feature of the nominate sub-species. I suspect that *meridionalis* is more likely to be encountered in the montane regions of central and southern Europe where it appears to be the prominent form of this fritillary. I found the majority of butterflies fluttering close to the ground in sheltered pockets of limestone waste ground above the gorge where the intensity of sunshine and heat was most marked.

Mellicta athalia Rott. (Heath fritillary)

This species was not encountered close to the camp-site in the limestone hills, but did prove to be a common species in the foothills of the Cévennes where reasonable numbers were sighted around the roadside and sheltered meadow pastures. Most imagines appeared to be male and displayed the usual ochreous fulvous coloration and the strong regular black markings on the uppersides of the fore and hindwings. As most butterflies were in good condition I concluded that the first brood of this species had not reached its optimum flight appearance at the time of my visit.

Mellicta deione Geyer (Provençal fritillary)

This irritatingly difficult species to identify on the wing was, in fact, found to be present in small numbers amongst the variable colonies of *M. athalia* as described above, and it was only after collecting a small series of imagines that I was able to identify this species with certainty. Generally speaking the imagines were smaller than *athalia* and displayed a lighter orange coloration with less macular markings on the uppersides; the dumb-bell shaped black marking in space 1 (b) was generally present on the forewing uppersides amongst male imagines. I did observe that the basal area of the hindwing uppersides often displayed a series of irregular spots which I did not find present amongst *athalia* and *parthenoides* imagines as described below; furthermore the general size and wing span of *deione* were distinctly smaller than *athalia*. It is essential to collect a small series of this butterfly in the field in order to determine with certainty its classification as this species so often flies together with other similar fritillaries.

Mellicta parthenoides Kef. (Meadow fritillary)

This is, of course, another difficult species to identify with any certainty in the field without a closer study after collecting a small series from any one area. In fact, I found this species less abundant than *deione* as described above and only encountered its existence as limited colonies in the higher pasture regions in the Cévennes foothills. The general coloration amongst the males was a deeper and somewhat brighter orange on both fore and hindwing uppersides with reduced black markings; there was, however, a tendency for many males to display a prominent series of black discal spots on the forewing uppersides. The imagines were generally small with a forewing length between apex and base of little more than 16 mm. The flight pattern was also, perhaps, weaker than *athalia* and *deione* although I do not consider that this is a reliable factor in identifying this species on the wing.

Melanargia galathea L. (Marbled white)

This widely distributed species in limestone regions throughout central and southern Europe was not fully on the wing at the time of my visit, although I did find a small number of male imagines fluttering around the lower elevations close to the river where there was a greater concentration of grasses present. I suspect that this butterfly is extremely common from mid-June onwards until early August, although the numbers on the wing fluctuate in an erratic manner from year to year.

Melanargia occitanica Esper (Western marbled white)

Having earlier seen this attractive species in south-west France in the Roussillon district amongst the foothills of the eastern Pyrenees, I was delighted to encounter both male and female imagines in greater numbers in the limestone hills above the gorge, where this butterfly readily settled on the dry ground with wings fully expanded. The wing span was often large with a length from apex to base exceeding 28 mm. The full range of this attractive species appears to be uncertain, although it is largely confined to the limestone regions of southern France and the Iberian peninsula where its appearance is more widespread.

Hipparchia fagi Scop. (Woodland grayling)

During the afternoon of the last day of my visit by chance I found a resplendent female at rest in the middle of a track in the higher reaches of the limestone hills above the gorge. I was most surprised to record this handsome species so early in the season and I certainly had not expected to encounter a female at that time. The postdiscal bands on the upper sides of the forewings were particularly pronounced in character and the wing span was particularly large even for this species with a length from forewing apex to base of no less than 40 mm.

At no time did I ever encounter any male imagines around the hills, although I suspect that a few were present. The earlier favourable spring weather conditions must have attributed to the early appearance of this species, as it is generally to be found in such areas of dry hill-side scrub in July and August.

This butterfly rarely shows any inclination to fly in open terrain and tends to confine its activities in the shelter of trees and even amongst old stone buildings close by. I suspect that this species is widely distributed in this region of France.

Hipparchia semele cadmus Fruhst. (Common grayling)

This southern form of the Grayling was found to be well distributed both at river level and the hillside regions; on one occasion I counted no less than six male imagines clustered close together within a square metre of dry hillside waste-ground, and when disturbed the whole group simultaneously took to the air in different directions, making it impossible for me to locate where each butterfly had landed! I was interested to note that this form was not only larger than its northern counterparts, but the males tended to display a more prominent postdiscal and discal orange fulvous coloration on the hindwing uppersides; the females were much larger insects with a display of prominent postdiscal spots on the forewing uppersides surrounded by clear ochreous patches.

This species is no doubt common in this area of France, although I do suspect that its appearance on the wing is later in June and early July.

(to be continued)

BUTTERFLY RESEARCH — THE HIGH BROWN FRITILLARY

from habitat

In an attempt to save one of Britain's most endangered butterflies, the High brown fritillary, from extinction, the Nature Conservancy Council has commissioned a research project to study and establish the reasons for its decline. The species used to be common in woods across England and Wales but it has declined rapidly in the last 50 years. It is confined now to a handful of sites in Cumbria, the West Country and the Welsh borders. Changes in woodland management have been responsible for the butterfly's disappearance, but little is known of its precise habitat needs. More information about these needs will allow conservation efforts to be directed in the best way to manage existing sites. The research will be carried out by Dr Martin Warren from whom further information may be obtained. Tel: 0258-88084.

LADYBIRDS AT LIGHT

by Michael E.N. Majerus (4027)

Department of Genetics, Downing street, Cambridge CB2 3EH.

Mercury vapour and white bulb traps have now been used for attracting and collecting insects for many years. The traps are employed mainly for catching night flying Lepidoptera and so are widely known as moth traps. However, it is obvious to anyone who has used a moth trap, for even a short period, that insects of many other orders are attracted to light. Caddisflies (Trichoptera), true flies (Diptera), in particular mosquitoes and crane flies, lacewings (Neuroptera), aphids and some shield bugs (Hemiptera), are all attracted in good numbers. In addition, many Hymenoptera come to light, particularly some of the parasitic and gall forming wasps, and in the autumn common wasps and hornets are often a feature of the catch.

However, after the Lepidoptera, it is perhaps the beetles (Coleoptera) that are the most prominent feature of many catches. Anyone who has opened a trap, bleary-eyed on an early summer morning, to be confronted by a brace of tanner beetles sitting on the egg boxes waving their long antennae, or a male stag beetle, antlers upward, will not quickly forget the adrenalin shock of the confrontation. Many other flying beetles come to light, the larger burying beetles, dung beetles, cockchafers and water beetles, being most prominent. However, I have rarely heard of records of ladybirds being caught in moth traps.

Consequently, when I was told of an Orange ladybird (*Halysia 16-guttata*) being found on a moth trap in Sussex in 1986, I supposed it was there coincidentally. Now I know differently, for I have received half a dozen more records of this rather scarce ladybird being taken in mercury-vapour traps, and one record of it being found in a Rothamstead 200 watt white light trap. Furthermore, while running moth traps at, or in the proximity of Juniper Hall, Box Hill, Surrey, during the last two weeks of June this year, I gained first hand evidence of the species' attraction to light. During the fortnight, when anything from two to eight traps were run nightly, a total of 47 individuals of this species were caught. The majority were taken in traps close to sycamore which are the favoured host tree of this species (Majerus and Williams, 1989) but small numbers were taken at traps some distance from any sycamore, including a trap run under the mature Yew canopy along the sides of the Juniper Botton Valley.

Most ladybirds are warmly coloured and so often rest in exposed positions. They do not shun the light as do many other beetles, and this may explain why they are rarely recorded from light traps. Most people empty moth traps several hours after dawn. Observations made at

Juniper Hall suggest that, at least on sunny mornings (it was sunny almost every morning while I was there), the ladybirds walk around in the trap and, as they are able to walk on all the surfaces of the trap, including the vertical sides and the underside of the collar, often find their way out and away.

While the orange ladybird is the only species of the Coccinellidae which appears to be strongly attracted to light, I have taken the trouble to empty moth traps at, or just after, dawn on many occasions since July this year, and ten other species have been recorded in traps. The traps in question are two Robinson mercury vapour moth traps operated at Madingly Wood, Cambridgeshire. This wood is a mixed deciduous wood with oak and ash as dominants and a hazel understorey. In the wetter areas poplars are dominant. Table 1 gives a list of the species and numbers of coccinellids found between 4th July and 19th October 1989. Only ten of the 72 ladybirds were found in traps emptied more than one hour after sunrise, these being four 7-spots (*Coccinella 7-punctata*), four Cream-spots (*Calvia 14-guttata*), one 10-spot (*Adalia 10-punctata*) and

Table 1. Ladybirds recorded in moth traps at Madingly Wood, Cambridgeshire (TL400596), between 4th July and 19th October 1989.

Species	Month	Number
7 spot, <i>Coccinella 7-punctata</i>	July	7
7 spot, <i>Coccinella 7-punctata</i>	August	6
7 spot, <i>Colccinella 7-punctata</i>	September	3
Cream-spot, <i>Calvia 14-guttata</i>	July	8
Cream-spot, <i>Calvia 14-guttata</i>	August	4
Cream-spot, <i>Calvia 14-guttata</i>	September	2
10 spot, <i>Adalia 10-punctata</i>	July	6
10 spot, <i>Adalia 10-punctata</i>	August	3
10 spot, <i>Adalia 10-punctata</i>	September	2
2 spot, <i>Adalia 2 punctata</i>	July	3
14 spot, <i>Propylea 14-punctata</i>	July	1
14 spot, <i>Propylea 14-punctata</i>	August	4
Kidney-spot, <i>Chilocorus renipustulatus</i>	July	1
Kidney-spot, <i>Chilocorus renipustulatus</i>	September	5
Kidney-spot, <i>Chilocorus renipustulatus</i>	October	7
Eyed, <i>Anatis ocellata</i>	September	1
Pine, <i>Exochomus 4-pustulatus</i>	September	1
<i>Hyperaspis pseudopustulata</i>	July	1
<i>Hyperaspis pseudopustulata</i>	September	1
<i>Scymnus auritus</i>	September	6

Total

 72

one 14-spot (*Propylea 14-punctata*). For the record, the traps were emptied before sunrise, or less than one hour after sunrise, on 37 occasions, during the relevant period, and later in the day on 43 occasions. Several points are perhaps worth noting. Ladybirds were only found in traps after rather warm nights. The six *Scymnus auritus* were all recorded on the same morning, following a very warm night with a minimum night temperature of 15°C. The kidney-spot ladybirds were all recorded from one trap, that being the trap closer to the area where poplars grow, and in this wood at least, the poplars seem to be preferred over ash by this species. The record of the pine ladybird testifies to the fact that the preference of this species for conifers is not particularly strong. In Madingley Wood from which conifers are absent, with the exception of four senile Douglas firs some distance from the moth traps, the species occurs at low frequency on both poplar and ash, feeding on coccids. The single Eyed ladybird is rather difficult to explain. The species is a Scots pine specialist and has not otherwise been recorded from Madingley Wood. I suspect this individual was in transit, passing through the wood in search of food prior to the winter.

The only other records we have of a ladybird at light are those of a Cream-streaked ladybird in a moth trap, at the Department of Genetics Field Station, on the night of 25th July 1989, and on one 7-spot, and one 2-spot taken at a moth trap in the Harrogate area in August and May respectively (Marshall *pers. comm.*).

I would be interested to hear of any other instances of Coccinellidae being found in moth traps, or at other lights.

REFERENCE

Majerus, M.E.N. and Williams, Z. (1989). The distribution and life history of the Orange ladybird, *Halyzia sedecimguttata* (L.) (Coleoptera: Coccinellidae) in Britain. *Entomologists' Gazette*, 40: 71-78.

PRACTICAL HINT — REARING

by Christopher Nissen (7002)

When rearing larvae of the Large copper (*Lycaena dispar*) they should be hibernated indoors and on no account be left outside.

PRACTICAL HINT — LOCALITY

Christopher Nissen (7002)

Pupae of the Lime hawk moth (*Mimas tiliae*) may be found in Windmill Road, Wimbledon, by raking up the leaves at the base of the trees.

BOOK REVIEW

Who's who in the environment: England by Sarah Cowell. A5, pp.337. ISBN 0 903158 35 3. The Environment Council, London. 1990. Offered gratis to interested parties, but a donation greatly appreciated. From 80 York Way, London N1 9AG.

This stupendous compilation lists just about every organisation that claims the slightest interest in preserving the environment, or at any rate some small part of it. While most of the entries have been compiled from questionnaires sent out, others have been assiduously chased up and a mention made of them, even when only the briefest details of their interests and organisation is known.

The information on each organisation is clearly set out in a sans serif typeface, the name of the organisation in large bold type and, where known, the date of its foundation. This is given in most cases and it will come as a surprise to many to learn just how long ago some societies concerned with the environment were in fact founded. Back in the days of King William IVth in some instances, although it must I think be admitted that their primary concern in those days was not so much with the environment as such, but in improving conditions of farming, or whatever.

The names of the organisations are given in alphabetical order and under each is given the sort of organisation they are, such as Government body, University, Independent Research, Charitable, etc, and in quite a few cases the aims and activities carried out. Follows their address and telephone number (new London STDs have usefully been listed at the end of the book), name of their secretary or contact to whom to write for information, number of staff and whether they are paid or volunteers, categories of membership and fees, whether or not they accept volunteers to undertake conservation work, publications and activities undertaken.

It really is amazing the number of bodies now involved with the environment, many of whom one would not expect to be. To give a few examples: Chartered Institute of Building; Institute for Transport Studies; Seed Bank Exchange; Institute of Virology; Green Cars; British Coal. In all some 750 organisations are listed and, very usefully, a list of the Acronyms used by the organisations (eg AES!) are given.

This book has been published with the very generous financial support of Messrs Esso and the Countryside Commission has been instrumental in helping with its distribution. It is an absolute mine of information on all sorts of bodies and will be of great help to those who wish to learn about organisations similar to their own or who wish to gather views from interested bodies on some aspect of conservation.

Brian Gardiner

A WASPISH EXPERIENCE

by Arthur Cleverley (7265)

This is just an account of an event that may or may not be of interest to members. As it made quite an impression on me at the time, I thought that it might be worth recording.

Being country born and having lived most of my life in the country, I am familiar with wasps, accepting them as part of life, but never bothering to study them.

This year, during the summer we noticed that we had a wasps' nest somewhere under the roof; more than that indeed, for we found there were two wasps' nests, both at the back of the house, which faces east.

My wife and daughter at once said that I would have to do something about getting rid of them. But as the loft (as are many) is filled with junk that could be useful, and I being a bit on the lazy side, I left it for a while to see how things went.

The wasps grew in strength, a constant flow in and out under the tiles, obviously two thriving nests.

But they seemed to be ideal neighbours, certainly they caused no trouble, they did not make any attempt to come into the house, even when jam and homemade wine-making was going on — events that normally attract large numbers of wasps.

So it became a case of live and let live, the year was going on and we decided that the situation would resolve itself with the coming of winter.

Now I had always thought that at nightfall wasps retired for the night and started to fly again when it got light in the morning.

Came the day when I learned that in this theory I was all wrong, very wrong.

The days were getting shorter, we had the lights on in kitchen and bathroom at night. Both rooms being on the wasps' nests side of the house and there were no problems.

Then on 13th October I was going to the Isle of Wight for the day and needed to make an early start.

So we were up that morning an hour before it got light, all was pitch black outside, no hint of dawn in the eastern sky.

I went into the bathroom and switched on the light in order to wash and shave. This was the first time since spring that we had switched on a light in the morning.

After a couple of minutes I became aware of something outside the window. I looked and saw about half a dozen wasps flying against the

glass trying to get in. I hastily closed the window. In next to no time there were dozens of wasps clamouring to get to the light. By the time that I had shaved the numbers of insects had grown to hundreds.

I went downstairs and entered the kitchen to find my wife looking in horror at hundreds of wasps crawling over the windows or just flying against them, all determined to get to the light, this "new dawn" that had appeared.

By the end of breakfast the scene was rather like a Hitchcock horror film, the windows a seething mass of thousands of wasps. I have never seen anything quite like it, the windows full of movement, masses of striped insects covering the glass.

As dawn started to break, the pattern changed a little, the wasps now forming up into groups, clusters, heaps on the glass, almost as if they were forming committees to discuss this whole event.

At that point I had to leave for the I.O.W. so had to leave my wife to study insect life.

On my return that night I was rather relieved to learn that as daylight grew, so the wasps dispersed and went back to their normal lifestyle.

But we were very careful to make sure that all windows were closed at night lest someone switched on a light before dawn. We had no desire for a houseful of wasps.

Well, winter has come now, and I can get into the loft and gaze at two large wasps' nests, now deserted, but quite beautiful with their marbled, oyster shell-like outer walls.

Well members, that was my wasp experience, my lesson that wasps *do* fly before dawn. So ends my tale of horror.

PRACTICAL HINT — COLLECTING

by Christopher Nissen (7002)

To find imagines of the Pine hawkmoth (*Hyloicus pinastri*) search the trunks of pine trees in June, especially those which stand in more or less isolated positions.

PRACTICAL HINT — HIBERNATING LARVAE

by Christopher Nissen (7002)

When hibernating Burnet moth larvae, pot up some horseshoe vetch, sink it in a hole in the ground, and over it arrange some wire covered with gauze. Expose the larvae to all weathers.

**BUTTERFLIES AND MOTHS OF NORTHERN SPAIN
AUGUST 23 — SEPTEMBER 5, 1989**

by Paul Waring (4220) and Rachel C. Thomas

Many parts of northern Spain remain green, even in high summer, when the south is parched and dry. During a fortnight of motoring and camping we were able to visit woodlands of oak and beech in the mountains of the Cordillera Cantabrica as well as coastal pine woods and the more arid, barren habitats that one associates with Spain in late August. What follows is a record of the butterflies and moths seen during our travels, including two nights of moth-trapping. The first was at Monasterio de Hermo on the edge of the largest beech woodland in Asturias. The second night was in the high pastures of the Picos de Europa.

Our journey began by taking the car ferry from Plymouth to Santander and motoring as far as Santillana del Mar. Outside this small, picturesque village we discovered a stream in a limestone valley bordered by hay meadows and a small stand of introduced eucalyptus and spruce. Along the stream native trees and shrubs included hazel, *Corylus avellana*, sallow, *Salix* sp., oak, *Quercus robur*, ash, *Fraxinus excelsior*, and gorse, *Ulex europaeus*. In the meadows fleabane, *Pulicaria dysenterica*, knapweed, *Centaurea* sp., a white umbellifer and horsetails, *Equisetum* spp. were abundant. Following a group of cattle back to the village we saw the orange, southern form of the Speckled wood, *Pararge aegeria*, which flew down the lane, and a Blood-vein moth, *Timandra griseata*, was disturbed from amongst brambles, *Rubus* sp. On a large clump of hemp agrimony, *Eupatorium cannabinum*, a Peacock butterfly, *Inachis io*, a Clouded yellow, *Colias croceus*, Small white, *Pieris rapae*, a Sooty copper, *Heodes tityrus*, a large Mottled grey skipper, *Pyrgus armoricanus*, and the Common blue, *Polyommatus icarus*, were busy alongside several Provencal fritillaries, *Mellicta deione*, which were seen flying low over the meadows. The fritillaries were all in good condition and were obviously the beginning of a second generation.

We spent two nights at the campsite on the edge of the village where, at the outside lights, the following familiar moths were seen: the Limespeck pug, *Eupithecia centaureata*, Single-dotted wave, *Idaea dimidiata*, Willow beauty, *Peribatodes rhomboidaria*, Orange swift, *Hepialus sylvina*, and presumed second generation specimens of Ruby tiger, *Phragmatobia fuliginosa*, Buff ermine, *Spilosoma luteum*, White ermine, *Spilosoma lubricipeda*, Brimstone moth, *Opisthograptis luteolata*, Maiden's blush, *Cyclophora punctaria*, and a Cloaked minor, *Mesoligia furuncula*. In addition, were the following, less-familiar

species: the White speck, *Mythimna unipuncta*, which was common on the campsite (several dozen were seen at the campsite lights on both nights of our stay), several black noctuids with white hind wings, *Aedia leucomelas*, a single delicate, *Mythimna vitellina*, and a very common straw-coloured pyralid with purple edges to the wings, *Oncocera semirubella*.

From Santillana del Mar we drove the 200 miles to El Bosque de Muniellos Biological Reserve in Los Ancares to visit one of the largest oak woods in Europe which is described in Grunfeld (1988). Unfortunately, a permit is now required to visit the reserve and, as the warden advised us this might take several months, we had to move on. We drove up the steep road to nearby Monasterio de Hermo where we camped at the head of a valley among the hills. On one side beech woods, *Fagus sylvatica*, extended to the summit of the hills while on the other side there was rough heathland dominated by winged broom, *Chamaespartium sagittale*. That night we operated a standard actinic Heath trap all night (Heath 1965), on the edge of the beech woodland amongst heather, *Calluna vulgaris*, and bilberry, *Vaccinium myrtillus*. There was some birch, *Betula* sp., rowan, *Sorbus aucuparia*, and sallow on the wood edge, but no oak was seen. The ground flora was sparse, but along the edges of the tracks we saw woodrush, *Luzula* sp., violet, *Viola* sp., spurge, *Euphorbia* sp., foxglove, *Digitalis purpurea*, a saxifrage, probably St Patrick's cabbage, *Saxifraga spathularis*, herb robert, *Geranium robertianum*, wood sorrel, *Oxalis acetosella*, a *Dryopteris*-type fern, a *Polytrichum*-type moss and occasional clumps of a yellow poppy, *Meconopsis cambrica*. The temperature dropped quickly to 9°C once the sun had gone down, but then stayed at 7°C throughout most of the calm, dry night. The beech wood had a well-developed lichen flora and on first impression resembled a western sessile-oak wood. This was reflected in the moth catch, which included the Dotted carpet, *Alcis jubata*, the larvae of which feed on lichens (Skinner 1984). The total catch is shown in Table 1. Of greatest interest were the numbers of August thorn, *Ennomos quercinaria*, obviously common, although we saw no oak, and they were presumably feeding on the beech. The Common marbled carpets, *Chloroclysta truncata*, were all similar in form and predominantly white. Mine shafts for coal extraction are widely distributed in the beech woodland and walking along miners' tracks by day we saw a Brimstone butterfly, *Gonepteryx rhamni*, Speckled woods, Small tortoiseshell, *Aglais urticae*, Small white, and a Rock grayling, *Hipparchia alcyone*.

