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# Index to

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# The Bulletin

## of the Amateur Entomologists' Society

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The Amateur Entomologists' Society

Founded in 1935

**The AES • P.O. Box 8774 • London • SW7 5ZG**

**http://www.amentsoc.org**

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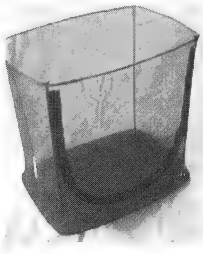
## Johnson Rectangular Cages

**(Patent Office Registered Design)**



Use indoors or outdoors for all insect stages.

Ideal flight cages with rounded corners.

All weather construction, with metal frame and exterior grade ply base.

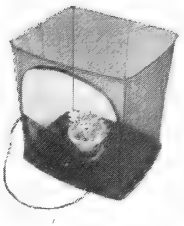
Separate and replaceable covers use fine netting that parasites cannot enter.

Quickly assembled and dismantled without tools for flat storage.

Entire cage can be sterilised.

Access through double slider 'Big Door' zip.

Used by professional insect research laboratories



Standard Rectangular Cage - approx 18" wide, 14" deep, 18" high
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Large Rectangular Cage - approx 23" wide, 20" deep, 23" high
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## Johnson Ranger Mothtrap

**(Patent Office Registered Design)**

A full specification collapsible fabric trap for a wide range of lighting, styled for high ground and wind stability.

The central cone gives a bright attractive focus for efficient capture.

Accepts MV and MBT bulbs up to 160w and a range of actinic tubes.

16inches square x 14 inches deep. Collapsed thickness approx 0.8"

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Very rapid assembly and dismantling without tools.

Self standing and can be hung or ground anchored.

( Electrical components not supplied)

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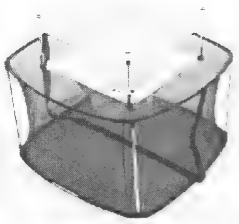


## Johnson Safari Mothtrap

**(Patent Office Registered Design)**

A super lightweight 300g ( 11 oz.) collapsible cone trap.

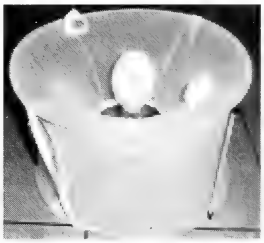
14" diam x 10" deep, it quickly collapses to less than 0.5" thickness, so it can be carried under a jacket.

Self standing and can be hung or ground anchored.

White net gives 'glow' effect for maximum light from actinic tubes; also MV and MBT bulbs up to 160 watts.

( Electrical components not supplied)

£29 + £2.50 P. & P. (UK)



Many other cage types available. Send S.A.E. for list.

See also website http://www.lucina.freeserve.co.uk.

Black or White fine netting, approx 1.4metres (54 inches) wide.
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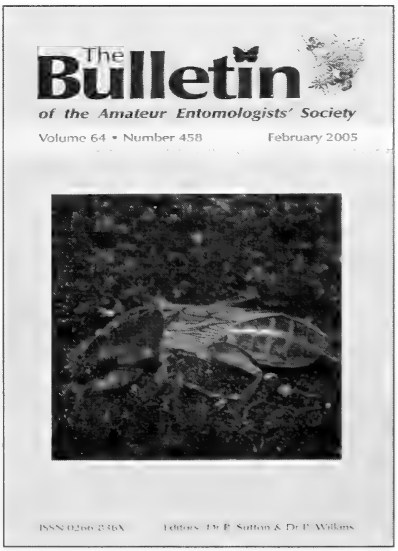
# The AES BUG CLUB

**Do you want to cuddle a Cockroach, stroke a Stick Insect or hug a Harvestman?**

The AES Bug Club is for young people or the "young at heart" who find insects and other creepy crawlies interesting and even fascinating.

As the junior section of the AES we are devoted to promoting invertebrates to the younger generation who, afterall, will be the entomologists of tomorrow! You can help us in a number of ways, for example: by joining the Bug Club yourself, getting someone else to join the Bug Club, promoting the Bug Club and AES to your local school/Scout or Guide Group etc, running a Bug Club event or writing an article for our exciting newsletter. If you can do anything to help then please write to us: **AES Bug Club, PO Box 8774, London, SW7 5ZG**. Membership details can be found in the front of this Bulletin.




Photograph: David Browne

## Bulletin Cover

The cover picture on this issue of the *Bulletin* shows the Mole Cricket *Gryllotalpa gryllotalpa*, a magnificent and extremely rare species that continues to elude British Orthopterists. A viable colony of this huge insect, which can attain a length of up to four and a half centimetres, has not been found on mainland Britain since the 1970s. The specimen shown was found in Gloucestershire in September 2004 and almost certainly arrived in the soil of a large consignment of trees and shrubs from abroad.