In the pasture by our tent, Clouded yellows and the Vestral moth *Rhodometra sacraria*, were frequent. We encountered, for the first time, the pink flowers of *Merendera montana*, a relative of the autumn crocus.

Table 1. Moths recorded at actinic trap at Monasterio de Hermo, Asturias, 6 32°W 42 58°N. On the night of 26/27 August 1989.

Common marbled carpet	<i>Chloroclysta truncata</i>	7
August thorn	<i>Ennomos quercinaria</i>	5
Mottled beauty	<i>Alcis repandata</i>	5
Scalloped oak	<i>Crocallis elinguaris</i>	3
Pine carpet	<i>Thera firmata</i>	2
Dotted carpet	<i>Alcis jubata</i>	1
Canary-shouldered thorn	<i>Ennomos alniaria</i>	1
Vestal	<i>Rhodometra sacraria</i>	1
Northern spinach	<i>Eulithis populata</i>	1
Dunbar	<i>Cosmia trapezina</i>	1
Feathered gothic	<i>Tholera decimalis</i>	1
The Suspected	<i>Parastichtis suspecta</i>	1
Dotted clay	<i>Xestia baja</i>	1
Delicate	<i>Mythimna vitellina</i>	1
Snout	<i>Hypena proboscidalis</i>	1

15 species 32 individuals

On the banks of a stream running through the valley the Southern brown argus, *Aricia cramera*, was common and a single Camberwell beauty, *Nymphalis antiopa*, flew up and down several times. In the stream we saw lots of large tadpoles and one or two adult common frogs, *Rana temporaria*, the presence of tadpoles indicating that spring comes late to these parts. In a wet flush on the open heathy hillside we found the solitary blue flowers of marsh gentian, *Gentiana pneumonanthe*, the white flowers of grass of parnassus, *Parnassia palustris*, both amongst cross-leaved heath, *Erica tetralix*. Here Speckled woods, Gatekeepers, *Maniola tithonus*, and a Small heath, *Coenonympha pamphilus*, were seen. Two Yellow shell moths, *Camptogramma bilineata*, were disturbed and a larva of the Broom moth, *Ceramica pisi*, was found feeding on the cross-leaved heath. Above the wet flush, in a rocky area dominated by winged broom, were found several large clumps of a golden rod, *Solidago* sp., upon which were over a dozen Scarce coppers, *Heodes virgaureae*, only two of which were males and all somewhat worn. Much of the surrounding hillside had been burned and was now regenerating with heather and broom. Also present were *Sedum* sp., a small scabious, bilberry, a small amount of gorse, and a toadflax, *Linaria supina*. *Lythria sanguinaria*, a pink and gold day-flying moth in many ways similar in behaviour to the Common heath, *Ematurga atomaria*, was observed on several occasions on the heath and also in the pasture below.

As we started the car in the morning we discovered a Horse chestnut moth, *Pachynemias hippocastanaria*, on the windscreen. On our way

back down from the head of the valley, hazel and ash became more abundant. Stream and road sides were characterised by St Johns wort, *Hypericum* sp., tutsan, *H. androsaemum*, willow herbs, *Epilobium* spp., scabious, bedstraw, *Galium* sp., bramble, quaking grass, *Briza media*, and rush, *Juncus* sp. In addition, on rocky outcrops, the fringed pink, *Dianthus monspessulanus*, and a yellow snapdragon, *Antirrhinum majus*, were common. In this zone we saw worn male and female Silver-washed fritillaries, *Argynnis paphia*, visiting apple-scented mint, *Mentha x rotundifolia*, and Small whites, Meadow brown, *Maniola jurtina*, and Gatekeepers were more common.

From Monasterio de Hermo we drove up over the Puerto de Ranadoiro (3838 ft) out to Villa St Martin near Ponferrada and into a completely different habitat. At Villa St Martin we found a new campsite planted with poplar, *Populus* sp., and alder, *Alnus* sp., for shade, with a dammed stream for swimming and an artificial sandy beach. However, it seemed that poplar, alder and willow were natural species of stream-sides in this area — at any rate they were common, even in the more rugged and wild parts. The surrounding area was arid and sunbaked. The camp washroom was situated amongst the poplars and to the lights came several species which one associates with poplar groves in Britain: the Poplar hawk, *Laothoe populi*, Poplar grey, *Acrionicta megacephala*, Pale prominent, *Pterostoma palpina*, and Swallow prominent, *Pheosia tremula*. Also to the lights came the Limespeck pug, Pale oak beauty, *Serraca punctinalis*, Mullein wave, *Scopula marginepunctata*, Brimstone moth, Purple bar, *Cosmorhoe ocellata*, several Vestal, Heart and dart, Turnip moth, *Agrotis segetum*, Setaceous hebrew character, *Xestia c-nigrum*, Peach blossom, *Thyatira batis*, Ruby tiger, White ermine, and Gold fringe, *Hypsopygia costalis*. Species seen which do not occur in Britain included the Dagger moth, *Raphia hybris*, the Passenger, *Dysgonia algira* and *Cymbalophora pudica*, a Tiger moth species which looks not unlike a small Garden tiger, *Arctia caja*, when at rest. The Dusky hooktip, *Drepana curvatula*, very similar to the Pebble hook tip, *D. falcataria*, was common and had probably fed as larvae on the alder — no birch was seen. Also seen was a single specimen of a straw coloured geometrid, *Stegania trimaculata*, which, like *Raphia hybris*, feeds on poplar as a larva (Kirby 1903).

From Villa St Martin we drove north to San Pedro de Olleros through fertile plains with grapes, tobacco, maize, sweet chestnut and other crops, then via an unsurfaced mountain track, through three small villages to Vega de Espinareda, following the Rio Cua through rocky gorges. It was the hottest part of the day and few butterflies were seen except Small whites, Clouded yellows and a Grayling, *Hipparchia semele cadmus*. Continuing north, through extremely arid countryside up to the

Puerto de los Ancares (5356 ft), we saw, at 3,406 ft, a single Hummingbird hawkmoth, *Macroglossum stellatarum*, flying near the ground as if searching for larval foodplants. After an extremely steep and tortuous climb along a single track road with hairpin bends we reached the summit at 5,356 ft and there, flying over the "matoral" — heath of *Erica* and winged broom — we saw and netted one of several male *Orgyia aurolimbata*, which feed on broom (Kirby 1903). This species is a close relative of the Vapourer, *Orgyia antiqua*. The moths were uniformly dark brown, with large, feathery antennae and were flying rapidly over the heath in the bright sun (17.00 hrs.).

We spent a second night at Villa St Martin, during which additional species at the lights included the Straw dot, *Rivula sericealis*, Blood vein, Single-dotted wave, the Orache moth, *Trachea atriplicis*, and *Actinotia hyperici*, a noctuid which looks like a small version of the Saxon, *Hyppa rectilinea*.

The following day was overcast and on a sortie to the amazing orange rocks of Las Medulas no butterflies were seen. We continued on to Santiago de Compostela on new, fast roads via Lugo where we spotted a worn Jersey tiger moth, *Euplagia quadripunctaria*, at the base of a petrol pump from which we were refueling the car. That night at our campsite lights, just three miles north of Santiago, we saw a False mocha, *Cyclophora porata*, Sharp-angled peacock, *Semiothisa alternaria*, Chocolate tip, *Clostera curtula*, White speck, a grey emerald species, *Pseudoterpna coronillaria*, and a Tawny wave, *Scopula rubiginata*. The camp site was sandy and planted with conifers and laurel and, together with the cool nights, this possibly explained the paucity of moths. We discovered a second lone Jersey tiger moth that had crawled under the bonnet of the car.

There are large tracts of heathland outside Santiago. These have bell-heather, *Erica cinerea*, and St Dabeoc's heath, *Daboecia cantabrica*, but are dominated by bracken, *Pteridium aquilinum*, and we saw little sign of butterfly activity while walking into the city. Only a few additional moths turned up at the camp lights that evening, but included the Flame shoulder, *Ochropleura plecta*, Brimstone moth and the Orache moth again. We found a green pupa of the Clouded yellow butterfly on the wall of one of the buildings in an exposed position at about five feet which indicated that the butterfly was breeding in the area. The adult emerged a few days later.

From Santiago we drove to the sandy beaches between Noja and Muros through much burned heath with pine and eucalyptus to a modern campsite amongst pines just short of Cape Finisterre. The lights were all enclosed and no moths were found at rest in the morning. After exploring Cape Finisterre we drove 300 miles east to spend a couple of

days in the Picos de Europa before returning to the ferry at Santander. We camped just outside Cangas de Onis, on bare ground by a stream, where we found the White speck again and saw the Willow beauty, Heart and dart, Ruby tiger, Chocolate tip, Orange swift and the Silver-Y, *Autographa gamma*.

Although the road to the church at Covadonga was congested with Spanish tourist traffic, elsewhere in the Picos the roads were quiet. We drove along the narrow limestone gorge of the Rio Sella which was well wooded with lime, *Tilia* sp., ash, sweet chestnut, *Castanea sativa*, hazel, alder and some birch. At one of the passing places we saw an Adonis blue, *Lysandra bellargus*, and watched a Hummingbird hawkmoth visiting flowers of narrow-leaved red valerian, *Centranthus angustifolium*. Also seen was the southern form of the Grayling, *Hipparchia semele cadmus*. Further examples of Adonis blues were seen below the Puerto de Ponton together with several Sooty coppers on flowering mint. Here we saw a Speckled wood in the grip of a white, thomisid crab-spider on a pink autumn crocus, *Colchicum autumnale*. Many of these were growing on the scythed hillside meadows. We camped just below the Valle de Valdeon viewpoint in some streamside fields. These also contained autumn crocus, with umbellifers, below slopes wooded with beech, ash, sallow, lime and rowan. It was a calm, cloudy night with a heavy dew. The Heath trap was operated all night and the catch is shown in Table 2. The Old lady moth, *Mormo maura*, had arrived by 23.00 hrs and was considerably worn. The majority of species could have been recorded from meadows in Britain.

The eastern portion of the Picos through which we travelled on the way back to Santander, consisted of rugged conglomerates weathered into expansive valleys with heather and broom. Here we saw more birds of prey than at any other time during our stay in Spain, including short-toed eagle and griffon vulture as well as several buzzards, but we were unable to spend much time looking for butterflies and moths which would have been worthwhile.

In conclusion, it was interesting that the majority of moths seen were species familiar to us in Britain and that northern Spain was clearly experiencing the same late-August lull in moth activity. Of greatest interest were the Dotted carpet and large numbers of August thorns in the beech woodland, and the numbers of White speck on the coast. This species, along with the White point and Delicate, subsequently arrived in Britain as migrants at the end of September and in early October 1989 and one wonders if some came from Spain on winds associated with the gulf stream, for Skinner (1984) reports that the White speck is most frequently recorded in the western counties of Britain.

Table 2. Moths recorded at actinic trap at Sota de Valdeon, Leon.
4 55W 43 8N on the night of 3/4 September 1989.

Flounced rustic	<i>Luperina testacea</i>	8
Lesser broad-bordered yellow underwing	<i>Noctua janthina</i>	4
Scarce footman	<i>Eilema complana</i>	3
Brimstone moth	<i>Opisthograptis luteolata</i>	2
Dark swordgrass	<i>Agrotis ipsilon</i>	2
Dotted clay	<i>Xestia baja</i>	2
White point	<i>Mythimna albipuncta</i>	2
Common carpet	<i>Epirrhoe alternata</i>	1
Garden carpet	<i>Xanthorhoe fluctuata</i>	1
A grey/brown European geometrid	<i>Scotopteryx coelinaria</i>	1
Galium carpet	<i>Epirrhoe galiata</i>	1
Worn satin beauty-like geometrid	<i>Selidosema taeniolaria</i> (Genitalia det. Barry Goater)	1
Northern spinach	<i>Eulithis populata</i>	1
Large yellow underwing	<i>Noctua pronuba</i>	1
Great dart	<i>Agrotis crassa</i>	1
Setaceous hebrew character	<i>Xestia c-nigrum</i>	1
Square-spot rustic	<i>Xestia xanthographa</i>	1
Flame shoulder	<i>Ochropleura plecta</i>	1
Pale mottled willow	<i>Caradrina clavipalpis</i>	1
Delicate	<i>Mythimna vitellina</i>	1
Mouse moth	<i>Amphipyra tragopoginis</i>	1
Old lady	<i>Mormo maura</i>	1
Clouded buff	<i>Diacrisia sannio</i>	1

23 species 39 individuals

Note that our specimen of the male Scarce copper from Monasterio de Herno has a black discoidal spot but no post-discal black spots on the upper surface of the forewings, thus it is part way between the two forms *H. v. miegii* and *H.v. virgaureae* shown in Higgins and Riley (1975). These authors note that *H. v. miegii* and *H. v. virgaureae* merge in the Cantabrian Mountains and our specimen would appear to be the result. The specimen matches the form *H. v. pyrenaicola* shown in Manley and Allcard (1970) who give the impression that it is restricted to the Pyrenees and that *H. v. miegii* is the normal form elsewhere in Spain. *H. v. montanus* which is shown in Higgins and Riley (1975) has the same combination of these characters as our specimen but is more heavily spotted on the underside of the hindwing and is a Swiss montane form.

Acknowledgements

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EUROPE'S DIMINISHING DRAGONFLY POPULATION GIVES CAUSE FOR CONCERN. BRITONS TAKE INITIATIVE IN SETTING UP FIRST DRAGONFLY RESERVE.

A dragonfly reserve, sponsored by WWF and the NCC, is being set up at Ashton, near Oundle, Peterborough. It is the first of its kind in Europe.

Europe's dragonfly population is diminishing because habitats are disappearing. For example, in East Anglia, where there used to be 3,400 square kilometres of suitable wetland, there are now only 10. In France, it is estimated that 10,000 hectares of wetland are being destroyed or damaged every year. About 10% of UK species have vanished in the last forty years.

This critical situation is primarily due to land drainage for agriculture, and to residues from fertilisers, herbicides, pesticides and fungicides washing into ponds, streams and rivers.

Contrary to popular belief, dragonflies do not sting. Their usefulness to man has not yet been fully investigated. However, it is known that

they are extremely sensitive indicators of the quality of water. They also consume large quantities of insects such as midges, mosquitoes, black-fly and tsetse-fly.

At Ashton, near Peterborough, a reserve has been set up dedicated solely to the conservation and study of dragonflies. This is the first sanctuary of its kind in Europe, there being only two others in the world, one in Japan and one in the USA.

The project is being sponsored by the World Wide Fund for Nature and by the Nature Conservancy Council.

The reserve covers about two hectares and consists of a large lake and its surrounding margins. It is being planted with various species of plant known to attract dragonflies.

It is especially appropriate that this reserve has been set up on the estate which belonged to Charles Rothschild, commonly regarded as the father of modern nature conservation. It remains the home of his daughter Miriam Rothschild, who has warmly endorsed the project.

Two studies are already being carried out at Ashton Water.

For further information and/or photographs, please contact Ruary Mackenzie Dodds, Project Organiser, Ashton Water Dragonfly Reserve, Ashton Wold, near Oundle, Peterborough PE8 5LZ. Telephone 08322-74177. Fax: 08322-74387.

FELTHAM MARSHALLING YARDS — APPEAL DISMISSED

from habitat

The Environment Secretary has dismissed British Rail's Appeal against Hounslow Council's refusal to allow housing development on the Feltham Marshalling Yards. The former British Rail Marshalling Yards land is an area of great ecological value and the Council — together with numerous individuals and ecological groups — have consistently argued that it should be preserved as a local nature reserve. British Rail appealed to the Environment Secretary after Hounslow's Planning Committee refused them permission to develop the land. Following the public inquiry the DoE inspector instructed the Council and British Rail to come to a legal agreement over the future development of the land.

The Secretary of State concluded that the development could not go ahead without this legal agreement, since this had not been forthcoming he has dismissed the appeal. Further information from Ron Keefe. Tel: 081-862 5094.

A MEMORABLE SUMMER

by G.R. Smith (4950)

The exceptional summer (1989) has certainly produced some unusual observations especially with regard to the very early time of appearance, behaviour and abundance of many species. I had the good fortune last year of being able to observe a good range of species on the British List in various parts of the country. Therefore, readers may be interested to compare their own sightings with my own. The following observations, which I consider more noteworthy, are detailed in a diary form as follows:

March 25 — *Immediate Countryside West of Bath*

1 male *Anthocharis cardamines* (Orange tip). (Captive stock pupae not yet showing any signs of forming up in the warm house.) Also 1 female *Gonepteryx rhamni* (Brimstone).

March 31 — *Bathampton (east of Bath)*

1 *Pieris rapae* (Small white).

April 2 — *Immediate Countryside West of Bath*

1 male *Pieris brassicae* (Large cabbage white).

April 4 & 5

Weather very cold and heavy wet snow at times in the Avon area, especially on the 5th.

April 8

2 female *A. cardamines* (one a dwarf with slightly deformed left hindwing).

April 12 — *South Coast of Isle of Wight*

Many *Melitaea cinxia* (Glanville fritillary) larvae already in final instar, crawling over the plantains and grasses in the sunshine. Others not even half grown and choosing to remain in their nests.

April 22 — *Penn Hill (West of Bath)*

1 *Vanessa atalanta* (Red admiral), basking in the sunshine.

May 5 — *Immediate Countryside West of Bath*

A female *Ochlodes venata* (Large skipper) seen and *A. cardamines* very abundant, due to the series of favourable successive springs during the last few years.

May 30 — *South Devon Coast*

Leptidea sinapis (Wood white), mostly in fresh condition common locally and laying ova on yellow pea, *Lathyrus montanus*. As with *A. cardamines*, *L. sinapis* has fared very well during the last several years for the same reason *Callophrys rubi* (Green hairstreak) and *Erynnis tages* (Dingy skipper) were already reduced to battered veterans, although the *A. cardamines* present were still reasonably fresh on the wing. I removed

a few *sinapis* ova laid on 2 June but the larvae refused to eat the yellow pea so they were quickly transferred to Bird's-foot trefoil, *Lotus corniculatus*. The resulting second generation butterflies emerged between the 12 and 14 of July, which was certainly a very rapid transformation.

June 17 — *Immediate Countryside West of Bath*

Several very worn male *A. cardamines* were still flying, a very long flight period indeed!

June 20 — *Bathampton Down, Nr Bath* (over 600 ft above sea level)

A number of *Melanargia galathea* (Marbled white) and *Aphantopus hyperantus* (Ringlet) which were freshly emerged.

June 24 — *Immediate Countryside West of Bath*

Thymelicus sylvestris (Small skipper) were already quite common but all of the male sex.

July 9 — *West Highlands, Inverness-shire*

Erebia epiphron (Small mountain ringlet) abundant at 1900 ft in the West Highlands. About two thirds of the population were already worn or damaged. Although the sun had been obscured for over two hours by a heavy cloud, some would still readily fly up on the wing. However, when the sun broke forth again they resumed the characteristic fluttering and bobbing motion over the grasses, occasionally settling to feed on the flowers of thyme, *Thymus serpyllum* and tormentil, *Potentilla tormentilla*.

This may indicate the butterflies are still active if the day is exceptionally warm, as it was on this particular day. Later on the sun kept disappearing at intervals, and the butterflies became quickly torpid or crawled down into the tufts of matt grass, *Nardus stricta*. Another strange habit was noticeable, as there was a slight breeze, which was the tendency to drift a considerable distance with the wind if disturbed. This is a common defence with *C. tullia* (Large heath) and *C. pamphilus* (Small heath). However, *E. epiphron* allow themselves to be caught by the heads and stems of the grasses with wings outstretched, rather like using a safety net. I watched this habit repeated many times and it is easy to understand why the insects became so quickly damaged. The Red carpet, *Xanthorhoe muritata*, another mountain species was the sole example of Lepidoptera accompanying *epiphron* in this location that I could find.

Several of the large single brooded *Polymmatius icarus* (Common blue) were flying around a south facing slope covered with Bird's-foot trefoil, at 1000 ft. The lovely all-blue females were rather tattered. One *C. pamphilus* was seen flying at an altitude of about 3000 ft on Ben Nevis. At this height the vegetation was very sparse. Maybe thermal currents were responsible for this.

July 10 to 14 — *Northern Peninsula of the Isle of Skye (Trotternish)*

Coenonympha pamphilus ssp. *romensis*, was fairly common on the peat bogs although only one *Coenonympha tullia* ssp. *scotica* was found. This subspecies of *C. pamphilus* exhibits a smokey upperside and a more uniform dusky underside. However, around Loch Fada only about a half of the population were of this form, the remainder being typical *pamphilus*. *Maniola jurtina* (Meadow brown) ssp. *splendida* was only just emerging at Portree and Hungladder. However back on the mainland it was evident they had been flying for well over a week.

August 3 — *Salisbury District - South Wiltshire*

Quercusia quercus (Purple hairstreak) were by now already very worn. They are usually in this condition around mid-August. A female was observed being attracted to dry mud. The flight period of *Limenitis camilla* (White admiral) and *Apatura iris* (Purple emperor) was presumed long since over.

August 19 — *Monkton Combe (South/East of Bath)*

Several *Colias croceus* (Clouded yellow) looking very freshly emerged, appeared to be confined to a south facing slope which was heavily grazed. No others were seen in the surrounding area. *Pyronia tithonus* (Gatekeeper) was by now reduced to a few odd faded females (last year I saw a female as late as September 11).

August 21 — *Bathampton (East of Bath)*

Another single *C. croceus* was seen.

August 23 — *North Downs, Surrey*

Like 1988 *Hesperia comma* (Silver-spotted skipper) was disappointingly uncommon, although it is usually difficult to confirm whether this species is present or not, due to its rapid darting flight combined with the blinding white bare chalk soil. A somewhat worn male was found clinging to a shaded bramble stem in an exhausted condition with proboscis extended. It may have been suffering from dehydration as the temperature was at least in the mid-eighties.

Fresh *Maniola jurtina* (Meadow brown) indicated a debatable second brood had taken place. In the Bath area no fresh specimens were evident during the remainder of the summer. Several female *Celastrina argiolus* (Holly blue) were curiously attracted to dry mud. Only one *Thymelicus lineola* (Essex Skipper) was seen, where they are normally still in large numbers at this time of year; the flight period was obviously earlier this summer.

August 28 — *Midford, near Bath*

A single *Macroglossum stellatarum* (Hummingbird hawkmoth) was hovering over a large patch of majorum.

Sept 6 — *Weston, Bath*

A female *Drepana binaria* (Oak hooktip) was found stuck fast in the

dewy grass near the MV moth trap in the back garden on this particular morning. The moth recovered and subsequently laid a good number of ova in a pill box. It seems likely that the moth was attracted to the reflection of the trap's light in the dewdrops. Jan Koryszka's article appearing in the April '89 *Bulletin* discusses *Drepana falcataria* (Pebble hooktip) fatally attracted to the moon's reflection in puddles. A male *binaria* was in the trap the following night.

Sept 28 — *Weston (Suburb of Bath)*

Another *M. stellatarum* observed feeding on honeysuckle.

Oct 27 — *Bathampton, Bath*

V. atalanta, observed feeding on Crab apple fruit in warm but dull and overcast weather.

General notes

Surprisingly, both *Pararge aegeria* (Speckled wood) and *A. hyperantus*, whose abundance is normally associated with wetter summers, have both appeared to be well up this year. However, the species that may have undergone the biggest increase is *Lycaena phlaeas* (Small copper), being especially numerous throughout August and September. During the latter part of July, when temperatures reached the high eighties, specimens exhibiting a tendency to the heat form ab. *fuscae* could be found. As in 1976, due to the large numbers of this species, other aberrations were not too uncommon. In fact nearly all the commoner species were well up over the previous season. Even *Lasiommata megera* (Wall) has made a welcome reappearance around Bath after an apparent absence of eight years. After taking an interest in Lepidoptera for the past twenty-one years, I must admit this was the most memorable summer ever.

One other point worth mentioning is the fact that the necessary travel to see all the various species mentioned above in the wild, was accomplished entirely by public transport or by walking and cycling considerable distances, as I do not possess a family car!

PRACTICAL HINT — COLLECTING

by Christopher Nissen (7002)

The Brown-tail moth *Euproctis chryorrhoea* has been found at Pevensey; near to Portsmouth, and also along the seafront at Sleaford. Indeed it can often become a serious (to some people!) pest, as was reported on page 171 of the August *Bulletin*.

BOOK REVIEW

Entomology: a guide to information sources by Pamela Gilbert and Chris J. Hamilton. 2nd edition, pp (x) + 259. 8vo hardback but paper covered. Mansel, London. 1990. ISBN 7201 2052 7. Price £30.00.

The first edition of this book was reviewed in *Bulletin* 43: 104 and while some twenty extra pages have been added to incorporate some further sources of information gleaned over the past six years, a brief look through reveals that some of the previous information is now out-of-date. For instance *The Butterfly Farm Ltd* ceased trading about the time the previous edition was published. It must be admitted, however, that keeping up with who is and who is not in existence is no easy task and can be both expensive and time-consuming. While the list of traders contains most of the already better-known ones, as well as those extinct, it would have been useful to have included some of the newer and as yet less well-known ones as well as the Entomological Livestock Group which can now be considered a primary source of supply. Further errors have crept in by the AES being given the address of a Secretary who retired from this arduous position quite a few years ago and, although it has been common knowledge for some time that the British Entomological Society were to leave their Alpine Club premises and have indeed done so some time back, this address is still given. These errors, personally known to me, makes one suspect that some of the other names and addresses given are also out-of-date and it may be only when no reply is received from a source that this will become evident. A pity, too, that the American YES is not mentioned under Societies, although their publications have got in elsewhere. Nor has our *Bulletin* although we commented on its absence in our earlier review, although to be fair we do get four other mentions.

With over 750 entomological journals being published, with over 1000 each of suppliers and societies, a book such as this must be selective, and should therefore be considered as a starting point for anyone needing to delve further. It does give a comprehensive coverage of primary sources, including computer data bases; the main journals and societies are given and the information is there for finding out where to search or ask for further details and, perhaps of greatest use, is the fact that so many foreign sources are included, these not being otherwise available without a visit to a major library.

This book can be said to be a greatly expanded information source to our own *Directory for Entomologists* and in spite of our criticism above, will therefore be needed by the more advanced amateur, as well as the professional, entomologist.

Brian Gardiner

COLEOPTERA OF SOUTH-EAST POLAND

by Charles S. Cockell

INTRODUCTION

During July 1988 and August 1989 studies were made of the Coleoptera of Bieszczady (pronounced Bee-esh-chardy) National Park. This area is a protected National Park on the border of Poland and can thus be regarded as the edge of "Central Europe". The region itself is mountainous (belonging to the Carpathian mountain range) and the ground cover is mostly gorse and grass with areas of flowers and pasture in the low lying regions and the areas surrounding the small town of Muczne (pronounced Muchne) in the South of Bieszczady. Throughout the mountains there are many forest areas of coniferous trees and large numbers of beech trees, although these are localised and scattered.

The work in 1988 was carried out in collaboration with friends at Krakow University, Poland who had set up a one month camp in Muczne, with the permission of the local militia and environmental authorities, to study Ornithology. I took the opportunity to make my own studies on the Coleoptera of the area. I returned in August 1989 with friends from Bristol University under invitation from the Central Institute of Biology, Krakow University, to make additional studies of the Coleoptera.

The collecting techniques were fairly standard, many of the beetles were to be found in the grass or on flowers. Sweeping was used to collect species associated with flowers and plants and small pieces of meat were left out to attract the Silphidae. Many of the specimens are now held in the author's collection, although some were simply observed and not caught.

In both 1988 and 1989 the weather conditions were dry with occasional rain downpours in the afternoons.

The species listed have an index of abundance given in brackets after each species. This index is based on the numbers of each species sighted and represent the relative abundances. Any families or species not listed here were not observed in the area. Notes are given alongside species where relevant.

SPECIES

Index of abundance (This index applies to the entire area of the National Park unless otherwise stated).

1 = rare: 2 = scattered: 3 = locally abundant: 4 = widespread and common.

FAMILY CARABIDAE — Ground beetles

- Carabus glabratus* (4)
Carabus violaceus (4)
Carabus variolosus (1)
Carabus nemoralis (3)
Carabus auronitens (1)
Carabus silvestris (3)
Carabus scheidleri (2)
Carabus ullrichi (1) Mainly in lowland areas
Anisodactylis binotatus (4)
Loricera pilicornis (3)
Pterostichus niger (4)
Pterostichus oblongopunctatus (3)
Pterostichus metallicus (2) Only in woodland
Pterostichus vernalis (2) Near forest streams
Pterostichus vericolor (1) In pastureland
Amara simulata (2) The sometimes wet conditions prevented this species from becoming more widespread.
Amara familiaris (3)
Agonum sexpunctatum (2)
Bradycellus ruficollis (2) In pastureland
Trechus quadristriatus (3) Found mainly on the mountain peaks
Nebria brevicollis (2) Unusual to be so far east.

FAMILY STAPHILINIDAE — Rove beetles

- Staphulinus caesareus* (1) Only one specimen was observed
Lathrobium fulvipenne (2)

In general few representatives of this family were seen.

FAMILY BYRRHIDAE — Pill beetles

- Byrrhus pilula* (3) Found on many plant species, particularly on the edges of forest areas.
Cytillus sericeus (4) Found in wet grassland areas
Simplocaria semistriata (4).

FAMILY COCCINELLIDAE — Ladybirds

- Coccinella septempunctata* (4)
Calvia quatuordecimpunctata (4)
Adonia variegata (4)
Scymnus abietus (3) Mostly to be found in cleared forest areas
Cynegetis impunctata (3) Large numbers were found on nettles near a small forest stream.

FAMILY ENDOMUCHIDAE

- Endomychus coccineus* (4) Very abundant in the forest areas, feeding off rotting and fungus-infested wood.

FAMILY SCARABAEIDAE — Chafers, Dung beetles etc

- Euchlora dubia* (2) Most specimens flew into camp in early evening
Geotrupes stercorarius (3) Unusually enough this was found in the mountainous regions of Bieszczady, although it is not generally associated with mountainous areas. It could

often be found on mountain paths. It is likely they were blown into the mountains as there were no cattle or other animals to supply dung for their egg laying.

Aphodeus ater (2) Found in the town of Muczne in sheep dung.

FAMILY CANTHARIDAE — Soldier beetles

Silis ruficollis (2)

Cantharis livida (3)

FAMILY ELATERIDAE — Click beetles

Melanotus erythropus (3)

Dalopius marginatus (2) Less common in August

Ampedus pomorum (4)

Cidnopus aeruginosus (4)

FAMILY CURCULIONIDAE — True weevils or snout beetles

Liparus glabirostris (4) This beetle is endemic to Bieszczady. Many hundreds could be seen on paths and rocks in the mountains and resting on low lying vegetation.

Rhynchaenus fagi (4) This beetle is also endemic to the area and this is probably a result of the abundance of beech trees

Sitophilus granarius (2)

Donus comatus (3) Found on low plants

Apoderus coryli (1)

Polydrusus cervinus (3) Found near trees, where the larvae eat the roots.

FAMILY SCOLYTIDAE — Bark and Ambrosia beetles

Ips typographus (4) This beetle (the Engraver beetle) is endemic and a serious pest to the Polish timber industry. State timber operatives in the local area use pheromone traps to collect and destroy them.

FAMILY LUCANIDAE — Stag beetles

Sinodendron cylindricum (3) Found in very large numbers in the rotting stumps of the beech forests. In localised areas it was endemic.

FAMILY CHRYSOMELIDAE — Leaf beetles

Leptinotarsa decemlineata (Colorado beetle) (1) One specimen found on nettles

Hydrothassa glabra (3) Found in very large numbers on low lying plants adjacent to mountain and lowland streams

Agelastica alni (3) Found in large numbers in bushes next to Igloopol State Collective farm in the town of Tarnawa, although no alder trees could be found in the vicinity

Chrysolina cerealis (Rainbow leaf beetle) (4) Endemic to the town of Muczne, it is found on Dock leaves and most low lying vegetation. This is unusual since it is usually reported to be uncommon.

Oulema melanopa (2) Found in grassland.

FAMILY CERAMBYCIDAE — Longhorn beetles

Calombius filum (3) Found in abundance in July on flowers

Strangalia aethiops (4)

Tetropium castaneum (2)

Pidonia lurida (4) Common in forest clearings on flowers

Alosterna tabacicolor (4) On flowers everywhere

Leptura maculicornis (3)

Leptura scutellata (1) Two specimens seen on flowers on Tarnica mountain

Leptura livida (3) Found on flowers in the town of Muczne.

FAMILY SILPHIDAE — Carrion beetles

Nicrophorus vespillo (1) Only one specimen caught using meat traps

Thanatophilus sinuatus (4) Common in both the mountains and low lying regions, particularly on mountain paths

Silpha aterata (4) As for *Thanatophilus sinuatus*

Silpha obscura (4) Although local in the British Isles it is endemic to Bieszczady, found on mountain paths.

CONCLUSIONS

The Coleopteran fauna of the area is typical for a central European locality, although amongst the observations there are some interesting surprises. The very large numbers of *Liparus glabiristrus*, for example, are surprising, particularly when the forests are very scattered. The list gathered over two months of study in the area show clearly the great abundance of coleoptera fauna in the area and it would be useful to extend the study from June to September to get a better idea of the temporal abundance of given species. Surprisingly other insect orders were not very abundant and the Lepidoptera fauna was very limited. The woods and mountainous areas of Bieszczady, with rocky pools and streams are obviously very successful areas for the coleoptera.

REFERENCE

Harde, K.W. *A field guide to Beetles*. Collins, London.

BOOKS NOTICED

by the Editor

A field guide in colour to butterflies and moths by Ivo Novak. 8vo pp.352, including numerous coloured plates. Octopus Books, London. 1987. ISBN 0 7064 1293 1. Price £1.99.

The fact that this is the fourth reprint of a book originally published in 1980 must mean that it has been quite popular. It is now being remaindered at the above price. It is a field guide containing details of over 1,000 British and European butterflies and moths and includes details of distribution, time of appearance, larval foodplants and brief details of life-history.

The type used is rather on the small side and the coloured plates, which are printed on the same matt paper as the text, are not too inaccurate and at least depict the insects to normal size. A cheap book originally it is an absolute snip at its present remaindered price.

Butterflies and moths of the British Countryside by W.J. Gordon. Large 8vo, pp.150. 33 coloured plates. Omega Books, London. 1988. ISBN 1 85007 029 6. Price £2.99.

I should like to thank member Frank Marples (8226) for drawing my attention to this book which was originally published in 1900 and was a popular book that went through a number of editions of a smaller (small 8vo) size than this present reprint, which is a facsimile of an early edition. As is so often the case the coloured plates are not nearly as good as the original stone lithograph ones. Neither are they as good as those in the previous book mentioned; indeed they all have a great excess of brown in their coloration and I do not consider the larger format really suits. The text is of the briefest, but easy enough on the eye to read and a third of it is taken up by the index and list of species on the plates. An interesting book containing most of the British macrolepidoptera as known a century ago and while I prefer my copy of the original edition, this edition was originally published at £12.50, so well worth its remaindered price and a first edition in its fine decorative binding could well cost you ten times that!

Butterflies of the world by Rod and Ken Preston-Mafham. Large 8vo, pp. 192. Coloured and black and white illustrations. Blandford Press, London. 1988. ISBN 0 7137 1884 6. Price £2.95.

Another book, only two years old, which is being sold off cheaply. A reasonable introduction to the world's butterflies, as the title suggests. Apart from giving the structure and life-history of butterflies, much of this book is taken up with some very interesting discussion and comments upon behaviour, survival factors, variation, enemies of, ecology and distribution of, and the relationship of butterflies and man. A well-produced quality production now at a very reasonable price.

Butterflies and late loves by Margaret Fountaine. Royal octavo, pp.141. Collins, London. 1986. Price £1.95.

This book is a continuation of the earlier book from her diaries *Love among the butterflies* but unfortunately without the fine illustrations of the former. For those who possess the earlier volume (reviewed *Bulletin* 40: 67-69) it is essential and those who still have not got the earlier volume should try to get hold of both. The remarks made in our review of *Love among the butterflies* concerning the text and quality of production still stand for indeed this book continues Miss Fountaine's story from where the previous book left off until her death fifty years ago. It is a pity that apart from a frontispiece it is unillustrated, but at a tenth of the original price a bargain not to be missed, although like many remaindered books it may not be available in all such shops.

MOTHS TAKEN AT LIGHT AND SUGAR IN A SUBURBAN GARDEN

by Peter Crowther (9208)

I imagine that many readers of the *Bulletin* who are interested in moths will operate a light trap in their gardens, but I wonder how many still use "sugaring" as an alternative attraction. From late June until the end of September this year I have been using both techniques to take moths in my garden, and a comparative analysis of the results may be of interest to a wider audience.

I live in Cottingham in East Yorkshire (Watsonian vice-county 61) in a suburb at the western end of the village about three-quarters of a mile from open farmland dotted with occasional copses. There are six mature fruit trees in the rear garden and a large Rowan tree in the front garden which serve as sugaring posts.

My light trap is a home-made one which works from the mains and uses a 6-watt 8-inch Actinic 5 fluorescent light tube. Initially the tube was mounted horizontally above the funnel and baffles under a strutted cover, but at the beginning of August I modified it by attaching the tube to the baffles in a vertical plane as in the standard Heath traps. This made it more efficient and increased the size of the nightly "catch", and must be taken into account in any assessment of the figures given below (Table 1).

Month	Number of nights when trap on	Number caught in trap	Number of different species	Average number species per night
May	21	5454	10	1.9
June	21	6969	19	2.8
July	27	229	38	5.5
August	16	407	27	7.1
September	20	410	28	7

Table 1: Moths taken at light

Although the number of moths caught in August was almost double that in July, even though the number of trap nights was much reduced, yet the total number of species was lower in August than it was in July. This suggests at least that the modification might not have had such a marked effect on the range of species caught as it did on the overall number of individual insects taken.

I sugared up to five of the trees in my rear garden, and the Rowen in the front garden, on favourable nights throughout the summer months. I

used a traditional recipe for the "sugar" — two pounds of sugar, one pound of Fowler's black treacle stirred into half a pint of stale beer and boiled gently for four minutes — topped up with a few drops of amyl acetate and a good swig of British sherry (cheaper than rum and less of a sacrifice to make). This was sufficient to last for several nights and was "painted" on the tree trunks on their lee side (if there was a breeze) in strips about two feet long and three inches wide. At the height of the "mothing" season in late July and early August I was observing at sugar about 70 - 100 moths as against the capture of 50 - 60 in the trap (after modification) on a good night.

However, numbers in themselves are of less interest than the diversity of species. Some comparison of the range of species taken by the two methods over a period may be made from Tables 2 and 3.

Month	Number of "sugar" nights	Number of species	Average number of species per night
May	1	1	1
June	2	5	2.5
July	11	24	7.9
August	10	20	6.5
September	4	5	1.5

Table 2: Moths taken at sugar.

Month	Light		Sugar	
	Total number of species	Number of species at light but not at sugar	Total number of species	Number of species at sugar but not at light
May	10	9	1	0
June	19	17	5	3
July	38	19	24	5
August	27	14	20	7
September	28	24	5	1

Table 3: Analysis of difference species taken at light and sugar.

Clearly more species have been taken at light than at sugar but it is not possible to make a direct comparison between the two methods from these figures as the light trap was used more often than sugaring. However, it is apparent that some species are taken more readily by one method than by the other. Taking the season as a whole, more than ten per cent of the species taken in my garden were captured only at sugar.

The actual figures are as follows:—

Moths taken at light <i>and</i> sugar	= 25 species	= 28.1%
Moths taken only at light	= 54 species	= 60.7%
Moths taken only at sugar	= 10 species	= 11.2%

If my experience on such a small scale is typical it should serve to encourage other members to consider supplementing their efforts to catch moths at light by the time-honoured method of "sugaring". For those who have not the time or the inclination to operate a light trap on a regular basis, an occasional night's sugaring is an ideal way to sample the range of species of moths in one's locality. It's cheap, it's easy, and it's fun. All that is needed is a good lamp (a red one for preference), a supply of "sugar" and suitable weather conditions.

SPRUCE BARK BEETLE SURVEY

by Deborah Lewis, Press Officer, Forestry Commission

The Great spruce bark beetle (*Dendroctonus micans*) is regarded as a major pest of spruce. It breeds under the bark causing damage and in extreme cases kills the tree. It was first discovered in Britain in 1982 and is restricted to the west, mainly in Wales and adjoining English counties.

Since the beetle's discovery, annual surveys have been conducted in an area called the peripheral zone which acts as a buffer between areas where the beetle is known to be present and those where it has not yet been found. Over 2,000 sites were visited in the 1989 survey ranging from large plantations to single trees in gardens.

A survey began on 20th August searching for this beetle. The Forestry Commission asked the public to help by allowing official surveyors access to spruce trees in their gardens and letting them know of any other spruces in the area.

The survey lasted for about six weeks and covered a 10km wide zone stretching from the Severn Bridge to the River Mersey. The zone included Great Malvern, Worcester, Droitwich, parts of Bromsgrove and Kidderminster, Stourbridge, Dudley, Wolverhampton, west Staffordshire, and north-east Shropshire (north of Telford and south of Market Drayton), including Whitchurch.

Further information or advice can be obtained from the Forestry Commission offices. Telephone Dean (0594) 33057 (for Hereford and Worcester, Gloucestershire) or Rugeley (0889) 586593 (for West Midlands, Staffordshire and Shropshire).

DIPTERA RECORDED IN 1989

by P.M. Pavett (8263)

Having begun recording diptera in 1988 I continued to do so in 1989. Having acquainted myself with a few of the dipteran families I decided that instead of finding and recording the commoner and widespread species, which I had done in 1988, that I would set myself to finding and recording some of the rarer members of the order. Although then, not many species were recorded, a number of rare and notable species were found, these being as follows.

Syrphidae

Platycheirus perpallidus. RDB cat.3. A pair of these hoverflies were given to me by Ian Morgan being taken at Llyn Llech Owain (22-5671251) in Dyfedd.

Platycheirus fulviventris. A distinctly local species in parts of Britain. Found commonly in the marshy areas of Nicholaston (21-510878).

Chrysotaxum festivum. A widespread species but never abundant. A single specimen was taken at Machynys ponds (21-514980).

Doros conopseus. RDB cat. 2. In accordance with the habitat description given in *British Hoverflies* by Stubbs and Falk, a single specimen was taken along a woodland edge bounded by chalk downland at the Queen Elizabeth Country Park (41-176722) in Hampshire.

Eriozona syrphoides. It appears that this hoverfly is a new colonist to Britain that has found a niche in spruce plantations. A single specimen was taken at the spruce plantation of Cefn Yr Esgyrn (22-923035). This is probably the first record for Glamorgan.

Meliscaeva auricollis. A common species in the south but previously unrecorded by myself. A singleton was taken at Godshill (41-165151) in Hampshire.

Callicera aenea. RDB cat.2. A single specimen was taken at the flowers of Rhododendron, in Vinney Ridge Enclosure (41-262054) in the New Forest.

Rhingia campestris. RDB cat. 2. A single specimen was taken at Dinefwr (22-613219) near Llandiloes. Stubbs states as follows. "The occurrence of *rostrata* is very erratic since it may suddenly appear abundantly in various woods and then will not be seen for many years," and goes on to state in the Red Data Book 2 that: "no permanent populations are known." At Dinefwr this is the third year on the run that *rostrata* has been found in the exact same place. Perhaps this site will prove to have a permanent population of *rostrata*.

Myolepta luteola RDB cat. 3. Recorded in 1988 at Swan Green in the New Forest and recorded again this year in woodland near Lyndhurst (41-315092) in the New Forest.

Brachypalpus lathriformis. RDB cat. 3. Found at three localities. A female was caught as she emerged from a rot hole in Beech in Vinney Ridge Enclosure. A singleton was taken at Nicholaston (21-515880) thus confirming the note by Stubbs: "There is a record for the southern coast of Wales." Finally two were found by myself and Ian Morgan at Dinefwr Deer Park (22-611225), this being the only record for Carmarthenshire.