This picture was taken using a Canon EOS 300D digital SLR camera.

The Bulletin
of the Amateur Entomologists' Society



Volume 64 • Number 458 February 2005

## Editorial

Welcome to a new year and a pleasantly short editorial! This is followed by the Registrar's customary note about Data Protection.

There is still time to write that article for the *Bulletin* that you have always wanted to write, before the main insect season begins. On the subject of articles, I have had some correspondence from authors surprised that we constantly ask for articles, but submitted material does not appear in the next one or two *Bulletins*. This tends to be because the *Bulletins* are edited and printed in advance of the date on the cover. Hence, when we say we need more articles this would tend to be for about three issues after the one containing the plea.

As a Society, we are trying to respond to the requests of members. Hence there is a diary section (kindly provided by Craig Macadam). We are also organising a field meeting at the end of the summer. We hope that as many members as possible can attend.

Phil Wilkins

### Gift Aid to the Society

Since 6th April 2000 it has been possible for the Society to claim Gift Aid on subscriptions and donations where these are received from members who pay U.K. Income Tax. The effect of this is that the Society will receive monies from the Inland Revenue in the sum of 28% of the amount received from the member concerned. This is clearly a valuable source of income for the society and it is therefore important that all members who pay Income Tax in the United Kingdom sign a Gift Aid declaration, which appears on the renewal notice.

Lastly, can I also take this opportunity to remind members who have previously completed a Gift Aid declaration but now no longer pay Income Tax that they must inform the Society in writing to cancel their Gift Aid Declaration.

Peter May, Hon. Treasurer

## From The Registrar

**Data Protection Act** – In order to fulfil the requirements of this act I must advise members annually of the details held on the computer database and the use made of them.

Currently the information we hold comprises – name, address, telephone number, email address, Date of Birth, interests, payments made, and membership category. Additional information is held regarding mailing details, correspondence, invoices, receipts etc. If any member objects to these details being held, would they please get in touch with me.

The information is used for the following purposes:-

- To prepare mailing labels for the ***Bulletin*** and ***Bug Club Newsletter***. Also labels for other mailings and correspondence as required.
- For the preparation of statistics for use by the Council.
- The publication of Membership Lists. These will only include details of name, address, interests, and, in the case of Junior Members, the Membership Class. Please note that telephone numbers and e-mail addresses are ONLY passed on to Council and Committee members when a specific request is made. Such details are not passed to other members. **Individual members may request specific lists**, such as names and addresses of members in a specific area, with or without interests included. A minimum charge of £1.50 is made to cover the additional costs of stationery and postage involved.

**Please note** that:-

- I am unable to give out member details over the telephone.
- I never divulge phone numbers without the individual member's express permission, except to Council members for use on Society business.
- I do not give member details to non-members without the individual member's express permission.

**Membership List** – it is hoped to produce one as soon as adequate funds are available (production costs over £2,000). It should include an alphabetical list of names, addresses and up to three interest categories (space prevents the inclusion of more). It should also include a list of members' names under specific interests, and members' names in

individual countries and UK counties. (It is for the latter reason that county name is always included in the address, despite it not being essential in most cases.) The restriction to only three named interests is to make the interest lists manageable, since these will help members communicate with others of similar **main** interest areas. I must emphasise that the ONLY reason a list has not been produced in the past has been cost. However, under the most recent version of the Act I must get written permission from each member before details may be included in the list. This applies only to published lists and not private lists requested by a member.

**Change of Address** – the mailing labels are produced a month in advance in order to notify the printer the number of each publication that need be printed and to allow sufficient time for the envelopes to be prepared. (This is a more tedious task than previously because there are at least three different categories of mailing – ***Bulletin*** alone, ***Bulletin*** plus ***Bug Club Magazine*** together (for family membership), and ***Bug Club Magazine*** alone. These are further separated into Overseas and UK.) This can mean that if I am notified of the change of address AFTER the mailing labels are produced, then the mailing will go to the previous address and there is **no way of preventing this**. It also means that if a redirected envelope is used to notify change of address, by the time I receive it via the PO Box, which can take up to four weeks, or even more, the next mailing label will also have been produced for the previous address! It is therefore in members' interests ***to notify me as to the new address, and the date for which it becomes effective, as soon as possible after the details are known to the member.*** Members may notify me directly to my home address, if they wish – Nick Holford, 8 Ruddle Way, LANGHAM Rutland, LE15 7NZ (Tel. 01572 723532). I can also be contacted by email (nick@fivecon.force9.co.uk). In notifying change of address, please be certain to include your membership number, which is printed after the name on the mailing label. This makes finding your record much easier.