Criorhina ranunculi. Recorded in 1988, and recorded in 1989 at Nicholaston (21-510878).

Criorhina floccosa. A singleton was taken at Vinney Ridge Enclosure.

Xylota coeruleiventris. A singleton was taken at Strady Woods (22-488016) near Llanelli.

Brachypalpoidea lenta. Recorded in 1988 and again this year at Nicholaston (21-515880) and Lyndhurst (41-315092) in the New Forest.

Microdon mutabilis. RDB cat.3. A singleton was taken near Tywyn Burrows (22-395045) in Carmarthenshire.

Stratiomyidae

Microchrysa flavicornis. Common at Machynys ponds (21-514980).

Sargus iridatus. A common fly. However, only a singleton was taken, that being at Strady Woods (22-488016).

Oxycera trilineata. A fairly common species which was found in small numbers at Machynys ponds (21-514980).

Oxycera nigricornis. A more local species. A single was taken along the calcerous stream in Dinefwr Deer Park (22-607226).

Pachygaster atra. A locally common species whose larvae are to be found in the burrows of beetles boring in Elm. Large numbers of adults were found on sallow bushes growing in the dunes of Merthyr Mawr (21-845773).

Xylonyiidae

Xylomia maculata. RDB cat. 2. A rare fly especially hard to find in the adult stage. A single specimen was taken at Lyndhurst (41-315092). The fly was caught inside a hollowed out beech stump about six feet height and large enough for me to walk inside. The wood inside was crumbly and was being used as a nesting site for the solitary wasp *Ectemnius cephalotes*.

Asilidae

Dioctria linearis. A fairly common species in the south of the country. A singleton was taken at Stansted (41-753105) in West Sussex.

Dioctria cothurnata. A rare and local species in the south but commoner in Scotland. A single specimen was taken at Lyndhurst (41-315092) in the New Forest.

Tipulidae

Ctenophora atra. RDB cat. 2. A dead wood species. Found commonly at two sites, Coed Gwaenydd Bach (32-029008) a woods near Cwmbach in the Cynon Valley and at Dinefwr Deer Park (22-608223).

Ctenophora pecticornis. A dead wood species. Singletons were taken at Vinney Ridge Enclosure (41-262054) and at Dinefwr Deer Park (22-612226).

Ctenophora bimaculata. A dead wood species. A male and female were taken at Dinefwr Deer Park (22-612226).

Nephrotoma crocata. RDB cat. 3. A singleton was taken at Coed Gwaenydd Bach (32-029008).

PLENTY OF SCOPE FOR HOPE, AND NO ROOM FOR DOOM

by Paul W. Batty (8926)

Well! Here we are! We've made it to the Green 90s, and after more than a decade of news of pollution and declining species, the next few lines may cheer you up. Here in the most southern tip of South Yorkshire, things are looking up, entomologically speaking anyway. By May this year, it was clear to see that the good weather in 1989 has encouraged population increases in several species.

In the Anston and Dinnington areas, Wall brown is present in good numbers, even in gardens in the villages. There are more spring Peacocks and Small tortoiseshells than are usually seen in the autumn broods.

Comma is increasing in numbers (and has been for the last five or ten years) and Dingy skipper, which has been declining, is now having a slight increase on the last two years. Small copper and Common blue are on the increase and a few weeks ago, I spotted a female Holly blue, the first here for many years. Brimstone continues to be found in good numbers and at the moment there are thousands of Whites and Orange-tips. The Marbled white appears every year in good numbers (the result of an introduction in the early 80s), Ringlet has been increasing over the

last few years although last year's warm weather may cause a decline in this species this year. Large and Small skippers are found in good numbers year after year, and of the browns, the Gatekeeper seems to be expanding in numbers the fastest.

After the devastation of Dutch elm disease a lot of elm is regenerating and hopefully there may soon be evidence of White-letter hairstreak again in the area. Birds in the area are doing well also, with increases in kestrels, sparrowhawks, long-tailed tits, treecreepers, nuthatches and woodpeckers in the last few years.

So, provided that in the next few years we can put a stop to grass burning, crop overspraying, rabbit poaching (a severe Jack Russell/moron problem), tourist trampling, litter, acid rain, river pollution and the greenhouse effect, we should have the conservation problem pretty well sewn-up here and we'll be able to put our feet up and relax!

Just like British Rail — "We're getting there"!

BOOK REVIEW

Identification chart of British & Irish Dragonflies. Size 70 x 100 cms. Harley Books in Association with British Dragonfly Society. Price £4.99 (post extra if ordered direct from Publisher).

All the British and Irish species of Dragonfly are depicted on this chart which is taken from the excellent illustrations by R.R. Askew as used in his book on the Dragonflies of Europe. Many of the species are shown in both sexes and also some variant colour forms. With these insects having variable and transient colours, identification is often difficult, but nevertheless it should be possible with this chart to run down quite a few of them, although some of the more variable and similar species will still require detailed examination with a book of descriptive text.

Dragonflies are becoming more and more popular, as well as endangered, and so any publication that will help draw attention to their beauty and magnificence is to be welcomed. Not an item to be taken into the field, but just right to adorn the wall at home, or better still perhaps, the office, meeting room and school. Indeed this last is an ideal place for it where it will undoubtedly arouse the interest of children, as indeed my own interest in natural history was inspired by the superb wall charts by Frohawk and Fritch that used to be displayed on the walls of my Infant and Junior schools, many years ago. Are there still some of them around I wonder? In any case this present chart will make a worthy successor and deserves a place on many a wall.



Illustration: Tim A. Lavery

ODE TO A BUTTERFLY

Who knows what beauty lies within
That quaint encrusted form,
Attached to stem with silken thread,
Awaits to be reborn?
From a long sojourn in darkness
Transient days fulfill,
From your chrysalid entombment,
Burgeoning beauty thrills.
You rest awhile, your veins to fill.
Behold! Those wings so fair,
Pristine, you flutter skywards,
To embrace the summer air.

By Diane B. Lavery.

BOOK REVIEW

Behaviour-modifying chemicals for insect management applications of pheromones and other attractants. Edited by Richard L. Ridgway, Robert M. Silverstein and May N. Inscoc. 8vo, pp.761. Marcel Dekker, inc. New York and Basel. Paper-covered hardback. Price (USA) \$195, (UK) \$234.

This book immediately gives a bad impression of sloppiness by starting off with a printer's error in the first three lines of the Preface. A quick glance through reveals that this sloppiness is repeated on practically every page. If such carelessness has been allowed in the printing can we rely on the accuracy of the contents?

The layout of the type is absolutely appalling and sins are committed that, in the past, would have given any printer's apprentice the order of the boot had he committed them. I refer to the inexcusable practice of not just hyphenating words in the wrong place, but having sometimes three consecutive lines running hyphenated. Although variable spacing has been used, it is too variable, resulting in both squeezing and elongation between letters. A trying-on-the-eyes book to read due to faults which should have been corrected at the proof stage. In addition, it is standard practise with references, to give the date of publication immediately following the author. Here they are placed, mostly but not always, at the end of the reference; mostly, but not always, in brackets.

Even a £20 word processing programme with the cheapest of printers can produce better typesetting than we have here and for a book costing well over one hundred pounds one must assume the editors and publishers had no regard for their potential readers and rely on the fact that this was to be a book *needed* by entomologists in its subject and largely bought by libraries, who would have no choice, and therefore appearances did not matter.

This is no book for the beginner, whether Amateur or Professional. The text is solid meat, mainly, but not entirely, dealing with pheromone applications in North America. However, for those interested in the subject, or indeed in the environment and our efforts to stop gross pollution, then indeed it is of interest, for it is a mine of information on the subject and perhaps the best way to give some idea of its scope is to quote from the Editor's Preface.

"From the material presented in this book, we can conclude that in the area of behavioural chemicals there is reason for optimism that these chemicals can eventually lead to reductions in the use of conventional pesticides and significant expansion in the use of biologically based methods of pest control."

“The discovery, isolation and chemical identification of the sex attractant pheromone of the silkworm, *Bombyx mori*, in 1959 marked the beginning of a new era for insect biology and chemistry . . . knowledge of the chemical identity of pheromones has made possible a wide range of fundamental and applied studies that have greatly expanded our knowledge of insect behaviour.”

“Topics have been chosen to give a good overall coverage of the field, including principles involved, types of application that have shown promise in various ways, and development and regulatory issues. The coverage is international.”

“The book begins with a section containing reviews on the principles involved in using behaviour-modifying chemicals The case studies in the second section describe current and potential practical uses of chemicals against insects in horticultural crops, field crops, forestry, stored products, and insects affecting animals The book concludes with descriptions of the commercial development and availability of these chemicals and their future potential.”

“Considerable emphasis has been placed on scientific and technical documentation, although this varies considerably from chapter to chapter.”

In all, this volume should be of considerable interest and use for workers in the areas of insect ecology, behaviour and insect pest management. The whole subject is one which is not too well-known or documented in Great Britain and therefore worth dipping into in order to see what is known about the subject of controlling insects by luring all the males into traps by falsely pretending said traps are full of desirable females “calling”. The success or otherwise of such practices is described.

Many of the individual authors of the various chapters are senior and well-known authorities in their field and so it is a pity that they have been so ill-served in the appalling production and very high price of this book which, unless you have a very good reason indeed to have a copy for frequent reference, is one to be consulted in a library.

Brian Gardiner

PRACTICAL HINT — SETTING

by Christopher Nissen (7002)

When *setting* certain tropical Hesperidae it will be found that they are liable to spring, especially at the base of the hind wing. This can be avoided by cutting the muscle concerned with a sharp razor blade.

THE DISTRIBUTION IN BRITAIN OF *CEDESTIS* *GYSSELENIELLA* ZELLER (LEPIDOPTERA: YPONOMEUTIDAE)

by Maitland Emmet (1379)

I was interested to read Mr J. Koryszko's record of this species from Staffordshire. It is common over much of Britain, its range extending to the north of Scotland, but appears to be mainly eastern; as yet there is no record from Wales or Ireland, though this may be due to under-recording. Additional confirmed reports from the more westerly counties would therefore be welcome.

The species may not be as plentiful in Staffordshire as Mr Koryszko supposes. Many of the moths he was beating out could have been its even more abundant congener *Cedestis subfasciella* (Stephens) which occurs commonly in Staffordshire (Warren 1988) and is found throughout the British Isles. Both species feed on Scots pine, often on the same tree. It is difficult to separate the adults except under magnification.

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Warren, R.G., 1988. The smaller moths of Staffordshire. *Staffordshire Biological Recording Scheme Publication No. 13*.

PRACTICAL HINT — LOCALITY

by Christopher Nissen (7002)

The Small blue (*Cupido minimus*) may be found at Addington and also at Riddelsdown, in Surrey; to obtain larvae, collect seedheads of kidney vetch towards the end of September.

SOME FURTHER THOUGHTS ON THE RED ADMIRAL

by John Payne (5293)

Reading through AES *Bulletins* during past months, it is pleasing to see that the Red admiral (*Vanessa atalanta*) is most popular, not only with members, but also with the general observant public. My interest was aroused by the very early dates and the fine articles in the *Bulletins*, in particular those in the November issue of Volume 45, and these inspired me to see what I could find as regards other writers' opinions, especially on the subject of overwintering. In 1985/6, Mr Davidson of Moulton, Northants had a Red admiral in his conservatory, which spent the winter exactly as the Peacock (*Inachis io*) does, and it did not move until the spring. It was released because we had no other stock to try the theory of the character of inherent wintering, unlike 1988/9, when we had *atalanta*

from ova kindly given to us in November 1988 and reared in good numbers into the following spring. The longest-lived imagines were three which lived from January 1988 through to 30th March 1989. For a total of sixty-nine days they were fed on fructose (fruit-sugar solution). They fed readily.

The foodplant was most plentiful in the local park, but was heavily infested with aphids. Searching around I found very clean nettle along a privet hedge and on local allotments in a large rhubarb patch.

As regards a return migration, it was nicely put to me by a correspondent: "I don't think Mother Nature would be so wasteful as there not to be one". I agree. They have been seen flying south in very large numbers from the south coast.

Of the large numbers released in 1989, not one stayed in my garden for more than one day.

The question of not seeing them in the winter as with Peacocks and Small tortoiseshells (*A. urticae*), I would think is relative to the numbers staying in the British Isles (as the numbers seen of *io* and *urticae* are residents). The winters must be just right for *atalanta*, — a late autumn, a cold winter, but an early spring would be ideal. Of the early records, it has not been recorded how they passed the winter.

I would offer as food for thought the following extractions from various authors on the subject. There are probably many more.

British Butterflies by Vere Temple 1947.

"Our migrant Red admirals arriving in May produce a summer brood, some of which probably survive here in hibernation until the following spring. I have found a living Red admiral in January in my woodshed and a dead specimen in my garden. An indication of the comparative hardihood of this species is given by its habits. It may be seen feeding from the blossoms of the ivy in November, when cold damp nights succeed the pale sunshine of autumn."

Butterflies by Josef Moucha. Czechoslovakia, 1973 states there are no outstanding geographical races and that cases of successful hibernation have been recorded.

Butterflies and Moths by Robert Mitchell and H.S. Zim, USA, states that the adults hibernate.

A Field Guide to the Butterflies of North America east of the Great Plains by Alexander B. Klots also states hibernation by adults as well as by pupae.

Mr G.M. Owen (8718) of Sooke, British Columbia, Canada states

"The Red admiral *overwinters* as adults and are the first eggs to be found in the spring on the nettles, the climate is very moderate."

L. Hugh Newman in one of his 1959 books states hibernation is not natural to this species, which is continuously brooded in its native habitat. Mild winters show some will *survive* in the south and south-west.

My opinion is that true hibernation does occur, but is rarely observed.

The last paragraph on page 217 of that November *Bulletin* sets a challenge which could be taken up by some members with the years ahead of them.

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WOODLICE WANTED

I am assisting in an AIDGAP test version of "A key to the woodlice (Isopoda) of Britain & Ireland" for the Field Studies Council. I should be greatly obliged if fellow AES members could assist by collecting any woodlice they come across (up to ten individuals per species), from anywhere in the UK in particular, but from elsewhere if they happen to come across them, and send them to me at the address below.

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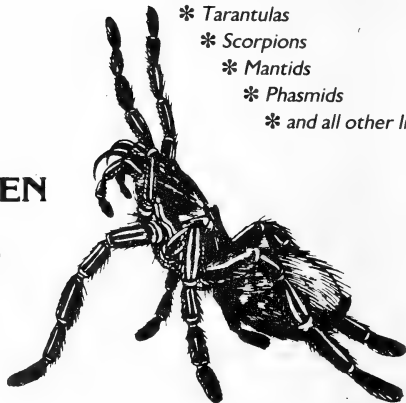
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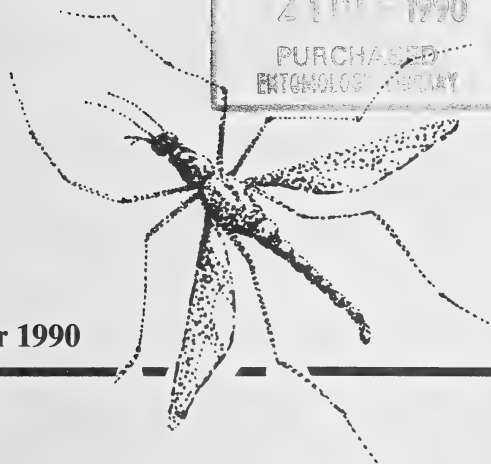
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CONTENTS

General observations on rhopalocera in the Ardèche region of Southern France during June 1982 by <i>N. Gossling</i>	187
Butterfly Research — the High brown fritillary	196
Ladybirds at light by <i>M.E.N. Majerus</i>	197
Practical hints by <i>C. Nissen</i>	199, 202, 215, 231, 232
Book reviews	200, 216, 228, 230
A waspish experience by <i>Arthur Cleverley</i>	201
Butterflies and moths of Northern Spain, August 23 - September 5, 1989 by <i>P. Waring & R.C. Thomas</i>	203
Europe's diminishing dragonfly population gives cause for concern. Britons take initiative in setting up first dragonfly reserve	210
Feltham marshalling yards — appeal dismissed	211
A memorable summer by <i>G.R. Smith</i>	212
Coleoptera in South-east Poland by <i>C.S. Cockell</i>	217
Books noticed, by <i>The Editor</i>	220
Moths taken at light and sugar in a suburban garden by <i>P. Crowther</i>	222
Spruce bark beetle survey by <i>D. Lewis</i>	224
Diptera recorded in 1989 by <i>P.M. Pavett</i>	225
Plenty of scope for hope and no room for doom by <i>P.W. Batty</i>	227
Ode to a butterfly by <i>D.B. Lavery</i>	229
The distribution in Britain of <i>Cedestis gysseleliella</i> Zeller by <i>M. Emmet</i>	232
Some further thoughts on the Red admiral by <i>J. Payne</i>	232
New book sale	234
Woodlice wanted	234



Volume 49, No. 373, December 1990



The Bulletin of the Amateur Entomologists' Society

EDITOR

BRIAN O. C. GARDINER, F.L.S., F.R.E.S.

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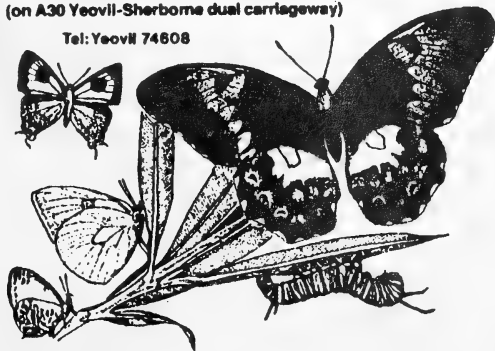
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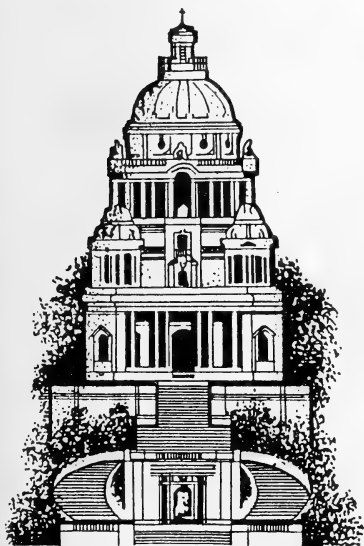
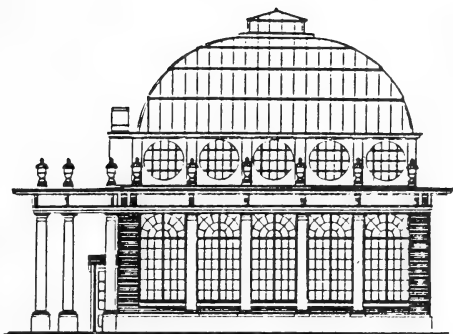
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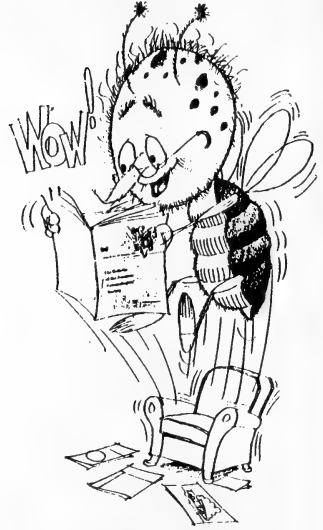
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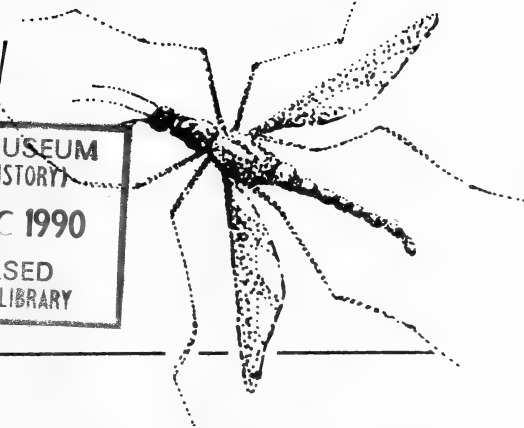
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No. 373



LETTER TO THE EDITOR

I decided to write immediately after my first ever visit to the AES Exhibition, before the customary spate of moans about the presence of dealers once more sullied the pages of the *Bulletin*.

As a complete "newcomer" to the exhibition, may I say what a *pleasure* it was to see so many dealers there! While I would agree with those who wish to see a greater number of members exhibiting, I feel that the dealers add a splash of colour and variety which would otherwise be lacking.

I don't collect beetles, scorpions, spiders or exotic insects — nevertheless it was marvellous to be able to walk round and examine at leisure stands such as Goldwing Butterflies (which I found particularly impressive) and others. I was also very impressed by the books which were for sale and splashed out on a couple of items which I'd been unable to track down elsewhere.

Coming from Scotland (a barren entomological desert compared to the south) it was a delight to meet with fellow-entomologists and compare notes. Eavesdropping on conversations provided all sorts of useful tips too. I overheard one snippet of conversation which went something like this: "You've no idea how much trouble I've had with that female, John. I simply can't get her to lay for me." Just as the casual bystander might have been tempted to offer the suggestion that a few gin and tonics might work wonders, the speaker's companion mentioned regular spraying and placing buddleia in the cage!

More seriously, however, it would be a great mistake, I feel, to curtail the dealers in an effort to appease the extremists in the conservation lobby. A responsible attitude to trading already seems prevalent, so PLEASE . . . let us have no moans about the dealers who provide not only a valuable service to the amateur entomologist but also enhance the exhibition with a colourful and varied selection of items to suit all tastes.