**First names** – I am trying to make communications more personal by using first names. This is already done in most cases. Please try to remember to write it onto the renewal slip before sending it in.

**Payment by cheque** – when paying by cheque, if the member's family name is different from that on the cheque, please write the member's name on the back as this helps considerably when checking that

payments have been entered correctly. It would be helpful if the membership number was written on the back as a matter of course. PLEASE do not staple cheques to the form, these require a considerable amount of time to remove, and when dealing with about 1400 cheques in the space of two months, any saving in time is a great boon! Thank you.

**Nick Holford,** Registrar


National Insect Week (NIW) 2004 was a great success, bearing in mind it was the first time the RES ran it. The next NIW was due to be held in June 2005, but this will not be possible after all. Planning will start soon for NIW 2006, to take place during the week Monday 19th to Sunday 25th June 2006. Details of NIW 2004 and advanced details for 2006 can be accessed through the interactive website – www.nationalinsectweek.co.uk.

The AES played a major role in the organisation of, and activities for, NIW 2004, though only some Council members actually took part. Ordinary members who were approached personally about events were unable to help, unfortunately, for a variety of reasons. This was a shame because NIW represents a great recruiting opportunity.

We need to reverse the current trend of falling membership numbers so please try to do your bit.

In NIW 2004 stands were placed in interested Garden Centres, local nature reserves etc, and field events were also organised. If you would be able to help in any way for 2006, please write, phone or email the Registrar. Feel free to approach local bodies such as Natural History Societies, University of the Third Age (U3A), schools etc in your area to arrange venues for local events. We are in the process of producing all necessary display material etc and this will be provided on request. All you as an individual will need to do is communicate with people about insects. There is a lot of talent amongst the membership, so please don't be shy!

Nick Holford, AES Registrar, 8 Ruddle Way, LANGHAM, Rutland, LE15 7NZ, Tel. 01572 723532, email nick@fivecon.force9.co.uk.

**December AES *Bulletin***

We apologise for the lateness of the December edition of the *Bulletin*, this is due to it being an ambitious edition for the benefit of members. It will be despatched as soon as possible.

Nick Holford

# Insects at Center Parcs, Longleat

*by Clive Betts (4976)*

*IT Services, St Luke's Campus, University of Exeter, Exeter EX1 2LU.*

A week long stay at the Center Parcs, Longleat site in August 2002 proved a pleasant surprise, entomologically speaking. The Dutch-originated Center Parcs ethos appears to include a genuine attempt at maintaining a balance between the needs of holiday-makers and those of a natural(-ish) "countryside park" environment.

At Longleat this balance seems to have worked quite well, on the whole. The site contains substantial areas of grassy banks and trackways with mixed (mostly native) vegetation, some managed deciduous woodland, an impressive conifer plantation that includes a group of Giant Redwoods, a number of man-made ponds and a large man-made lake adjoining some unimproved meadowland. During the week I made a number of casual observations and spent some fantastic afternoons in the early August sun insect-watching by the lake. At one point I tagged onto an organised nature walk which was led by a young employee who was, I was pleasantly surprised to see, equipped with a kite-net and clearly knew his wildlife, including insects like the solitary bee *Osmia bicolor* (Hymenoptera: Megachilidae) that nests locally in snail shells.

My favourite sights of the holiday are those of two of the UK's largest dragonflies (Odonata: Ansipotera), The Emperor (*Anax imperator*) and the Brown Hawker (*Aeshna grandis*). I had last seen these two together in Joyden's Wood, north-west Kent and I was captivated by their sheer size and remarkable aerobatic displays. I also saw a much smaller hawker, *Aeshna mixta* possibly, basking in the sun on the reeds that fringed the main lake, and the Southern Hawker, *Aeshna cyanea*, hawking around our villa.

In the meadows I was surrounded by grasshoppers (Orthoptera: Acrididae) and soldier-beetles (Coleoptera: Cantharidae) plus some larger chafer-like (Coleoptera: Scarabaeidae) beetles that kept flying past me. I found a dead specimen of a very handsome scarabaeid *Geotrupes vernalis* (uncertain identification), which may well have been one of the flying beetles I had seen earlier.

Wildflowers bordering the meadow and pathways were visited by a number of bumblebees (Hymenoptera: Apidae) including *Bombus lapidarius*, *B. hortorum*, *B. lucorum*, *B. barbutellus* (a cuckoo bumbleebee) and what looked like *B. jonellus* though I did not catch it to confirm this.