M.A. Hope (8139)

OBITUARY

B.R. STALLWOOD — 1910 - 1990

Honorary Life Member and Past-President

Members of the Society will learn with regret and sadness of the death in July of Roy Stallwood. Since boyhood Roy had a great interest in the countryside and in natural history, particularly the butterflies. At the age of eleven years he would cycle from his home in Southampton to the New Forest to savour the then rich butterfly fauna of the Forest and holidays were spent with his grandparents at Stockbridge, enabling him to enjoy his hobby in favourable surroundings. In 1924 he joined the Ordnance Survey Office at Southampton as a cartographic draughtsman and during the War he served as a Special Constable during the "blitz" on Southampton. In 1942, due to bomb damage, the headquarters of the O.S.O. was transferred to Chessington in Surrey and Roy and his wife, Beryl, moved to Twickenham. He joined the Society in 1950 and his close proximity to London, where the Society's Council met, made it possible for him to take an active part in the promotion of the Society and he was elected to the Council.

At this time the *Bulletin* was published monthly and when the editor, W.J.B. Crotch, resigned in 1953, Roy took over and served as Editor until April 1963 when he handed over to W.N. Lawfield. He continued to serve on the Council and for many years acted as our Assistant Treasurer with the responsibility of collecting annual subscriptions, an onerous and frustrating task as his successor can confirm.

When the Society became a Registered Charity, Roy and our other Roy, Roy Hilliard, became the Society's Trustees. With the return of the O.S.O. to Southampton, Roy and Beryl moved to Cheriton in Hampshire to be nearer his work and on his retirement in 1975 he was awarded the Imperial Service Medal for his work for the Office. In 1979 he was elected as President of the Society and an Honorary Life Member in recognition of his services to its membership.

The increasing size of the Society and the work involved in collecting subscriptions meant that eventually Roy had to resign from the office of Assistant Treasurer but at this time he was able to publish in our *Bulletin* the results of his important pioneer work on the feeding habits of adult butterflies, a subject which is now recognised as being an important factor in the ecological suitability of many butterfly habitats.

I first met Roy when I too moved to Middlesex and became a member of our Council on the recommendation of Stan Hanson. We then met in the rooms of the London N.H. Society near Victoria Station and I recall



ROY

being made to feel at home there by Roy. He was a quiet and gentle man who spoke when he had something constructive to add to our deliberations and he carried out the tasks which he undertook for the Society with efficiency and without fuss.

He has gone to join a band of other members to whom our Society owe a great debt. Remember him with thanks and think also of Beryl in her great loss.

Peter W. Cribb

BOOK REVIEW

BUTTERFLIES — A practical guide to their study in school grounds via the national curriculum by Dr J. Feltwell. Published by the Learning Through Landscapes Trust. 20pp. 12 colour plates with black and white sketches. Sponsored by the Hampshire County Council. No price stated.

Published by the Trust to promote the better use of school grounds as educational resources, this very well produced leaflet is planned to meet the requirements of the national curriculum and its attainment targets. It relates its various studies of butterfly lives to aspects of the curriculum in a practical way with suggestions for work both in the classroom and in the school grounds. It will undoubtedly be most useful to teachers in our schools and the Trust is to be congratulated for its initiative.

My only criticism is the many general statements which are not strictly true. These may arise from the author's intention of keeping things simple but inaccuracies cannot be justified. The statement that "bright colours in butterflies have evolved to attract the attention of predators, indicating that the insect is poisonous" hardly stands up and ignores the use of colour in attraction for mating. Similarly, "Moths fly at night and do not usually have bright colours since there are no bird predators", and "Moths' feelers are very feathery" need some modification and the statement that larvae moult four times ignores those species which moult five or six times. It is stated that the Painted lady in its 1,500 mile flight from Africa rarely lands to feed, yet observation on the Continent shows that settling to feed regularly occurs and even breeding en route with the progeny continuing the journey often happens.

A major error occurs on page 13 where it is stated that the Meadow brown has three generations in the year, whereas the species is strictly uni-voltine, spending the greater part of the year as a larva.

The leaflet's appendix gives sources of further information, suppliers of livestock and equipment and relevant Societies, including our own.

OF PURPLE EMPERORS AND LARGE BLUES

by Rob Parker (5247)

Like you, I have often read other people's accounts of close encounters with Purple emperors, and registered either scepticism or envy. Very well, I decided, after all these years it is time to see more of them than the two fleeting glimpses I've had so far.

We started on 13th July 1989, at a very specific site in a well-recommended wood in the French *Département* of Meuse, but some miles from the river. In the late afternoon sun it was clear that this was a wonderful locality as butterflies swarmed round to greet us. I chose a vantage point atop an old bridge in a clearing surrounded by great oaks and mature poplars, but including, I was careful to note, some lower growing willows (*Salix* spp.) and plenty of aspen (*Populus tremula*). That evening I got a couple of tantalising glimpses of large strong fliers, followed eventually by a pair in majestic chasing flight. As they wheeled around the clearing they came close enough for me to be sure, and my spirits lifted.

Le quatorze juillet dawned overcast, and although the 200th Anniversary of la Revolution was memorable for its pageantry and its fireworks, we had to wait another day for *Apatura*.

The unambiguous advice of my Belgian colleague, had been to set Herve as bait, so I took out the over-ripe and preposterously strong-smelling Belgian cheese, and spread it at shoulder height on the piers supporting the bridge. In the bright morning sun it dried out and lost its smell surprisingly quickly, though my return trips found three species feeding on it: the Comma (*Polygonia c-album*), Red admiral (*Vanessa atalanta*) and the Map (*Araschnia levana*), an attractive little butterfly which is common on the Continent.

As the day warmed up, more species came out, and just after noon I was rewarded with a glimpse of a Purple emperor. It circled my bait and settled nearby, but just out of reach on top of an ash leaf well above my head. I got into a position to see and was surprised that it was not as large as I had expected. When it opened its wings I realised that I was looking at the orange form of the Lesser purple emperor (*Apatura ilia* form *clytie*). They behaved regally, outflying the large fritillaries with a *joie de vivre* that made them a delight to observe. Often one would circle the clearing and as it swooped low over the tops of the aspen another would dart out and chase it, then a third would join the pursuit, and just once a fourth. They seemed to enjoy the calm of the late afternoon, and by watching closely, I learned to spot one of them dropping out of the game for a rest. The crown of one tree seemed particularly favoured and I was

able to change my high vantage point for an underside view. Lying on my back and looking up I watched them carefully but saw no egg-laying — they simply rested, wings closed until incited to join a passing chase. Neither did they investigate my smelly cheese again.

We moved on, through Strasbourg and into Alsace, with its *Route des Vins* linking delightful villages. We selected our destinations from the *Guide des Auberges de France* with a pin and were heading for La Laye, just approaching Ville, as we pulled off the road in search of a shady picnic spot. As we ate I noticed a number of Purple hairstreaks (*Quercusia quercus*) flitting along the path towards some young Oaks, so I wandered off to check. I used a sharp tap on the trees to dislodge their silvery forms, and then I saw one that wasn't at all right — it was too big, too dark, too slow-flying, and anyway it was in the shoulder-high dried grass beyond the tree, not amongst the branches. It came effortlessly into my net, and what a pleasure it was to find a Large blue. On closer inspection though, and on checking in Higgins' *The Butterflies of Britain and Europe* — my preference for use in the field — I realised it was the Scarce large blue (*Maculinea teleius*), a species new to me. Taking another look at the locality I found it moist underfoot, and I did flush a second specimen out.

La Laye turned out to be at the foot of a delightful isolated valley, and quite the perfect place for walking and entomologising alike. Our next morning's drive took us through deciduous woodland with lovely views and we looped back down into the valley where I was confronted by a Purple emperor sitting in the road. I jammed on the brakes and stopped a couple of metres from it, leapt out, grabbed the net and dashed forward again to find that it was a fine male sitting totally absorbed on a dog's dropping! This time it was *Apatura iris* (as distinct from *ilia*) and it had probably come down to the adjacent malodorous garbage heap before detecting this particular delicacy. Once again, both *Salix* and *P. tremula* were in evidence. A hundred yards further on there were a lot of Pearl-bordered fritillaries (*Boloria euphrosyne*) beside the stream and then I noticed more Large blues (this was about ten miles from the previous day's spot). So far, I had been pretty restrained, but I thought that a couple of specimens wouldn't be out of order. I came back that evening and found the stronghold of the colony on a moist meadowbank above the stream. They were especially active between five and six pm. I noticed at once that the males were easy to catch, whilst the much darker females flew more determinedly between flowerheads. I'm glad that I did take a couple of each, because I was wrong about the sexes. When I got them home I realised that there were two separate species. The pale blue ones were the Scarce large blue (*M. teleius*), whilst the darker ones were the Dusky large blue (*M. nausithous*), so naturally I was delighted to discover my oversight.

The following day, whilst visiting the Centre for the Reintroduction of Storks (*Les Cigognes*) to Alsace, I saw another unlikely species. Highly visible about a Buddleia bush was the South American Heliconid *Dryas julia*. I took a photograph, just to be sure, and then paid my FF20 to go into the nearby butterfly house! Sure enough, *D. julia* was on display in large numbers and it was not difficult to spot a couple of possible routes of escape.

The Vosges are more extensive than I had imagined, and they stand up above Alsace offering near Alpine scenery topped with coniferous plantations or extensive deciduous forest. We drove over the celebrated Col des Cretes and on to the source of the Moselle where we stayed for a couple of nights. The road from St Maurice up to the Gazon Rouge ski area had an inviting side valley, so we took a walk up the forest track and I sat for a while reading Allan's *Moths and Memories*, a truly delightful account of the field work of a raconteur and total devotee of Lepidoptera. One of his recurring refrains is the need for authors to weave some charm and readability into the literature of entomology. If you have not read him you simply must, especially since the publishers have let the price of their stock remain untouched by several decades of inflation. Under his influence though, I am inclined to digress . . .

On returning to our car, by now in the full sun, we found a male *A. iris* had been attracted to it, and we got some excellent close-up views before it flew off. By now my Herve had been expended so I put out mouldy plums and some fresh Camembert as bait. Intrigued at the sight of a lunatic spreading good Camembert on the countryside, a passing Frenchman paused to make enquiries. His incredulity gave way to a Gallic shrug as he discovered that I was an English butterfly collector — clearly this explained any form of irrational behaviour.!

Presently I spotted a couple of Purple emperors circling a beech above an aspen and near a willow. I netted one as they swooped low over the road, and offered the bait but could not get it to feed. It was definitely *A. iris* (a male), not *A. ilia*, and I took pleasure watching the power of its upward flight as I released it.

Returning the following day (26th July 1989) we were rewarded by more close encounters. In a glade further up the valley I was astounded by the sheer size of one dark form high up the side of the valley, and excited when it came down to ground level at an accessible spot. I stalked it with great care and found it feeding at the base of a conifer, where a stream of sap was oozing from a damaged root. So absorbed was this very large female, that I was able to squat for some minutes just a couple of feet away from it. We saw two more on the path back down to the car. Indeed they seemed friendly and more or less accompanied us back to the car. One settled on the bonnet and then obligingly transferred itself to

my wife's finger before my very eyes. At that moment I was converted. I realised that all the unlikely tales that I had read about other people's encounters with *A. iris*, were after all, true!

The following morning we paused above Bussang before driving home, and had a farewell sight of *A. iris* in yet another location. In all this made eight separate sightings at five different locations. I was pleased to have been so successful with the Purple emperors. The Large blues were a bonus!

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TO MEMBERS LIVING IN EIRE

Because the Post Office now considers Eire to be "overseas" for mail purposes and charges the same rates as for Continental Europe, it has unfortunately become necessary to consider our members in Eire as "overseas" members, so that the annual subscription rate for 1991 is £8.00 for all such members. If you have already paid for 1991 at the lower rates, I should be grateful if you would remit the balance to me so that your *Bulletins* for the coming year can be despatched to you. The Society has borne the extra postal costs for 1990. All members should remember that their membership number now appears on the front of their *Bulletin* envelopes.

Mrs. R.A. Cribb (Registrar)

FRIENDS OF THE NATURAL HISTORY MUSEUM: INFORMATION

An exploratory meeting to consider the setting up of a *Friends of the Natural History Museum* was held at the Museum on Thursday 25th October 1990 under the Chairmanship of Jonathon Porritt. The meeting was addressed by the Director of the Museum, Dr Neil Chalmers and some 50 interested individuals attended.

It was agreed to set up a *pro tem.* committee to work on a constitution for The Friends, and meantime to produce a newsletter for all those who wrote in support of the idea of a Friends organisation before the meeting. (These amounted to some 300 individuals worldwide.)

If you wish to be put on the mailing list for the Newsletter, please get in touch with Miss Adele Carritt, 14a Shelley Court, Tite Street, London SW3 4JB. Telephone: 071-351 0525.

DOWN THE TUAH ROAD

by Leigh Plester (2968)

(Continued from page 63)

Some months before departing for Borneo we had boned up on Bahasa Malaysia, using a book and cassettes on the Indonesian language available for loan (by some miracle) from my local public library. Armed with such useful phrases as *Anjing menggonggong* (A dog is barking) and *rantai ban* (tyre chain), we felt able to converse with all and sundry. Our greatest triumph was *Ada gula, ada semut* (Where there is sugar, there are ants) — very handy in the customs hall. Sarawakians turned out, however, to pronounce their vowels differently to Indonesians, which took a bit of getting used to; but by far the greatest obstacle was Stephen, who had adopted a mother hen attitude towards us that included protection from the Malay-speaking populace. So we used to sneak into department stores and regale the shop assistants with what a Singaporean guesthouse caretaker had informed other Brits was our “Jungle Malay”. Our efforts at mastering the language were quite unnecessary in a country where English is not only one of the official languages, but is in some cases the sole way of communicating across ethnic boundaries. Only, it’s always such fun to have a go.

While sticking to his noodles, at Sibul, Stephen explained to our café proprietor by a series of grunts and honks that he assured us was Cantonese in action that we white men would like poached eggs, toast, jam and coffee *kosong* (literally “without”, i.e. without the standard condensed milk). Fortified by this precast English breakfast, we piled into the Jabatan waggon and headed out of town towards Ulu Oya.

The pepper gardens were frequently set on slopes, the vines — up to twelve years old — winding up their *belian* poles and displaying clusters of hard green berries. There was little underfoot except mud, the pepper vines requiring regular inputs of fertilizer. Very occasionally the neat rows would provide an avenue for some flying insect — a droning wasp of immense proportions, or a hurrying Lacewing (which is a butterfly — I’ve already mentioned that Borneo is entomologically round the bend). After filming one of the gardens in “16 mill” we pressed on up the road and finally pulled up alongside a cocoa plantation. Our driver, Tim Tuck Toon, had gauged our parking place to perfection; we stepped out into ankle deep mud.

The cocoa plantation was a gloomy place, huge piles of halved cocoa pods lying at strategic intervals and providing ideal breeding places for mosquitoes when they filled with water during storms. Of the Faded palm king (*Amathusia gunneryi*) we had chased and cursed at Sambir

there was no sign, although huge nymphalids, later identified as the Baron (*Euthalia dirtea*), now and then could be glimpsed rushing over the plantation.

While Stephen and the other field workers split cocoa pods and estimated the incidence of Cocoa moth (*Acrocercops cramerella*) larvae infection, Nick and I abandoned the plantation, crossing the new tarmacked road to the old, amputated "oxbow lake" of a throughfare with its ancient solid dirt surface. Tim had thoughtfully driven the Patrol into a shady patch on this road, leaving the doors wide open until just before we departed, when he closed them and turned on the air con.

With reason! The heat on the road was terrific. The air temperature hovered around 33°C, but with the heat rays bouncing off the road and the peculiarly orange-brown oxysol soil of northern Borneo, the actual temperature was considerably higher. I was by now quite brown, but it still felt as though my skin were afire. A sign of catching a tropical sun is reddened skin *under* the arms. To reduce perspiration on short jaunts, I carried only my kite net and a killing bottle charged with ethyl acetate that bounded out genie fashion whenever I opened the lid. Killing fluid is generally unnecessary in South-East Asia anyway. Lepidoptera are quickly dispatched by means of a quick nip to the thorax, other insects (including the large *Xylocopa latipes* carpenter bees) surviving on sunny days for literally ten seconds in a small polythene bag closed by an elastic band and laid on the top of one's car.

We ambled up the old road, meeting Crow butterflies (*Euploea crameri* and *E. mulciber*), a couple of Sailors (*Neptis hylas*), two male Lacewings (*Cethosia hypsea*), a Swallowtail that seemed to have come from Britain and which declined our closer inspection, one large black Aeschna-type dragonfly with yellow spots, and three grey and brown *Charaxes*-shaped nymphalids that may have been *C. polyxena*. Contrary to popular belief, Borneo roadsides do not teem with insects; one sees about the same number one might expect to find along an English lane in June or July. At least while we were in Sarawak, there was none of the abundance associated, for instance, with clover fields in Central France, or Alpine meadows, at the height of the season. This is probably because the flight times of insects are so spaced out in the equable climate.

After a brief sojourn at Sibü (19-20th April) Nick and I boarded a plane for Kuching and spent an hour on 21st April booking flights back to Sibü for 24-28th April, when my wife and her friend Seija would already be with us and we could go up the mighty Rajang river. My first specimens, carefully packed in the Dept. of Agriculture's 800 gram box went off to Finland by air at at cost of 50 ringgits (about £10.50). A stout pair of Chinese canvas boots for 19 ringgits much improved my stride,



Fig. 1. Our second villa at Bako National Park was shared with squirrels, other rodents, and even (almost) a Monitor lizard.
(Photo: Majuri and Plester)

while an Indiana Jones bush hat for 4.80 ringgitts simply served to emphasise the absence of a crocodile under each arm. We rectified the latter deficiency by ringing up Jong Joon Soon (Johnson) and requesting permission to poke a lens through the wire mesh at "Jong's Crocodile Farm" near Serian.

The chief impression that has remained in mind is that crocodiles have a serious b.o. problem, so much so that if you want to keep buffalo out of a river you might consider putting in a croc to frighten them off with his stench. More sobering were the lurid colour pictures depicting an eight year old child being removed, minus one limb, from the stomach of a fourteen-foot crocodile just a couple of years previously. After studying these prints I treated rivers, and puddles in the street, with great respect.

Typical of his boundless generosity, Stephen had entrusted us not only with his house but with his Toyota car, too (his young Malay *Amah* he had unsportingly cloistered somewhere downtown). Armed with international driving licences and a preference for driving on the right, Nick and I scythed our way through the be vies of motor cycles, private cars, buses, vans and the occasional barrow, all bent on keeping to the left, and headed towards Semonggoh and Bau (quite close to the Indonesian border).

The mountains towards the frontier with Kalimantan, which constitutes most of Borneo island, "are fantastic" says my note book, "rising sheer, their almost vertical rock faces clothed in the remnants of primary rain forest". Intercropped banana and cocoa lined the route with, in one place, a field of maize sporting the long male tassels. As the road began to deteriorate into a pot-holed, semi-metalled, back-to-the-jungle invitation to a broken spring, we swung about, lamenting the fact that my Land-rover was ten thousand kilometres away, and turned off down a side road that became progressively narrower and more jungly and exciting with every passing kilometre.

For most of the way it was the equivalent of the English country lane, a rampant tangle of shrubs and herbs interspersed with the odd secondary rainforest tree and with odd drivers who for some reason found it difficult to pass when we abandoned our car in the middle of the lane, doors open, for flut-chasing and heat stroke. Even before we reached a tiny shop — an earthen floor, *atap* roof, dark hard benches, worn brown counter, glass-fronted, fly-specked, gloomy, cocacola and fanta crate, droopy banana, friendly boy "sales assistant", whole family drifting in, country nowhere shop — we had already stopped a dozen times. Fired with enthusiasm, planter's straw hat askew, HASH tee shirt stained with perspiration, Nick became as eager as I was to die of heat



Fig. 2. Primary rainforest, with typical buttress roots and palms. In this undergrowth flew *Thaumanitis notreddin*. (Photo: Majuri and Plester)

stroke. With both kite nets aflap, the car bat-like, its doors balefully blocking the road, and two Wildmen from Europe, screws popping out of their heads, the insects should not have had a chance. Even so, only about one in ten found its way into the papers. (Author's note: triangular paper envelopes, not the national press.)

Fortunately cloudy weather enabled us to actually trot after the specimens. There were three yellow, white and black Chocolate albatrosses (*Appias lyncida*), a couple of very small blues, one Common sailor (*Neptis hylas*), two Grey pansies (*Precis atlites*), a trio of rather robust skippers, a bush cricket with monstrous eyes and Jong's-croc jaws, a sprinkling of Common bluebottles (*Graphium sarpedon*), and a specimen noted scientifically in my diary as being a "spectacular black and white something". A huge dark butterfly, spotted, garnished with a blue sheen, appeared twice — and kept going. Dazzling yellow, black-tipped Common grass yellows (*Eurema hecabe*) were everywhere.

Most intriguing of all was an enormous satyrid, later identified as *Neorina lowii*. With its spurred hindwings and white splash, it looked more like a swallowtail than anything else, but of course in Borneo it had to be an owl — a Malayan owl, to be exact. Corbet & Pendlebury (1955) wrote of it: "a fossil butterfly discovered in oligocene deposits at Aix-en-Provence, France, closely resembles *N. lowii*. It has been established that western Europe supported a Malay flora during part of the Tertiary..." — Eat your heart out!

Near the shop a bevy of tiny fritillary-like butterflies were speeding about close to the ground. Gratifyingly, Corbet & Pendlebury also say of *Phalanta alcippe* that "in general appearance the species bears a resemblance to the English fritillary butterflies". Its local name is (cor, blimey!) the "Small leopard". While we partook of some liquid refreshment at the shop, Nick said "I bet you don't see many butterfly collectors around here". The proprietor's son shook his head. "Only the Japanese," he said cryptically. We nosed the car down an even narrower road towards, according to a sign, Kampong Bunuk. "Wait a bit," said Nick, climbing out, to return presently with a big bag full of sweets. "Just in case we meet a longhouse," he explained.

If the reference to Japanese collectors had not set our minds ticking, the name of the village ought to have done so. Soon we emerged on to a neat section of grass, lined by well-kept longhouses; there was not a scrap of litter in sight. Ominous. "Looks funny," remarked Nick, peering around the landscape. We stopped and switched off the engine. A brown child whose face was primarily a huge grin suddenly materialised, to be followed instantly by two more. Two ticks later more popped out of the woodwork termite-fashion. I fed electricity to the starter, checked to see that no part of the approaching dark horde was within striking distance,

and executed a Miami Vice turn, burying the village in dust. It was only later that, browsing through a tourist brochure, we came across the name of Kpg Bunuk — “be sure to visit a real longhouse not far from Semonggoh wildlife rehabilitation centre”, and realised that it was on every economy tourist’s itinerary. Mean with our sweets, at least we had had the satisfaction of reducing the incidence of dental caries in a tribe that for no fault of its own has been incorporated on a tourist route.