One afternoon I was sitting on a bench by a path and noticed a steady stream of wasps entering and leaving the bushes nearby. I spotted one of these wasps having a break from the commuter traffic and managed to identify it as the Red Wasp, *Vespula rufa* (Hymenoptera: Vespidae), a species that is far from common in my home-area around Exeter. I had ended up sitting next to what must have been a sizeable nest judging from the number of wasps around although I believe this species usually has quite small colonies. I also saw numerous *V. sylvestris* (the Tree Wasp) around. This species builds aerial nests and, like *V. rufa*, the worker castes can have remarkable variations in abdominal colouration ranging from almost totally black to very yellow with very thin black bands.

I am not a lepidopterist but it would have been hard to miss the large numbers of Meadow Browns (*Maniola jurtina*) on the site, or indeed the skippers (Lepidoptera: Hesperidae) that inhabited the meadow area. I was also pleasantly surprised to see several Painted Ladies (*Cynthia cardui*) around the bushes by the sports complex. I am used to seeing these in the hedgerows in Devon but have rarely seen them elsewhere.

Concerted hunting I am sure would have revealed many more interesting insects but I was impressed with those I had found in just in passing. I would certainly recommend Center Parcs at Longleat for its general ambience and (so it would appear) healthy respect for its natural environment.

## Butterfly decoys

*by Keith C. Lewis (3680)*

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During the 2004 AES Exhibition, I acquired volume 258 of the AES *Bulletin* for 1963. On pages 88-89 there is an article by Patrick J. S. Miles (3343J) entitled "A method of enticing the Holly Blue, *Celastrina argiolus*, to the ground". Apparently he was experiencing difficulty in catching this butterfly for his collection as it always flew just out of reach of his net.

Eventually he was able to obtain four male Holly Blues by pinning a number of goose feather decoys to bramble and holly bushes.

I have Holly Blues breeding every year in my garden in Welling, Kent. So I decided to see if male Blues could be enticed to a decoy. This is despite the fact that they very rarely fly in my garden at a height that it would be impossible to catch them if one so desired. Canada goose breast feathers were obtained from my local park and were pinned to ivy buds. I also used three painted cardboard decoy Blues (Figure 1).

**Figure 1.** Holly Blue decoy. Photo: K.C. Lewis

During the next three days the Blues were continuously flying up and down the forty-foot long ivy hedge but showed not the slightest interest in the feathers. However they were attracted in a small way to the decoys, fluttering around but never getting closer than about six inches. I wondered if this was due to the lack of a pheromone?

The only insects that made direct contact with a decoy were the hover flies, *Episyrphus balteatus*. They rested between the paper wings for a maximum of five minutes. One honeybee, *Apis mellifera* was also attracted, but briefly.

The Editor's footnote from 1968 concluded that the Blues were possibly attracted to the feathers in the belief that they were flowers, although he points out that Mr Miles' Holly Blues were all males.

# The Mexican Jumping Bean Moth (*Cydia deshaisiana*)

*by James A. Walker (7975)*

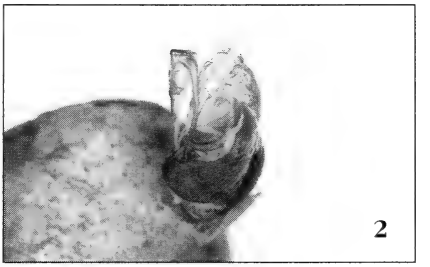
*3 The Parkway, Bassett, Southampton, SO16 3NZ.*

One of the pleasures of living abroad is being exposed to unfamiliar flora and fauna. Encounters with new species occur not just on field trips, but also in unexpected places and at odd times. Last year while out shopping in downtown Boston, Massachusetts, I came across a tray containing hundreds of what appeared to be small seeds that were moving about by performing small, erratic jumps. They were labelled as "Mexican Jumping Beans." After paying $3.00 I left the store, which would probably be best described as a "novelty shop", clutching a bag containing a dozen of these curious objects.

Once home, a quick inspection of my American insect guides revealed that caterpillars of the Jumping Bean moth (*Cydia deshaisiana*) living inside were causing the movements of the "beans". *C. deshaisiana* was previously known as *C. saltitans* and also as *Laspeyresia saltitans* and belongs to the family Tortricidae (subfamily Olethreutinae). The Tortricidae include many agricultural pests, such as the Codling moth (*C. pomonella*), the caterpillars of which infest apples and the Pea moth (*C. nigricana*), a pest of legumes. Each Mexican Jumping Bean is a seed capsule or nut formed from the carpel of a flower from one of two deciduous shrubs – either *Sebastiana pavoniana* or *Sapium biloculare*. These plants are common in deserts across mainland Mexico, the Cape region of Baja California and in Arizona. During the summer months, the ground beneath these shrubs is littered with the seedpods, many of which are infested by *C. deshaisiana* and move amongst the fallen red leaves.