In Kuching on the evening of 23rd April, with the first bottles of tiger beer opened, beaded, clammy, frothing, straight from the fridge, I was just dragging one of my agricultural department boxfile collection boxes on to the table, propping open the lid, when two things happened simultaneously. A horde of tiny flies shot out, and Stephen walked quietly in, casting off his shoes, as is the custom in those parts. It was a funny thing about the flies. At night cockroaches wriggled out of crannies to eat the dead flies lying scattered under the strip lights; now tiny flies had laid their eggs around my dead cockroaches and the new generation was just hatching having, presumably, dined on steamfly steaks.

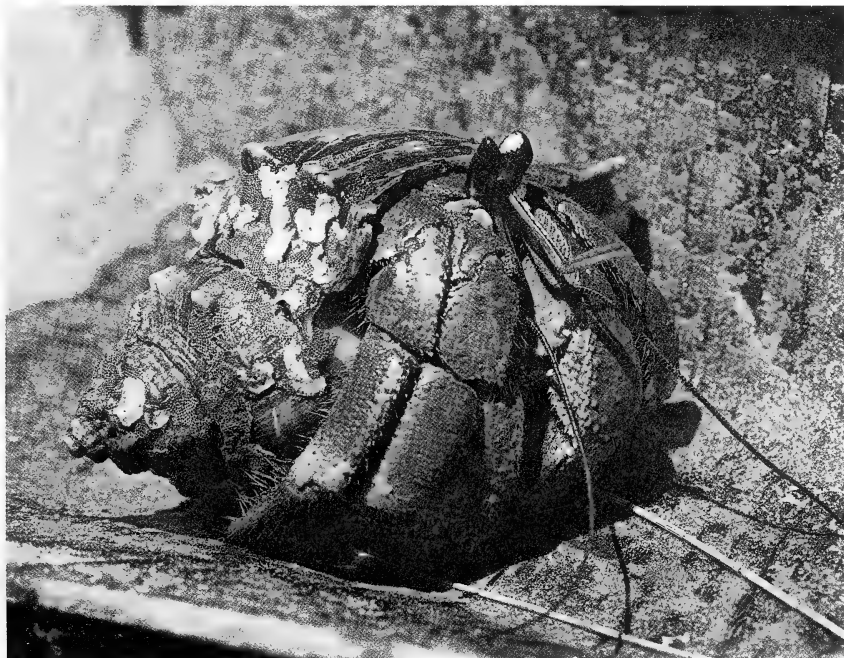


Fig. 3. Hermit crab. Active at night, could be found high up in bushes during the daytime.
(Photo: Majuri and Plester)

I repositioned the box of drying creepies on our dining cum laboratory cum film-labelling table, from which Nick, being unable to face the pong three inches from his breakfast, had gingerly removed it screw-nosed in the morning. Stephen, shunting most of the other items to one side, began to unpack his polythene carrier bag. A football of giant Atlas moth cocoons surrounded by dried soursop leaves came out first, to be closely followed by several small polythene bags housing, among other goodies, a dark little moth like a hummingbird hawk. Much to my chagrin, all the Atlas cocoons had already hatched. Where others might have unwrapped the fish and chips, our host now unrolled a sheet of newspaper. Ten centimetres of dark grey, very leggy, well armoured centipede rolled out on to the varnish. Part of its abdomen was missing and the arthropod was very dead having, apparently, been run over. "What happened to the car?" I asked flippantly.

Later, "Do you really want to try some *tuak*"? Stephen asked. I had imagined one sidled down to the railway station, as for Finnish *pontikka* (moonshine), and hung around until someone approached capable of twisting his mouth under his ear and rasping "D'yer want summat, mate?" But: "Can you buy it just like that, legally?" "Ye-e-e-s. No problem!" And so in time our benefactor returned bearing four bottles of the unlabelled pale yellow rice wine — on the other hand, mules seldom do carry labels. Warily we drank it, and enjoyed it immensely. In most longhouses when visitors arrive the old *tuak* is brought out in enormous kettles, tipped into tooth glasses and then downed in a single gulp for an hour or two, until one has consumed ten litres, or expired, whichever comes first.

Needless to say, these impromptu *Tuak* Contests are almost invariably won by the Iban, one-time headhunters.

... to be continued)

A PAINTED LADY IN NEW MALDEN

by Frank Middleton (8875)

At approximately 12.20 pm on 4th September 1990 I was examining some plants in my garden when I suddenly disturbed a butterfly which had been resting on the ground.

It flew out of sight but returned soon after to visit a large buddleia which is planted on one side of the garden.

On closer inspection I saw that it was a Painted lady (*Cynthia cardui*). It then flew around before resting on the ground to sun itself. The weather was warm but cloudy with occasional sunshine. This is the first time since 1966 that I have observed this species in New Malden even though I have tried to observe it in the period since then.

**THE BRITISH BUTTERFLY CONSERVATION SOCIETY'S
BUTTERFLY FESTIVAL AT JUNIPER HALL FIELD CENTRE,
7th and 8th JULY 1990**

by Dennis Newland

After the great success of the Festival in 1988, BBCS London Branch set out to make its second Festival even better. If the number of people asking whether there is going to be another one next year is anything to go by, then we may have succeeded in our aim. We in fact attracted over 1500 people on a Wimbledon Tennis and World Cup Finals weekend.

The weather was kind on both days for our Festival, which had a host of features.

Near the entrance to Juniper Hall under the cedar tree, a stall sold nectar plants for butterflies and foodplants for caterpillars, all grown by members with a staggering taking of £650.

The main building housed our displays, sales stall and lecture theatre.

Displayed in the entrance hall were entries by children from local schools in a painting competition. The standard was very high with prizes given to winners.



Fig. 1. General view of BBCS Festival at Juniper Hall.



Fig. 2. The Butterfly Walk party being briefed by the leader.

Artistry of a different kind was to be found in over one hundred butterfly paintings by fifteen adult artists, who ranged from gifted amateurs to well-known professionals. In a similar vein one of our philatelic members showed part of his collection of butterfly stamps.

The antiquarian and modern butterfly books and prints were very impressive — the earliest dated from 1643 and in another room the Kingston Embroiderers Guild showed their work, all featuring butterflies. They generously raffled a magnificent quilt for our funds.

A row of microscopes in the Centre's laboratory permitted visitors to see butterfly "parts" enlarged, the majority of the slides were produced by one of our younger members. Also available were a supply of dead specimens of tropical butterflies from the London Butterfly House for visitors — particularly children — to handle. The London Butterfly House also kindly lent us their mobile display cabinet where we were able to show live tropical butterflies in their own environment. Alongside captive bred British butterflies could be seen in a number of flight cages.

A full programme of lectures included talks by Bob and Joyce Yates, who run a Butterfly House in Australia, and a presentation of the winning slides of a competition judged by Jane Burton and Kim Taylor.

Outdoor activities included guided walks to local habitats — John Bebbington, warden of Juniper Hall was one of the leaders.

The lawns of Juniper Hall are a perfect place to create a garden party atmosphere. It was here that refreshments could be taken to the accompaniment of the Thurston Clarinet Quartet, the British Gas hot air balloon seen in action, a balloon race entered, or Peacock butterfly larvae inspected on naturally occurring nettles. Also outside were the Lococo painters, who would decorate your face with a butterfly for a consideration.

The Mayor of Mole District Council honoured us with his presence on the Sunday when, accompanied by his wife, he toured the Festival and drew the raffle for the quilt.

BBCS London Branch wish to record their thanks to British Gas, who sponsored the Festival, and also the Field Studies Council, and John Bebbington the warden for permitting the use of Juniper Hall.

THE RAPID LIFE CYCLE OF THE QUEEN OF SPAIN FRITILLARY, *ISSORIA LATHONIA*

by P. W. Cribb (2270)

While in France at the end of July 1990 I collected a female Queen of Spain fritillary in the act of laying her eggs. She was placed in a pill-box and kept in the camper refrigerator until my arrival home on 1st August. She was then placed in a small cage with a plant of *Viola tricolor*, heartsease, and immediately started to lay her eggs on both the leaves of the plant and the muslin of the cage. The eggs hatched in the same week and by the 19th August the first larva had pupated. By the 24th all twelve larvae had completed this stage and on the 28th the first imago appeared, exactly four weeks from the date the egg was laid.

The weather was extremely hot and dry so that conditions would have echoed those usually enjoyed by the butterfly. With such a rapid cycle it is little wonder that on occasions one can see hundreds of the butterfly on the wing. I experienced this many years ago in Corsica, when there with the late Leo Coleridge. On a dry bank covered with plants of *Viola* there were hundreds of the butterfly dashing about and settling to sun themselves on the bare patches. With such fecundity it is surprising that we do not hear of many migrants to Britain. It is a very strong flier, in many ways like the Painted lady in its flight and habit of sunning itself, returning again and again to the same spot.

THE LONG-TAILED BLUE ON RANMORE COMMON

by J.A.D. Smith (5438)

The long-tailed blue (*Lampides boeticus*) is a rare migrant to this country. According to Frohawk, it was first recorded at Brighton in 1859, and, over the next forty-five years was caught on twelve occasions. South refers to the catching of three in 1893 as exceptional.

On Saturday 25th August 1990 I was on the south facing slope of Ranmore Common which is chalk downland and a good site for the Adonis blue. I was examining the undersides of male Common blues, as, on the previous Thursday, I had seen one with very reduced spotting on the underwing and failed to photograph it. For this reason I saw the Long-tailed blue sitting on the flower of a garden escape sweet pea. One is used to seeing this butterfly in Southern Europe, so I recognised it albeit with some astonishment. Fortunately I was able to photograph it adequately. It returned to the same flower three times and then flew away. Three members of the BBCS then appeared and prepared to spend the afternoon awaiting its return.

This butterfly may not be such a rare visitor as we suppose as it would be quite easy to miss in a field of Common blues.

THE LONG-TAILED BLUE, *LAMPIDES BOETICUS*, BREEDING IN NORTH LONDON

by Brian Wurzell (3718)

During the last week of August 1990, Antony Powell, the warden of Gillespie Park local nature reserve (London Borough of Islington), spotted an unfamiliar little purplish-grey butterfly flitting rapidly over an extensive colony of Lucerne. As soon as it came to rest upon a patch of bare gravel, wings half spread, its astonishing identity was revealed.

Several sunny days, excited phone calls and clicking cameras later, news of the discovery reached my own ears, and I was privileged, for the first time ever, to observe this rare migrant flying in a British locality.

Not only was it flying there, *it was breeding*.

For about four weeks, butterflies were observed on most warm days at Gillespie Park. Occasionally an individual was seen amidst bushes in the lower part of the park, but the majority, up to 10 - 12 adults on the wing at one time, tended to quarter the dry railway land above. Their lively interest in Lucerne flowers was presumed to be for nectar, but I detected several eggshells of unmistakable Lycaenidae structure on the tube-shaped sepals surrounding the bases of bladder senna flowers (*Colutea arborescens*); these were actually secondary autumn flowers, the main



An Islington Long-tailed blue, upper and underside.
(Photograph by Antony Powell)

flush having long before gone to fruit, and they were restricted to a few of the younger bushes of a large colony naturalised along the trackside. Two slug-like larvae were also found nestling deep within the keels of flowers whose perforated sides had prompted closer investigation. It was decided to rear these in the park office to confirm their identity; however, no native butterfly uses this alien shrub, and it is a preferred foodplant for Long-tailed blues in Southern Europe, so there can be little doubt what they are.

To conclude, it is tempting to speculate that this continuously-brooded tropical species might permanently colonise the City in response to the progressively warmer "greenhouse" seasons everyone is talking about. And it is certainly true that London's weed flora is becoming more tropicalised, decade by decade, in terms of increasing numbers of thermophilic foreigners found far and wide. But, alas, it must be the remotest of possibilities

ATTRACTION OF WHITE BUTTERFLIES TO AN *EUONYMUS* SHRUB

by Trev Nettleship (9186)

In early spring of 1990, I transferred from my front garden to the rear the shrub *Euonymus japonicus*. It is a shrub of bi-coloured leaves, which are green centred with creamy-white edging, and this particular plant is 3ft wide by 18 inches high.

Throughout the summer months I have observed the Large white (*Pieris brassicae*) and the Small white (*P. rapae*) butterflies milling around the shrub day after day. They fly in and out of the branches before eventually settling on the leaves. Then off they go again in a flurry; contesting and courting. They are attracted to the shrub, like a magnet attracts metal.

While examining the shrub on various occasions I have startled (at the time of writing) no less than twenty pairing couples of Large and Small whites.

At the time of examination, the shrub had no honeydew, moisture, or any nourishment whatsoever on its leaves. The shrub also has not flowered at all this season. I suspect it is the camouflage they seek when mating — the shrub is generally creamy-white at a distance. The fact that no other species of butterfly seems to give the shrub a second glance also leads me to believe it may be something to do with camouflage.

However, further study is needed, and I hope to give this my attention next year.

I hope that this information will be of help to someone and that this situation may be explained by someone more capable than I.

THE PURPLE HAIRSTREAK (*QUERCUSIA QUERCUS* L.) IN COUNTY KERRY

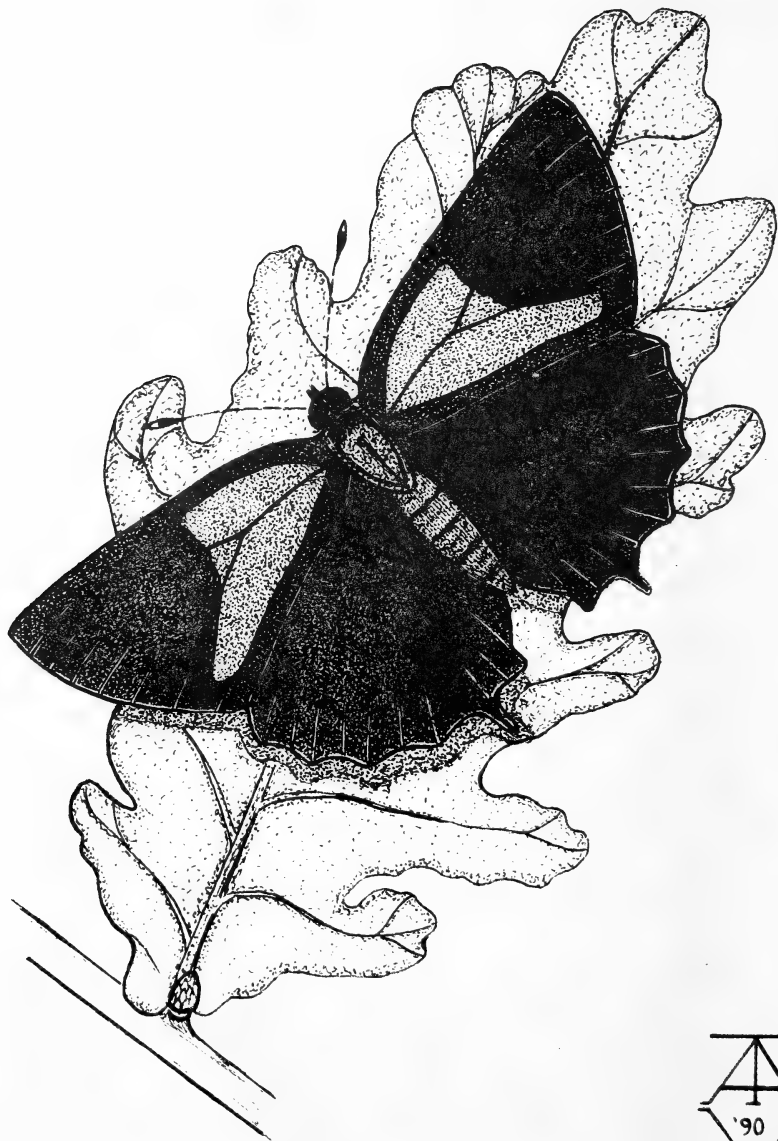
by John Lavery (7469) and Michael J. O'Sullivan (7592)

Insofar as we have been able to ascertain, Irish records of the Purple Hairstreak (*Quercusia quercus*) are relatively scarce. From Northern Ireland, Ian Rippey and his companions have recorded the species from an Oakwood in the Lower Lough Erne area of County Fermanagh in 1983 and, again, in subsequent years. In 1986, these records were published in *The Irish Naturalists Journal*. As regards the Republic, we have, over a period of time, received verbal notification of sightings from wide-ranging localities, though on an infrequent basis. Included with this information were records from several County Kerry sites and, given that this is our home County, these were deemed to be of particular interest. Apparently, larvae were beaten from oak at Uragh Wood, Kenmare in the late 1970s by R.F. Haynes and N.E. Hickin and imagines were reported from Derrycunihy Wood, Killarney and also, much more recently, from Licken Wood, Glencar. All reports originated from reliable sources.

Nonetheless, the only Irish specimens we have seen in a private collection are those of Raymond F. Haynes, Killarney. Mr Haynes has already been mentioned in respect of Uragh Wood but he also took the species from Derrycunihy Wood in 1958 and at Ross Island, on the shores of the famous Lakes of Killarney, a decade previously. In the face of such scant information, we decided to make a determined effort to relocate the species in the areas already mentioned or, alternatively, and equally importantly, perhaps discover further colonies.

In 1983, and thereafter up to and including 1988, we investigated a good number of likely habitats throughout the Killarney districts but were totally unsuccessful. These areas, amongst them Derrycunihy, seemed to present ideal conditions for *quercus* and, indeed, during the course of beating the oaks, yielded up some new County records for moth species! As the method employed was beating, no particular area was visited on a second occasion in order to avoid unnecessary damage.

During 1989, we decided to concentrate on Uragh Wood at Kenmare, firstly attempting to obtain the larvae and, then, later in the season, the imagines. On 7th May, at 7.00 am, we set out for our destination, a round trip of approximately 140 miles. Covering some 180 acres, Uragh Wood is splendidly isolated for, after branching from the main road, it requires a three mile drive over unsurfaced mountain roads followed by a mile long trek over open bogland to reach the outskirts of the wood itself. From a distance, the woodland canopy extends from the shores of the crystal clear Lough Inchaquin up the slopes of the imposing



Purple hairstreak on oak.

Illustration courtesy of Tim A. Lavery (8677).

mountain backdrop. The wood is comprised predominantly of oak (*Quercus*) and a good concentration also of rowan (*Sorbus aucuparia*).

Immediately on our arrival, on the outskirts along a small stand of birch (*Betula alba*), we were able to add a further locality for the Green hairstreak (*Callophrys rubi*) to our records. Surprisingly, the only other species noted was the Orange-tip (*Anthocharis cardamines hibernica*) and the Green-veined white (*Pieris napi britannica*). Concentrating on low-growing outskirt oaks, we quickly succeeded in beating out a minute larva of *quercus*. At the end of our session, we had a total of four tiny larvae which had to be searched for diligently in the beating tray amongst the assortment of moth larvae, spiders, beetles and leaf debris. Two weeks later, John availed himself of a mid-week opportunity to make a further visit, obtaining two further, though final instar, larvae.

Encouraged by these hard-earned results, we decided to attempt to capture the adult on the wing. Our first foray, on 25th June, was a dismal failure as our arrival coincided with heavy rainfall which showed no inclination towards abating. We ventured in through the saturated vegetation and were startled when John dislodged a specimen of *quercus* by tapping an oak sapling with a stick as we walked by. This, however, flew up into the canopy and out of sight quite rapidly.

On 2nd July, John again visited the area, under ideal conditions, and having located a clearing well into the wood, was delighted to observe a good numbers of adults flying and basking on the uppermost portions of the highest oaks. Observations were made with the aid of binoculars. He was able to report that no specimen apparently seemed to come within approximately 20 feet of ground level, thereby making capture virtually impossible.

When meeting to organise a further joint outing, Michael suggested we tape a kite net onto the end of his 12 foot beachcasting fishing rod. This is quite a sturdy implement capable of casting a 6 oz lead weight distances in excess of 100 yards. It also has the added advantage of being lightweight and detaching into two sections for ease of transport. Suitably equipped, we again ventured forth on Sunday, 16th July 1989, on an extremely hot and cloudless day. We were to learn, subsequently, that the highest temperatures in Europe that date were recorded from County Kerry! It was decided not to travel to Kenmare until the afternoon, so we spent a few hours collecting at Ross Island. We recorded good numbers of Silver-washed fritillary (*Argynnis paphia*), many feeding at bramble (*Rubus* ssp.) and hemp agrimony (*Eupatorium cannabinum*), Large white (*Pieris rapae*), Green-veined white (*Pieris napi britannica*) and Small white (*Pieris rapae*) being particularly common. Meadow brown (*Maniola jurtina iernes*), Ringlet (*Aphantopus hyperantus*) and Speckled wood (*Pararge aegeria*) were also noted in some abundance. To our complete surprise, two specimens of *quercus* were positively identified flying about some lakeside oaks. The species

has not been recorded from this locality for almost forty years. A move further afield brought us to Uragh Wood at 5.30 pm. Here again, Meadow browns and Ringlets abounded on the outskirts.

Following a track through thick undergrowth, most notably bracken (*Pteridium aquilinum*) and bramble, and over the uneven, steep rocky mountain incline, we eventually reached the clearing. Several specimens of *quercus* were immediately disturbed from low-growing vegetation and good numbers were seen high up on the oaks. Many hundreds were noted over the course of the afternoon. The clearing was heavily overgrown with bramble, bracken and gorse (*Ulex* ssp.). Huge boulders were strewn about and the steep gradient also added to the difficulty of movement. During the initial phase, we employed our fishing rod-cum-kite net to some effect, obtaining three high flying specimens — two females and a male.

Interestingly, as the evening progressed, and most particularly between 7.00 pm and 8.00 pm, multitudes of specimens congregated on the lower portions of certain oaks, basking with open wings or spiralling in spectacular fashion in one of the most magnificent sights we have ever witnessed. We managed to take a series of specimens, predominantly males, for the cabinet. An extremely darkly marked specimen of Grayling (*Hipparchia semele hibernica*) which was flying rapidly at height through the tree canopy, was taken by Michael. Hardly typical habitat for this species one would imagine!