Females of *C. deshaisiana* (Fig. 1) lay their eggs on the immature ovaries of the flowers in the spring and early summer. Upon hatching, a single caterpillar burrows inside and starts to eat the contents of the seed from within. By late summer the seeds fall to the ground. The larva is then able to cause the pod to jump around by throwing itself from wall to wall, while clinging onto a silk lining that it spins on the inner walls of the seed. The "jumping" is in response to temperature, with the movements become more frequent the warmer it is (Heckrotte, 1983). However, the purpose of these movements is unclear. It is possible that it is a mechanism to move the seed to an area with a more hospitable temperature. Alternatively, it has been suggested that the

caterpillar is able to move to a sheltered spot to avoid predation. The movements, however, are more likely to attract the attention of potential predators.



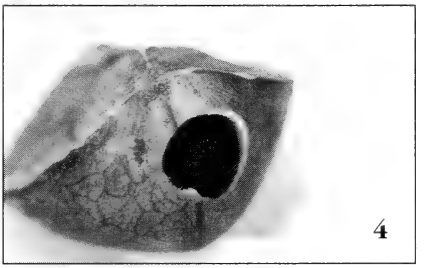



**Figure 1.** Adult Mexican Jumping Bean moth (*Cydia deshaisiana*)

**Figure 2.** A Mexican Jumping Bean showing the pupal case protruding from exit hole.

**Figure 3.** An empty pupal case that has been removed from a Mexican Jumping Bean.

**Figure 4.** Mexican Jumping Bean showing exit hole through which the adult moth emerges. The hole is partially cut by the caterpillar before it pupates.

After a couple of months the movement of the seed capsules I had purchased began to decrease and eventually stopped altogether. Each larva spins a silken cocoon and pupates inside. Between four to five weeks after the seedpods had stopped moving, a small black and white moth emerged from each one through a small trap door (Fig. 2, 3 and 4). This circular exit hole is partially cut by the caterpillar before it pupates and the adult is able to push through to the outside.

Since these "jumping beans" are sold in all kinds of novelty and nature shops around the United States, *C. deshaisiana* has been spread far and wide from its native range in the southern states. However, it has not been reported to cause problems by infecting plants other than its known host plants (pers. comm. Peter Oboyski). As a precaution the sale of the Jumping Bean is outlawed in certain areas of the United States, such as Hawaii, as well as in some countries (e.g. Australia,

Singapore, Bangladesh, India) to prevent potential damage to endemic plant species. Interestingly, *C. deshaisiana* has been recorded in the United Kingdom (Langmaid, 1991). It was assumed that the specimen taken at an m.v. trap at Southsea, Hampshire was from imported beans and had been released into the wild. If anyone knows of any other reliable reports of this species in the UK I would be very interested to hear from them. I have found one web site that claims to sell Mexican Jumping Beans in the UK if anyone is interested in seeing them for themselves.

**Acknowledgement**

I would like to thank Peter Oboyski (University of California, Berkeley, USA) for sharing his extensive knowledge of *Cydia deshaisiana* with me.

**References**

Heckrotte, C. (1983) The Influence of Temperature on the Behavior of the Mexican Jumping Bean. *American Zoologist* 23(4), 893.

Langmaid, J.R. (1991) *Cydia saltitans* (Westwood) (Lepidoptera: Tortricidae) at m.v. light in Hampshire. *Entomologist's Gazette* 42, 254.