As the evening progressed, we found ourselves being tormented by swarms of flies, midges and most uncomfortably, clegs, which bit painfully. Eventually, at about 8.30 pm, we were forced to abandon the wood altogether. As we departed, Tim Lavery did a calculation on an approximate specimen to tree ratio coming to the conclusion that the colony numbered several thousands on a conservative estimate.

It was most encouraging to find such a thriving colony, isolated and free from the danger of eradication by felling and we intend to monitor the idea in the future. Happily, then, this specimen is obviously thriving here, and, perhaps, other localities will be discovered as a result of further research.

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THE ROYAL ENTOMOLOGICAL SOCIETY'S YOUNG ENTOMOLOGISTS SCHEME

This major project aims to raise the profile of entomology — starting at school level — boosting public awareness, and encouraging new interest in this fascinating and important area of study. The whole scheme is directed by the Royal Entomological Society's new Youth Development Officer, Dr Clive Betts, who will be based in the Department of Biological Sciences, Hatherly Laboratories, at the University of Exeter.

One of the main objectives is to establish a Regional Centre for Entomology, as part of the Young Entomologists Scheme, at Exeter University. The Centre's prime function would be to provide schools with teaching resources such as work-packs, audio-visual aids, computerware, lecturers and field excursions. It would also hope to offer assisted access to entomological literature, expert help and advice, and other information which at present is very scattered and largely unco-ordinated.

Entomologists are at the cutting edge of scientific research in fields as diverse as genetics, biochemistry, population biology, systematics, and biological control. Many of these first-class entomologists started out as keen hobbyists. To ensure the future of entomology as a relevant, vital science, we must encourage and support young people in their interest. The scheme will complement the work of other organisations like the Amateur Entomologist's Society, National Recording Schemes and WATCH, and there should be many opportunities of working with members of these organisations both in and out of schools.

The YES will cover the area bounded by Bristol, Exeter and Southampton, although it is hoped to extend out to the rest of Devon and Cornwall at an early date. By working closely on a local basis with schools and colleges volunteer Fellows of the Royal Entomological Society can help teachers use insects in their teaching, not just in biology, or even science, but across the curriculum. A great many additional benefits are envisaged from the liaison that will be initiated, or enhanced, between schools, colleges, scientific establishments, individual entomologists, polytechnics and universities.

If you are interested in participating in the Scheme, or have any ideas, comments or suggestions, please contact me, Clive Betts, University of Exeter, Hatherly Laboratories, Prince of Wales Road, Exeter EX4 4PS. Telephone: 0392 263782.

FROHAWK BOOK OFFER

F. W. Frohawk, His Life and Work by June Chatfield, was reviewed in *Bulletin* 47: 55-57. Thanks to negotiations by member K.C. Lewis (8095) with the authoress, it is now on special offer to AES members. Originally published in 1987 it is now out of print and some dealers are now

charging up to £20 for it. The authoress has had the opportunity to buy the publisher's remaining stock of this book which is now for sale at a much reduced price. This attractive 184 page hardback book with many illustrations throughout in both colour and black and white is available from the authoress at £8.00 inclusive of postage and packing. Copies can be signed if you wish. Orders to: Dr June Chatfield, Anglefield, 44 Ashdell Road, Alton, Hampshire GU34 2TA.

BOOK REVIEW

I Remember by Valezina. pp.44, ISBN 0 947718 10 9 Feather Books, Shrewsbury. 1990. Price (to AES members) £2.50 post inclusive. Payment to be made out to Valezina Bolingbroke, but the copies signed by the authoress, are available from Dr June Chatfield, Anglefield, 44 Ashdell Road, Alton, Hampshire GU34 2TA.

This 44 page booklet is a collection of memories charmingly written by Valezina, Viscountess Bolingbroke, the youngest daughter of the naturalist and illustrator F.W. Frohawk, who is best known for his work on butterflies. This book concentrates on the places and people remembered by Valezina: these include recollections of Surrey, Norfolk, Suffolk, Essex, London, northern Kent, West Sussex, Hampshire and the New Forest, Dorset, Gloucestershire and Galloway in Scotland.

Valezina was brought up in a house steeped in natural history, for her father worked at home illustrating, writing and editing for *The Field*. The whole family were keen on the countryside, enjoying many long walks in pursuit of natural history. This book gives an intimate view of her naturalist father F.W. Frohawk, and as such will be of interest to naturalists and especially lepidopterists.

It was another common family interest — music — that formed the centre of Valezina's own life as a solo 'cellist, performing at concerts and teaching her pupils. She herself received lessons from the world famous 'cellist Madame Suggia, a remarkable person whom Valezina recalls in her memoir.

K.C. Lewis

CHASING BUTTERFLIES IN ACAPULCO

by A. Kolaj (9141)

I am writing about a recent holiday I had with my family in Acapulco, Mexico, during late November and early December 1989.

While there I decided to do a spot of collecting in and around the town.

Acapulco is very built up, but there were still a few butterflies about and I caught an *Anartia* species, a few Pierids, including a *Phoebis* species, probably *agarithe*, some very small Lycaenidae, the moth *Diphthera hieroglyphica*, and a couple of *Opsiphanes* species similar to *O. quiteria*, family Brassolidae, which were on the wing at dusk, flying

around the hotel entrance raiding the litter bins. I netted one coming out of a bin, but found it to be damaged. I found another resting on a wall inside the hotel in the morning, again damaged, but caught a perfect specimen on a tree trunk as well as also finding a pupa hanging from the poolside bar. On the last day of the holiday I watched a damaged female laying ova on some large potted palms, the butterfly alighting on my wrist and almost laying on my watch.

Just off Acapulco I found a more or less untouched large hilly island called Roqueta, totally covered in woodland. Here the insect life was fantastic, many species of ant including never-ending lines of leaf cutter ants, dragonflies, damselflies, large beetles, large interesting plant bugs and many superbly-coloured grasshoppers. I also netted and released a tarantula wasp of the family Pompilidae, but I was after butterflies.

Soaring high in the trees were many *Prepona* species, occasionally coming low to feed on sap oozing from a damaged tree. Also feeding off the sap were some *Caligo* species. I managed to net two *Prepona demophon* (I think), a couple of *Caligo* species, and a *C. februa*. There were also many Heliconids, namely *H. charithonia* and *erato* ssp. *petiverana*. Some large black and yellow swallowtails which evaded me every time, a *Danaus* species which also evaded me, but I did manage to net an *Anaea* species similar to *A. marthesia* but with two red bands on the forewing, and a male of *Dynamine mylitta* as well as *Mierota elva*, *Phyciodes drusilla*, two *Parides montezuma*, plus several other small species and a perfect specimen of *Colobura dirce*, but the find of the day which I spotted some 20 feet down the path and which settled in some bushes was an *Evenos regalis* (= *Theritis coronata*). I hurried towards it and went weak at the knees to see this beautiful butterfly resting on a branch. I attempted to net it but caught an adjacent branch and the butterfly flew off never to return.

By now it was time to catch the last boat back to the mainland; only a five minute trip.

Three days later I returned to the island with my wife who was also armed with a net, to search for the *regalis*. After about 45 minutes on the island, walking on a small path, my wife behind me, I noticed two butterflies in a bush. A closer inspection found them to be two *regalis*!

I instantly made a strike at one and netted it only to find it badly damaged. I struck at the other, netted it, but it escaped before I had a chance to secure it, and it flew off. During the excitement I spotted a larva on the bush and found it to be a typical Lycaenid larva, wood-louse shaped with a slight waist, the front half dark brown speckled with cream, the back half speckled with brown, and the waist cream-banded. I found four others, one smaller and green. I boxed them and took them back to the hotel.

Three of the larvae pupated on leaves on the last two days of the holiday. The pupae resembled small monkeys' heads of shades of brown. Unfortunately the smaller green larva was eaten by one of the others (lack of tubs with me). The other larva failed to pupate, probably due to cold and condensation on the way home.

On December 27th and 28th, three perfect *regalis*, one female and two males, emerged.

WASPS, LADYBIRDS AND A RARE TACHINID

by E.H. Moss (3013)

At the time of writing, August 1990, there seems to be exceptionally large numbers of wasps about.

I was standing in my greenhouse when I heard a rasping sound, and on further investigation discovered it was coming from the outside where a number of wasps were gnawing away at the wooden frame.

When I looked around I found that every inch of the greenhouse frame from top to bottom had been attacked by the wasps. I have seen wasps rasping on a fence post before, but never experienced such a concentrated attack. Needless to say I have given the frame a coat of wood preservative and this seems to have deterred them, at least for the time being.

Although we have plenty of wasps, ladybirds are very scarce in my garden at present and there is also an absence of aphids. In spring and early summer ladybirds were everywhere. I assume they have exhausted their food supply and departed for pastures new.

On 14th July I was having a picnic just at the edge of Thetford Forest when my attention was drawn to a Spanish chestnut tree, *Castanea sativa*, where the catkins were attracting a number of various insects. There were groups of Eyed ladybirds, *Anatis ocellata*, feeding on the pollen. An observation which seems to point to the fact that aphids are in short supply.

Then a very large black fly appeared. I happened to have a tube in my pocket, but at the first attempt to capture the beast, I missed and it flew off and settled on a higher branch, out of reach. However, as luck would have it, it did return to the lower branch and became so engrossed in its meal I was able to carefully place the tube over the insect and capture it. I was surprised to see it was *Tachina grossa*. It is my first encounter with this huge fly which Colyer & Hammond in their 1951 book, *Flies of the British Isles*, state is to be found in the West Country.

I have sent this record to the Diptera Recording Scheme. I would be interested to know if this species has been recorded before in Norfolk. Or whether this is another result of the exceptionally hot summers.

BUTTERFLIES IN EINDHOVEN, THE NETHERLANDS

by Alan Butler (7903)

I moved to Holland in February 1987 and now live with my family near to the city of Eindhoven in the southern province of North Brabant. Now that I have found my way around, I thought it might be of interest to report on some of the butterfly species that I have observed locally, within a 20 km radius of the city. The observations are based mainly on the last season (1989), this having been without doubt the most productive since I've been here. Species not mentioned have not been observed.

Before giving details on all the species it is probably worthwhile to say something about the surrounding countryside. Apart from being rather flat, the area comprises mostly intensively and efficiently farmed land interspersed with areas of isolated heath and woodland. The soil is generally very sandy and dry, although some areas are and do remain wet the whole summer through. The woodland is generally made up of dense coniferous plantations which are not at all good in terms of supporting wildlife. However, some of the heathland also contains areas of less dense coniferous (Scots pine for example) wood mixed with birch and small oak. This latter habitat appears to be much more productive than the rest. Although there is some wasteland present, I have not discovered much in the way of unkept grassland or scrub.

Conspicuous by its absence is the Orange-tip (*A. cardamines*). So far I have seen just a single male. This is rather surprising since the foodplant grows in abundance along the sides of the river close to where I live, in an area of local parkland. I am told that this species does however occur commonly to the north of the city. Other species such as the Green-veined (*P. napi*), Small (*P. rapae*) and Large (*P. brassicae*) white all occur in what I would refer to as "normal" abundance. The Brimstone (*G. rhamni*) appears to be very common indeed, and is seen in practically all the different habitats here. In each of the three years since I have been here I have been delighted to see the Swallowtail butterfly (*P. machaon*), although only in small numbers. I understand from local entomologists that the species is widely distributed here although rather scarce. It is not clear to me to what extent the swallowtail population is boosted by migrants from a little further south. All sightings have so far been in the late summer.

Red admirals (*V. atalanta*), Painted ladies (*C. cardui*), Small tortoiseshells (*A. urticae*), Peacocks (*I. io*) and Commas (*P. c-album*) have all been seen in relatively good numbers. It has been very interesting to see both spring and summer broods of the Map butterfly (*A. levana*) each



Fig. 1. Variation in the female Silver-studded blue (*Plebejus argus*). Top: typical, middle an intermediate form, bottom an extreme female showing almost total absence of the orange lunules (= ab. *fuscus*).

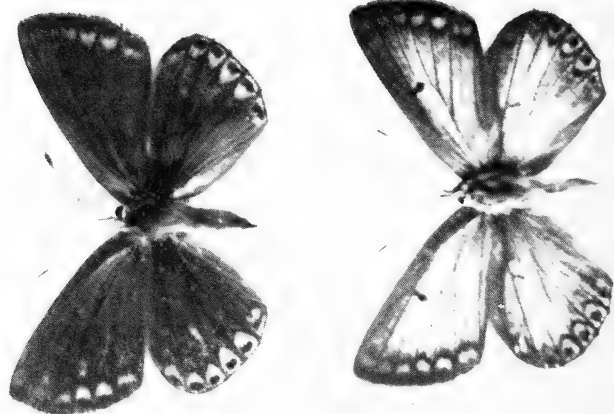


Fig. 2. Variation in the male Common blue (*Polyommatus icarus*) upperside. Top: "extreme" brown form with total absence of blue (= ab. *fuscæ*). Bottom: "extreme" blue form with almost total absence of brown (= ab. *caerulea*).



Fig. 4. Variation in the Small copper butterfly (*Lycaena phlaeas*). Top: form with extensive blue spotting on the hindwings (= *ab caeruleopunctata*. Bottom: "large" form with partial bleaching of the upperside spots and border.

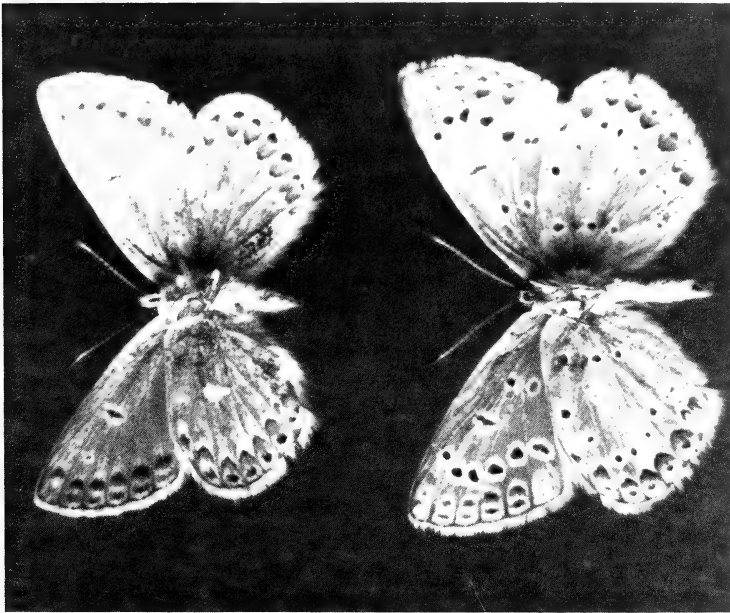


Fig. 3. Variation in the male Common blue (*Polyommatus icarus*) underside. Top: almost entire absence of spotting (= *ab obsoleta*). Bottom: typical form.

year. This species is completely new for me, and I have spent some time watching the females ovipositing with the very curious long ova strings. One wood on the edge of the motorway appears to be ideal for some of the fritillary species. Despite constant searching however, these have not been observed until the past season when I sighted a female Silver-washed (*A. paphia*) at close hand on buddleia in someone's front garden. I assumed that previously I had overlooked this species, until I happened to mention it to a friend who assured me that this particular species has only rarely been observed in this district.

Of the "blues", the Common (*P. icarus*), Holly (*C. argiolus*), and Silver-studded (*P. argus*) are all to be found in good numbers. The Common blues are impressive by their size and in the males by the brilliance of the blue colouring of the upper wings. I was pleased to find one male with almost entire absence of spotting on the underside (ab. *obsoleta*). The females also show a large degree of variation both in size and the degree of brown and blue on the upperside of the wings. Holly blues have been well represented in both broods and are common in both town and country regions. I was rather confused when I first observed a female ovipositing on heather on the same site as the Silver-studded blues. I believe that in the UK the larval foodplant is restricted to holly and ivy. The females of the Silver-studded blue also show a high degree of variation, particularly in the size of the orange lunules on the upperside of the wings. Sometimes these are greatly reduced in size and in a few cases entirely absent. I have not observed this degree of variation in specimens from the UK. The Small copper (*C. phlaeas*) has been very abundant, particularly this past year, a large proportion of the population occurring with the very attractive blue spotting on the hindwings. Of the "hairstreaks", only three species have been observed, these being the Purple (*Q. quercus*), Green (*C. rubi*) and Ilex (*N. ilicis*). The first two are quite common in certain areas and this year I was fortunate to find an unusual aberrant of the Green hairstreak with the upperwings coloured slate grey bordered with dark brown. The Ilex hairstreak appears to be rather local and is found in areas of heathland mixed with oak scrub. Although I've spent some time in search of this species I have only observed it at two sites locally.

With respect to the "browns", some are to me at least surprisingly scarce, whilst others unexpectedly common. Both Meadow brown (*M. jurtina*) and Gatekeeper (*P. tithonus*) have been observed, but the former appears to be nowhere near as abundant as I would have expected (although it is by no means scarce), and the latter appears to be rather localised. Speckled woods (*P. aegeria*) and Wall browns (*L. megera*), on the other hand, appear to be very widely distributed with the former occurring in areas which could only just be described as "lightly"



Fig. 6. Variation in the Small heath (*Coenonympha pamphilus*)
 Top: symmetrical bleaching on the upper side (= *ab parimitransformis*). Middle: typical form. Bottom: a dark example.



Fig. 5. The Grayling (*Hipparchia semele*). The females are particularly brightly marked and the pale areas on the forewings often show discontinuity between the two eyespots, as in this example.

wooded in urban areas of the city. Small heaths (*C. pamphilus*) are, as expected, rather common and again show considerable variation in both colouring and size. Last year I found a beautifully marked example with contrasting bleaching of all wings (presumably ab. *partimtransformis*). Another species to mention is the Grayling (*H. semele*) which are found here in good numbers on the heathland areas. The females in particular are very brightly marked.

Finally to the "skippers". Not surprising is the "normal" abundance of Small (*T. sylvestris*), Essex (*T. lineola*) and Large (*O. venatus*) skippers. However, I was very surprised to come across the Silver-spotted skipper (*H. comma*) at two sites on heathland, where it was flying in company with the Grayling! Although it was not abundant, it did not appear to be very scarce. I only discovered its existence last year, and so have not been able to determine whether this species is widely distributed in this area or not.

That about completes the story so far. It has proved to be an interesting experience exploring new ground here, with both big surprises and of course a number of disappointments. In total thirty species have been recorded within a fairly restricted area. As for next year, I will have my spare time cut out! I recently bought a book showing the distribution of Dutch butterflies up to 1980 and from 1980 to 1986 (*Atlas van de Nederlandse dagvlinders*, M.H. Tax). From this I can see that the Chequered skipper (*C. palaemon*), Large chequered skipper (*H. morpheus*), Alcon blue (*M. alcon*) and Large heath (*C. tullia*) all occur locally. In addition, the Camberwell beauty (*N. antiopa*), Large tortoise-shell (*N. polychlorus*), Queen of Spain fritillary (*I. lathonia*) and Black-veined white (*A. crategi*) have also been recorded at sites close by at least during the recent past. I look forward enthusiastically therefore to the coming season. However, a close look at this Atlas also shows the same sad story that we are familiar with in the UK; a drastic decline in both the population density and numbers of species over a very short span of time.

AN UNCOMMON SYRPHID, *DIDEA FASCIATA*, IN GWYNEDD

by M.O. Hughes (3612)

According to Stubbs & Falk in their *British Hoverflies*, the syrphid *Didea fasciata* is recorded mainly from Southern England.

I am pleased to say that I took two females of this species in Gwydyr Forest, Gwynedd, Wales on 21st August 1984. Gwydyr Forest is a large mixed coniferous/deciduous estate worked by the Forestry Commission. I have never encountered this species before or since.

COLLECTING AND PRESERVING PHASMIDS

by Phil Bragg (8737)

INTRODUCTION

There are many books and articles which tell entomologists about methods of collecting and preserving insects. Many of these offer advice on special techniques which are needed for particular orders of insects. A number of books offer advice on Orthoptera, however, I have yet to find one which offers useful advice specific to collecting and preserving Phasmids.

Phasmids are a special case which require special methods. They are exceptional in several ways, all of which create problems with preservation. They are the largest insects, *Pharnacia serratipes* (Gray) is the world's longest insect and *Heteropteryx dilatata* (Parkinson) is a contender for the title of heaviest insect (Wood 1976); many have very soft bodies and bright colours which makes preservation difficult. In addition to all these problems, the order is largely nocturnal and relies on near perfect mimicry as its main form of defence.

COLLECTING

This one area where Phasmids have been briefly dealt with. Harman (in Brock 1985) gives general advice and I (Bragg 1988) have given advice on equipment for collecting in rain forests. While a few of the smaller flying species may be seen during the day, capture at night is the only realistic method of collecting Phasmids. Beating, suggested in the British Museum guide to collecting (Cogan & Smith 1974), is not worthwhile if you are mainly interested in Phasmids; you are unlikely to get very many unless you beat at night, in which case they are easy to see and collect by hand.

Harman advises using a headtorch — my own experience is that it is foolish to go without one. Headtorches have the essential feature of leaving both hands free to move foliage and capture the insects. Without a headtorch it is necessary to work with a partner otherwise a significant number of insects escape while the hunter is trying to capture the insect with only one free hand. A short handled net should be carried and used to capture some of the flying species or to restrain insects while a container is opened. A long net is rarely of use and generally too cumbersome to be worth carrying. The most successful technique for capture is to hold the net under the Phasmid and lower your hand onto the insect from above. Many species drop off their perch into the net when disturbed.

The majority of Phasmids inhabit tropical areas, particularly rain forests. For the sake of comfort, in tropical countries it is best to carry as little equipment as possible, glass jars, heavy boxes etc. should be left behind.

If it is intended to collect live specimens, the captured insects can be placed in a plastic bag with a sample of the plant on which they were found. The top of the bag can then be tucked into a belt worn round the waist. When a number of insects are in the bag, the neck of the bag should be tied with string and attached to the belt. On collecting trips of more than a few hours duration, or if large fragile species are caught, the insects should be placed in plastic boxes at intervals, rather than being left in plastic bags.

KILLING

I generally preserve specimens which are already dead as my main aim is to collect Phasmids alive in order to attempt captive breeding. However, I have found ethyl ethanoate (ethyl acetate) to be an effective killing agent. If the insect is left in too long some colours are damaged, especially fairly bright greens which tend to pale to yellow. Eggs can be killed by placing them in a deep freeze for a few hours.

PRESERVATION OF DEAD SPECIMENS

The bodies of Phasmids are relatively large, usually soft and decompose quickly which makes rapid drying essential. Freeze drying of Phasmids gives good results but is a method which is not usually available to the amateur and certainly not on a foreign collecting trip. One of the major problems is that as Phasmids are mainly tropical insects, most people can only collect them while on holiday where their facilities are limited. My method of preservation of captive bred specimens is to dry the insect in a heated cabinet at about 80°C; this is not usually possible during a trip abroad. The usual method of drying insects in the tropical sun is not very suitable for Phasmids. Colours such as red and green rapidly become brown in the sun and the large specimens still have time to rot. Decomposition is a major problem even with small specimens which die of natural causes, as it may be some time before it is possible to deal with them. I have successfully used the following two methods in the tropics.

(a) Evisceration and stuffing with cotton-wool

This method has been suggested by some authors for large Orthoptera, e.g. large crickets or long-horned grasshoppers (Knudsen 1966) and Durkin (Durkin 1985) has outlined a method for Phasmids. It is a laborious process which gives excellent results with Heteropteryginae, which have thick cuticles. It also works well with the larger individuals of

other sub-families but is much more difficult as the colour is easily rubbed off the inside of the cuticle. Done well, the insect dries very quickly and the colour and body shape is retained. I have successfully used the following method for species of a similar size to *Carausius morosus* (Sinetz), the common laboratory or Indian stick insect.

The procedure which I follow is to use a scalpel to make a transverse cut between the metathorax and the 1st abdominal segment, then I use a fine pair of forceps to remove the viscera. In long Phasmids I make another cut, usually between the 4th and 5th abdominal segments. The insect is stuffed with white cotton wool; although other colours may give a better looking result if the pigmentation is accidentally rubbed off, I feel white is better as it will not be mistaken for the natural colour. The actual stuffing is time consuming as it needs to be done with a number of small pieces, each one being carefully eased into place, trying to avoid rubbing the inside of the cuticle too hard.

This method has the advantage that the eggs can often be recovered and although no use for rearing, they can be preserved with the specimen. The eggs of most species of Phasmid have never been described.

(b) Injecting with 100% ethanol

A fine hypodermic needle and a small (1 - 2ml) syringe can be used to inject the small or thin species. The needle is introduced between the metathorax and the 1st abdominal segment and ethanol injected until it emerges from the mouth and anus. If ethanol does not appear from both ends, a second injection should be given at the appropriate end to ensure the body cavity is thoroughly irrigated. The insects should then be left in a dark, well-ventilated container. Some loss of colour results from the use of ethanol, some green pigmentation tends to become yellow in colour, however the loss of colour is generally less than that which occurs in the sunlight.

Whichever of the above methods is used the insect is placed somewhere dark and well-ventilated to dry.

TRANSPORTING DEAD SPECIMENS

Bringing large fragile insects back from your holiday can be a difficulty. Papering and re-setting at home should be avoided, damage is almost inevitable with such long thin insects. I set them on location, but without putting a pin through the body. When dry I place the insect on a stiff piece of card and cover it in cling-film; several insects can then be packed into a rigid box and safely sent home in your checked baggage. If the insects are pinned and in a storage box they will need to be carried as hand luggage to reduce the risk of damage.

SETTING AND STORAGE

Setting in particular has to be a compromise with Phasmids, a balance between space occupied and appearance or ease of study. You need to decide the main aim of your collection. If it is to be a useful collection you need to be sure the legs and sides of the body are clearly visible. Also it is an advantage to have only one wing displayed — displaying one is sufficient from a taxonomic viewpoint and saves space. If you are making a general collection for display, a few Phasmids well spread out will probably be what you want.

Due to their size, Phasmids require special consideration when pinning. The pin through the body is traditionally put through the prothorax or mesothorax of an insect. The pin is there to support the insect; to do this ideally it should pass through the centre of gravity. However, as Phasmids are not a traditional shape for an insect, the centre of gravity is often nowhere near the mesothorax. There is no reason to blindly adhere to tradition; the pin can go anywhere — there is no “right way” or “wrong way” to pin an insect, only “ways” and “better ways”. The length of pin can be important in the case of bulky insects or when the length has caused it to sag at the ends. I always use continental length (38mm) pins; this of course means your cabinet must have deep drawers.

The long legs of Phasmids are an important feature and worth giving some thought to. The positioning can matter. Most species rest with their middle legs pointing back towards the anus, this therefore seems to me to be the best way to display the insect. However, with a winged specimen setting the wings out generally hides the middle legs if they are set so they point backwards. As the legs are often an important characteristic in identifying Phasmids I usually set the middle legs forwards if the wings are set out. Care must be taken to ensure the legs do not move during drying. I have been known to use over 100 pins to hold the legs and antennae of large specimens in position. Another point to consider is that of space; if the legs are spread wide apart the Phasmid will take up a lot of storage space, perhaps more than ten times as much as when it is set with legs alongside the body!

Displaying the Phasmid in the cabinet or store box can be difficult. I have specimens which are longer than the 43cm drawers of my cabinet; the only thing to do is to put it in diagonally or buy a larger cabinet! With something of this size, even when pinned through the centre of gravity, it is advisable to place pins on either side of the end of the abdomen to prevent the insect swinging when the drawer is moved.

There is a growing tendency to store insects without any preservative or pest repellent. My advice on this is to use something — a large

Phasmid could be riddled with pests and badly weakened long before any tell-tale dust appears under the insect. If this sort of disaster should occur, it can be halted by putting a piece of "Vapona" in the box or drawer. A more environmentally friendly cure is to put the drawer in the deep freeze for a day or so. The latter cure was originally suggested to me many years ago by member Henry Berman (5573) and I have found it very effective on the rare occasions that I have had infestations.

DISPLAYING EGGS

There are two choices. Glue the eggs to card or mount them in clear gelatin capsules of the type used by Pharmacists for medicines which come in powder form. The latter is preferable, the former method has the disadvantages that the eggs can collect dust and dirt and the egg cannot be examined on all sides.

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ABUNDANCE OF HOLLY BLUES IN SOUTHERN ENGLAND AND — IS THERE AN ALTERNATIVE FOODPLANT?

by Arthur Cleverly (7265)

Last year, in the south of England at least, the Holly blue, *Celestrina argiolus*, had a good year, and an even better one in 1990. These butterflies have been about in quite large numbers.

They are very plentiful too in the Undercliff area of the Isle of Wight around Ventnor.

Now in this area of the island, *Senecio*, the evergreen shiny leaved variety so often planted around toilets has been used as hedging and in that mild climate grows ten or twelve feet tall and being unrestrained by clipping, flowers well.

Recently while there on holiday I saw quite a number of Holly blues laying eggs on the flower beds of these shrubs.

I find no records of this shrub as a foodplant for this butterfly and wonder if this is common, or just restricted to that area.

THE COCKAYNE RESEARCH FELLOWSHIP

Studies on variation in British Lepidoptera

The *Cockayne Trust*, founded by E.A. Cockayne in 1951, was set up for the promotion, encouragement and study of entomology by making improvements to and furnishing information about the Rothschild-Cockayne-Kettlewell Collection. The "RCK", devoted solely to the study of British Lepidoptera, is part of the National Collection of Insects and is maintained by The Natural History Museum at South Kensington. Within the spirit of the original Cockayne Trust Deed, the Trustees have now set up *The Cockayne Research Fellowship*, a separate charity linked to and supported by the *Cockayne Trust*, to stimulate new work on British Lepidoptera.

Applications are invited to *The Cockayne Research Fellowship* for awards to support original research on variation in British Lepidoptera. Awards are limited to a maximum of £1,000 per year and, depending on progress, may be renewable annually for a maximum of three years. Applications are welcome from amateur and professional lepidopterists alike.

Projects must concern original research on variation (genetic, phenetic, taxonomic, geographical, or phenological) affecting one or more species of Lepidoptera within the British Isles. Successful applications are likely to involve proposals to work on early stages in addition to adults, and at least some breeding or experimental investigations. Projects should, at least in part, be based on, re-interpret, or otherwise take into account information already stored in the RCK collection, and will be expected to add new material to it. A yearly report will be required by the Trustees, on which any consideration of renewal will also depend. At the end of the project (maximum of three years), a final report will be required and publication of the results will be expected, if appropriate. A further grant could be requested to assist with publication, if required.

Anyone interested should obtain an application form by writing to the Trustees of The Cockayne Research Fellowship, c/o the Keeper of Entomology, The Natural History Museum, Cromwell Road, London SW7 5BD. The Trustees of the Fellowship have sole responsibility for all matters connected with disbursement of *Fellowship* funds, and their decisions on all matters, including choice of candidates, levels of award and renewals, will be final. Applications should be received by 1st March each year.

Donations, or other contributions, to either the *Cockayne Trust* or *The Cockayne Research Fellowship* are also invited; enquiries about contributions should be directed to the Keeper of Entomology, at the same address.

SWARM OF THE BEETLE *OCYPUS OLENS*

by *K.C. Lewis (8095)*

During the first week of October 1988 my mother had the misfortune to be a patient at the Brook Hospital, Greenwich which is about ten miles from London. As I was leaving after a visit at approximately 8.45 in the evening I noticed many beetles running about on the path and road. On closer inspection they were identified as *Ocypus olens* (Mu). As I walked the two hundred yards to the main gate they were seen in very large numbers. On reaching the main road I crossed and sat down on the bus stop seat and here too they were seen all over the path; in fact so many were on the road they were being blown about in the slipstream of the passing cars.

Misfortune again struck twelve months later to the very week (this time my mother-in-law) and once again I saw the same spectacle. The area in which the swarms occurred is built-up except for a strip of ground skirting the main road (part of Woolwich Common).

Only on one other occasion have I seen beetles in such great numbers. This was in Chalk Wood, Bexley, Kent, in May (1990) when I found hundreds of the beetles *Cryptocephalus hypochaeridis* (L.) on the flower heads of Compositae.

PRACTICAL HINT — LARVA COLLECTING

by *Christopher Nissen (7002)*

Wainscot larvae. When collecting larvae of these moths, which feed in the reeds, the affected plants may be recognised as these have the tips of the leaves turning brown, but it will be found that the larvae will have left those plants whose leaves have completely withered. The plants should be cut as low down as possible.

INSECT LIFE IN THE PORTSDOWN REGION

by Frank Marples (8226)

It is reassuring to note that despite this present, and well justified, climate of despondency over nature conservancy issues, I may wander the Purbrook Heath and Portsdown region of South-east Hampshire (as I often have wandered over the last 25 years), and find the insect life therein still consistently abundant.

This area is of interest to the local historian too. The present Purbrook Heath Road follows the course of an old Roman road for a mile or so. It linked Winchester and Chichester originally. Hambledon is the traditional birthplace of English cricket. I believe there are still some relics of the game on display in "The Bat and Ball" public house. The Hilsa fortifications, and the old brick fort (Widley) on Portsdown Hill, were born of the mid-Victorian fear of a French invasion — Palmerston's follies!

Deforestation took place at this time, in order to afford military personnel a clear view north across the vale. Old guns lay rusting, and as silent as ever. Modern Continental ferry companies, Portsea Island and Portsmouth Harbour based, have encouraged a very different form of French invasion! Southwick House was a place of high military security during the Second World War.

The Portsdown area holds many fond memories for me. As a child I delighted to see the woods and hedgerows in full leaf — stitchwort and lesser celandine sparkling in the sunshine. I delighted to hear the buzz of fly and bee — and even now, years later, the essential elements of simple, natural existence can still be sought and enjoyed.

Small heath, Marbled white and Common blue butterflies appear upon the downland scarp — Burnet moths too, coupled amongst the lush grasses. During a recent May afternoon, by a valley stream-side, I saw a pair of Orange-tip butterflies, both intermittently fluttering and basking together in the sunshine — a red dragonfly, possibly a Common sympetrum — Honey bees, and a brown Carder bee; a Cardinal beetle, like a bright flame in tumbling flight; a rather striking little *Geoffrella* moth; Ladybirds and numerous fast running Ground beetles; a Red admiral butterfly in full display; diverse plant bugs; the so-called "cuckoo spit" of Common froghopper larvae; and a Gatekeeper butterfly.

On other occasions recently I have seen Peacock butterflies, and the rarer Painted lady and Clouded yellow butterflies; Cockchafers, Weevils and Stag beetles; a Speckled wood butterfly defending its streamside territory from intruders; green Thick-legged flower beetles; a Glow-

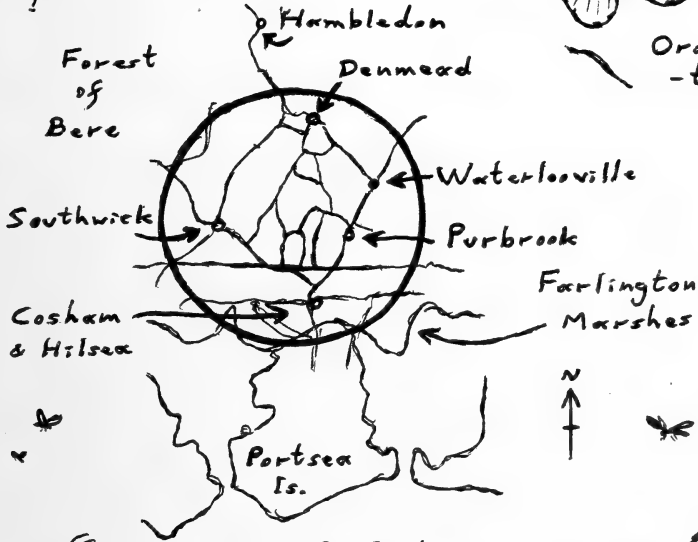
Portsdown Region



Cardinal Beetle



Orange-tip



Geoffroy's Tortrix



Ladybird Beetle



Common Sympetrum

worm-larva at tiny, up-turned snail-shells; busy Hoverflies and Beeflies about the wayside flowers; Soldier beetles coupled upon the floral sprays of wild parsley; and black ants "licking over" their aphid charges!

The Portsdown region is still deceptively rich in insect life, and I hope that it will remain so. Purbrook Heath and Portsdown hold precious memories for me, such that cannot be erased or spoiled in any way by the encroachment of the modern world.

PRACTICAL HINT — REARING

by Christopher Nissen (7002)

When keeping pupae do not spray them in cold weather as this may kill them. To determine sex of pupae, wet the tip of the finger and apply it to the head of the pupa. In many cases the females will have thin antennae, and the males thick antennae.

BOOKS NOTICED

by the Editor

The butterflies of Great Britain & Ireland edited by Maitland Emmet and (the late) John Heath. Paperback edition, pp380, 24 coloured plates. ISBN 0 946589 37 2. Price £24.95. Harley Books, Colchester. 1990.

The original hardback edition of this up-to-date definitive book on our butterflies (reviewed *Bulletin* 49: 63-65) was published two years ago and it has now been issued in paperback at half the original price and just in time for Christmas. So how does it differ from the original? Hardly at all, apart from being in a strong flexible card cover instead of rigid cardboard. Properly stitched and not "perfect bound" and therefore made to last. The plates are the original very fine quality printing and the text as before but incorporating a few minor up-dates in order to take account of some recent information that has come to hand concerning butterflies. In order to appeal to the more general naturalist, the words "moths &" have been dropped from the title, for after all, this volume in the series does stand on its own and deals solely with the butterflies, a very small group of the lepidoptera, which have always attracted far more interest among the general public than the moths ever have and indeed many a dedicated lepidopterist has often confined his interest entirely to this family and the number of books written about them has exceeded those of the far more numerous moths by about ten to one. At this price an ideal Christmas present for those who (or whose parents) felt unable to afford the original hardback.

Grasshoppers & allied insect of Great Britain & Ireland by Judith Marshall and E.C.M. Haes. Paperback edition, pp254, 12 coloured plates. ISBN 0 946589 36 4. Price £15.95. Harley Books, Colchester. 1990.

While butterflies have been so well researched in the past that new information is hard to come by, this did not apply to grasshoppers, with the result that the original publication of this book in hardback (reviewed

Bulletin 48: 20-21) so stimulated interest that a considerable amount of new information and records have become available and these have been incorporated into the text of this new edition and details of these are mentioned in a postscript to the original preface by E.C.M. Haes. An addition to the original printing, on the back cover, of silhouettes of representative species of the various orders covered in the book and a millimetric scale to help with measuring their size. As with other Harley books this paperback is sewn not glued and the cover is exceptionally strong for a paperback. For those interested in this group of insects another ideal Christmas present and we understand the hardback price has been hit by inflation and is to go up to £30 in the new year.

I have been asked where I have come across some of the books I have previously mentioned as being remaindered at low prices, for it does seem that they may not be generally available. It would appear that different bookshops obtain differing stocks and indeed may not always be offering at the same prices. The answer is that I come across remaindered books in widely separated shops. There are, all over the country, bookshops that specialise in dealing in remainders and once you have located one it is often well worth a frequent visit. Those I look over regularly, and where books I have mentioned in the pages of the *Bulletin* have been available, are those in London along Charing Cross Road and in the vicinity of South Kensington underground station. In Cambridge: Booksale, 14-16 Bradwell's Court (Tel. 61529); Galloway & Porter Ltd, 30 Sydney Street CB2 3HS (Tel. 67876); G. David, 3 St Edward's Passage, CB2 3PJ (Tel. 354619).

DISC REVIEW

European butterfly identifier: a computerised identification system and data base. Designed and written by Dr George Thompson, available from ID Software, 1/2 Ravenhill, Lockerbie, Dumfriesshire DG11 1QZ. Price £39.95.

The system consists of two 360K 5.25" discs though other formats are stated to be available. I and other colleagues used the Demo version on an Amstrad PC1640, the disc being restricted to the family Pieridae to demonstrate the workings of the system. The complete system purports to enable the user to identify any of the 392 species of European butterfly as well as displaying data on each species and providing a print-out of a list of species with both scientific and vernacular names. The data includes maps showing the distribution of each species and there is a section which considers the differences between closely similar species, always important for precise identification.

The Pieridae are probably the easiest of the families to identify from field guides but I found it extremely difficult to obtain a correct identification using specimens from my collection, only one of four attempts leading me to the correct species. My Clouded yellow ended up as Berger's clouded yellow and colleagues had similar problems. I am sure that there would be even greater difficulties if one tried the *Mellicta*, *Pyrgus* and some of the Lycaenidae species. I feel that the dichotomous keys are too imprecise. The system does say that it will be necessary to use recommended field guides in conjunction with it in some instances which seems to make the identifying aspect of the system superfluous.

The system is certainly "user friendly"; the species list, the distribution maps and the notes on similar species are useful, though I think that subspecies (or dubious species) such as *Pieris napi bryoniae* and *Euchloe simplonia insularis* should have been included in the list to make it more useful. I would suggest to the compiler that the main identification key be omitted completely and replaced with a method of recording data of captures, sightings and other field and breeding operations. This would make the system well worth buying and would add to our pool of knowledge of our European butterflies. With the print-outs available, one could exchange information with other members and proper records of the results of trips and breeding experiments would be available.

PWC

PRACTICAL HINT — IMPROVED KILLING BOTTLE

by Christopher Nissen (7002)

In making a killing bottle using a wide-mouthed glass jar, place first of all a layer of cotton wool at the bottom of the jar; then take a test-tube, break off the bottom, and when pouring in the plaster of paris, fix the test-tube against one side of the jar. The killing fluid may then be poured into the test-tube; the cotton-wool becomes impregnated with it, and the evaporation is greatly reduced.

FORTY-TWO YEARS AN EDITOR — CONGRATULATIONS!

Hearty congratulations to Dr Frank Carpenter who has been editor of our American contemporary journal *Psyche* for 42 years. We wish him a peaceful and equally long retirement.

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CONTENTS

Abundance of Holly blues in southern England and — is there an alternative foodplant, <i>by Arthur Cleverly</i>	275
An uncommon Syrphid, <i>Didea fasciata</i> , in Gwynedd, <i>by M.O. Hughes</i>	270
Attraction of white butterflies to an Euonymus shrub, <i>by Trev Nettleship</i>	256
Books notices <i>by the Editor</i>	280
Book reviews	238, 262
British Butterfly Conservation Society's butterfly festival at Juniper Hall Field Centre, 7th and 8th July 1990	251
Butterflies in Eindhoven, The Netherlands, <i>by Alan Butler</i>	265
Chasing butterflies in Acapulco, <i>by A. Kolaj</i>	263
Cockayne Research Fellowship	276
Collecting and preserving phasmids, <i>by Phil Bragg</i>	271
Disc review	281
Down the Tuak Road, <i>by Leigh Plester</i>	243
Forty-two years an editor — congratulations	282
Friends of the Natural History Museum: in formation	242
Frohawk book offer, <i>by K.C. Lewis</i>	262
Insect life in the Portsdown region, <i>by Frank Marples</i>	278
Letter to the Editor, <i>by M.A. Hope</i>	235
Long-tailed blue on Ranmore Common, <i>by J.A.D. Smith</i>	254
Long-tailed blue, <i>Lampides boeticus</i> , breeding in north London, <i>by Brian Wurzell</i>	254
Members living in Eire, <i>by Mrs R.A. Cribb</i>	242
Obituary — B.R. Stallwood, <i>by Peter Cribb</i>	236
Painted lady in New Malden, <i>by Frank Middleton</i>	250
Practical hints, <i>by Christopher Nissen</i>	277, 280, 282
Purple emperors and Large blues, <i>by Rob Parker</i>	239
Purple hairstreak (<i>Quercusia quercus</i> L.) in County Kerry, <i>by John Lavery and Michael J. O'Sullivan</i>	257
Rapid life cycle of the Queen of Spain fritillary (<i>Issoria lathonia</i>), <i>by P.W. Cribb</i>	253
Royal Entomological Society's Young Entomologists Scheme	261
Swarm of the beetle <i>Ocypus olens</i> , <i>by K.C. Lewis</i>	277
Wasps, ladybirds and a rare tachinid, <i>by E.H. Moss</i>	264



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