Web site: www.jumping-beans.com

# Butterflies of Malta 2004 (Observations 12th to 30th April)

*by P.C. Golder*

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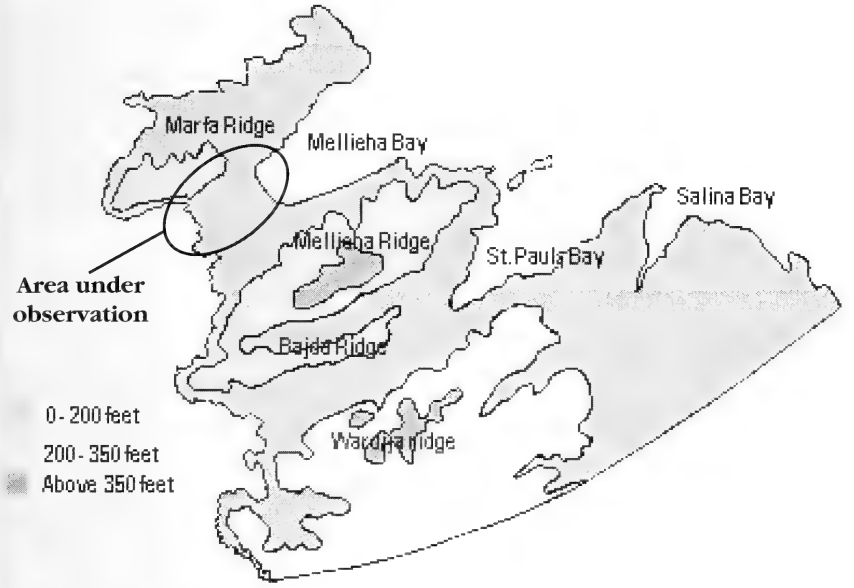
## Background

Malta is a low lying island in the centre of the Maltese Archipeleago, the other islands being Gozo and Comino. It is a religious country having 365 churches for a population of 365,000. It is approximately 22 miles long by 12 miles wide and has been invaded many times during it's 7,000 year history. Tourism is its main source of income and it constantly appears to be undergoing facelifts to make it even more attractive for visitors. English is the second language and the population are pro-British. It joined the E.U. on the lst May 2004.




## Area of sightings

Despite its small size I decided to concentrate on just one area of the island, almost at the tip of the Northern end. I chose the area because it is the narrowest part of Malta and I was easily able to walk across from east to west.This was from Mellieha Bay to Anchor Bay (known as Popeye's Village). I used the Red Tower as the furthest northerly point and the Ghajn Znuber tower as the southern point. In all I covered just over a square mile.

In addition this area has a wide variety of terrain. Along the road from Mellieha to Anchor Bay are farm fields, giving way to expanses of rock the further up the valley you climb. Here one finds dense low lying shrubs living on the sharp outcrops of limestone. There are cliff and boulder shorelines on the west and sandy bays on the east.

## Warning

It is worth bearing in mind that almost all land in Malta is privately owned or leased from the Government. This means, for ramblers, that once off the road you are almost certainly on somebody's property. What can appear as a clear footpath can suddenly have a sign warning tourists to keep out. This is a matter of concern to the Nature Trust as

to what are official and unofficial signs. The second thing to bear in mind are the hunters who shoot birds. They do literally walk across the hills shooting, what appears anyway, to be anything that moves! This always caused me concern as on a couple of occasions I heard pellets falling around me. All I can say is look conspicuous. Despite the tour representatives assurances that shooting was illegal I understand that at least 11,000 licences are granted annually and that over 250 tonnes of lead pellet is used yearly. Unfortunately the areas that they use are the areas that a large number of butterflies inhabit.

The third warning concerns the large nets placed on the ground to trap songbirds. You can easily find yourself entangled in these nets if pursuing some insect. Needless to say the owners of the nets are not very polite upon finding you in the middle of their contraptions.

Lastly take plenty of water and always wear head protection. I know to my cost that what appears to be a cool clear day can, after spending a few hours in the hills, make you quite ill. It goes without saying that sensible footwear is essential too.

**The Weather**

For April the weather was wetter than usual and temperatures only went above 20°C on a couple of occasions. Strong winds were also common on approximately half the trips I took. On Saturday the 24th a full months rain fell in 24 hours (according to locals and newspapers).

**The Butterflies**

According to which literature you read Malta has either 19 or 22 species although it is claimed that since 1841 over 40 have been recorded. The reason the number is low compared with islands such as Sicily is the soil is mostly calcareous (lime) and the elevation low (800 feet). Never the less I doubt the low figures, given that I identified 12 species in just over a two week period in a square mile. I knew, for example, I would not encounter the Holly Blue (*Celastrina argiolus*) the Short Tailed Blue (*Syntarucus telicanos*) the African Grass Blue (*Zizeeria knysna*) the Pigmy Skipper (*Gegenes pumilio*) because of the season or the location I had chosen.

**Papilionidae**

The Swallowtail butterfly (*Papilio machaon sphyrus*). I would class this butterfly as abundant with 20-30 sightings on almost all occasions that I ventured into the hills. The flight is rapid and it rarely pauses for more

than a few seconds on flowers, gorse or grass before continuing on its way. The food plant (fennel) is plentiful in the area I monitored, although I did not see a single caterpillar or egg. The specimens observed must have been from two broods as some were old and tatty whilst others appeared to have recently emerged from the pupa. I suspect that hotter weather and lesser winds would slow down the flight of this insect.

**Pieridae**

In the second week of April both the Large and Small White (*Pieris brassicae/rapae*) were abundant. Indeed on one occasion my wife and I witnessed an incredible sight as an entire field was covered with the butterflies almost as though a white sheet was being gently waved above the grasses and wild flowers.

I only saw two Bath Whites (*Pontia daplioice*) which I could definitely confirm, obviously it is difficult to separate the Bath White with the Small White due to them being the same size. Once caught however the difference on the underside is immediately apparent.

The Clouded Yellow (*Colias crocea*) was seen only in three and fours on most outings. I can also confirm the variety *Helice* was seen on one occasion. The Mediterranean Brimstone (*Gonepteryx cleopatra*) was only seen twice and both on the same day.

**Satyridae**

Given the fact that the literature read indicated that members of this family are widespread and common, I encountered relatively few.

The Wall butterfly (*Lasiommata megera*) and Speckled Wood (*Pararge aegeria*) were seen on only three or four visits. Also the Small Heath (*Coenonympha pamphilus*) and Meadow Brown (*Maniola jurtina*) were not much commoner. I found these species difficult to identify due to their habit of flying close to the cliff edges. Just as I would be about to net one it would disappear over the edge!

**Nymphalidae**

The Red Admiral (*Vanessa atalanta*) was only seen twice on separate visits. Although I was unable to catch a specimen, I did get close enough to one to establish it was a perfect adult.

The Painted Lady (*Vanessa cardui*) was abundant after the storm on the 23th April. Although very difficult to net they were almost everywhere over the square mile that I covered. Specimens did vary from near perfect to battered and tatty.

**Lycaenidae**

The Brown Argus (*Aricia agestis*) was rare. I only encountered one and thought I had netted a Copper. Again the habit of flying close to cliff edges made identification difficult.

The Common Blue was frequently seen, although the male far more than the brown female.

In conclusion I reckon that I identified 12 different species during my visit to Malta. Due to the area I chose to observe I did not expect to see that many in the time available. When I return to Malta I will conduct a similar exercise in the Dingli region which includes the only wooded area on the island, to compare results.

I noticed that the time spent observing after the 24th April showed a definite decline in butterflies. This could have been due to the expiry of broods, farmers beginning to fumigate their fields or the storm.

## Video camera and the butterfly

*by Matthew Rowlings (9108)*

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Having always greatly enjoyed SLR photography of the habitats and landscapes encountered on my butterfly jaunts I am invariably disappointed by my butterfly close ups. For some reason the photograph is always out of focus by about the same margin. I tried everything from contact lenses, glasses, no glasses and eye pieces but however focused the butterfly is in the viewfinder it is out of focus on the print. This is even true when using a tri-pod when camera shake or movement at the moment of firing the shutter cannot be held responsible. Add to this the hot conditions of the chase and the alert nature of the butterfly, I had all but given up butterfly photography.

In May 2000 I pushed the boat out and decided to purchase a video camera. Quality of the recording was of primary importance for all recordings and as one of the activities I would like to use this for was butterfly photography, several other pre-requisites had to be met. These were small size, close focus at sensible distance from the subject combined with adequate magnification and a good focusing mechanism.

Out in the shops it became immediately apparent that compactness was only available in the digital video market. Additionally these cameras also offer the best resolution available in the "small, sub £1600" camcorder market. These take a miniature cassette and consequently the whole camera can be reduced to half the size of a Collins field guide and 1.5 times thicker. This is ideal as it easily fits into a hip bag and actually weighs less than the same Collins field guide. The quality of the recording is only marginally less than 625 lines, so when played back on screen, it is not perceptibly lower than broadcast quality.

I tried out several manufacturers including Canon and Panasonic which produced the best performances but they were lacking in what would be hoped for for £1000. Then I tried the Sony PC2 and the results were spectacular. Everything felt right and looked right through the view finder.

The Sony would focus at full zoom to much shorter distances than its rivals which meant smaller butterflies would fill the screen. A Small Tortoiseshell (*Aglais urticae*) would fill the frame, the other cameras would manage Scarce Swallowtails (*Iphiclides feisthamelii*). This is all achieved between 18 and 30 inches distance so there is less chance of disturbing the subject than with many SLR set ups.

But this still wasn't sufficient, as most butterfly species are smaller than Small Tortoiseshells! So how was I going to improve this performance. All proprietary lenses for these cameras are telephoto lenses that greatly improve magnification but drastically reduce the close focus capability. For my purposes this meant that even a Scarce Swallowtail no longer filled the frame. About five salesmen later (including those in some well known camera chains), I think it was Peter who suggested a close up lens held infront of the camera. Perfect. The overall focusing range is reduced, meaning the lens must be removed for landscape shots, but it still gives a good 18 to 30 inches in which to photograph the close up subject. All butterfly subjects can be captured comfortably – the smallest I've taken so far was a Small Blue (*Cupido minimus*) at Martin Down, 30 minutes after the HuMBuG visit to that wonderful site split up and headed for home.

Much smaller subjects can be taken by moving the zoom to wide angle, and approaching very close to the subject. This is only really useful for eggs etc. that can't escape. Approach is so close that the lens can obscure light at the subject, so this technique is of limited use.

The addition of a close up lens causes a loss of light into the camera. The digital technology is such that they work at very low light

require compensation in the form of lights etc. The only snag with needing a lens not specifically designed for the small camera (i.d. thread 30.5mm) is that it does not fit easily. I spoke to a supplier of special lens mountings and they provided two step up rings to allow me to mount my 49mm close up lens to the front of my camera.

As alluded to above, the zoom rating of these cameras can be used only as a rough guide to capability of the camera to perform well at close up conditions. The Sony is a 10× camera but completely out performed the 12× camera I tried. However, there are always two (or more) quotes for zoom. One for optical zoom, and the other(s) for digital zoom. Optical zoom is achieved purely by physical movement of the primary lens to vary focal length and the full image projected in the camera is used for the recording. Digital zoom is achieved digitally by expanding increasingly smaller areas of the image in the camera – in effect each grain, or pixel, of the image is made larger and there is a corresponding rapid and devastating loss of quality. I never use the digital zoom on my camera because the image becomes quite unacceptable and the film may as well not be taken. One drawback of the compact digital video camera is the impact of miniaturisation on the optical zoom capability which is roughly half that of the larger Hi8 and SVHS cameras (these are quoted at around ×20). However, I didn't try these cameras for close focus capability.

The bane of many home made videos is camera shake and excessive and rapid zoom that can often be sickening to watch. The latter is a matter of technique but the camera can compensate for the former. Here, once again, the Sony scores over its rivals. It has optical rather than digital image stabilisation giving a more natural feel to the recording. Once again the digital technique relies on using less than the full image in the camera and compensates for movement by recording from different parts of the wandering image in the camera. By way of experiment I switched off the image stabilisation once and the image became horribly jittery, particularly at the higher zooms used for close up work. Of course this is only an issue for hand held recordings.

I nearly always carry a tripod with me when on the hunt for butterflies. This provides for much steadier shots than achievable with the hand held camera, even with the image stabiliser. This is much more obvious at higher zooms and particularly when close up. The tripod has a quick release mechanism that allows the camera to be mounted very quickly onto the tripod and allows me to store the camera safely in its belt bag when not in use. It also has quick release legs that make it easier to get the correct length legs in the heat of

action. I bought a cheaper lightweight tripod because I would be disinclined to carry a heavy one about. I use just two of the legs as this allows freedom of movement by rocking back and forth as the butterfly moves in and out of the depth of field. I don't like using a single leg as this allows distracting lateral movement in the image. I have also laid the two legs flat on the ground to provide a base to film butterflies resting on the ground.

Focussing is automatic but even after a whole season I am sometimes caught out as the camera focuses on the ground beyond the subject, or the wrong blade of grass. I need more practice to eliminate this. Hunting must also be avoided and the Sony does this well. I don't recall an occurrence of hunting when doing close up work but it can happen in low light conditions. I have no experience with other cameras other than in the sales room where the Sony did much better than its rivals at the same test.

Two huge advantages over SLR photography is the depth of field and the LCD screen that can be used as a view finder. The depth of field is measured in centimetres, not millimetres, so neither head nor tail of a butterfly will go out of focus as is turns end on to the camera as it wanders around a flowerhead. In fact the entire flowerhead will be in focus. For me, this means all my focussing issues are history and I achieve superb clarity at all times. Unfortunately the depth of field is so great that occasionally distracting backgrounds occur. This happened in Sicily this spring with a Swallowtail (*Papilio machaon*) fluttering around a Hemp Agrimony flower head with a nasty wire fence and road six or seven feet below the flowerhead.

Secondly, the LCD screen is a god-send. This swings out from the body of the camera and shows, in full colour, the image seen through the lens. This can be angled so the photographer no longer has to lie in the mud to see through the viewfinder. I've got some excellent footage of a Purple Hairstreak (*Quercusia quercus*) in Monks Wood courtesy of this screen – I could only see the butterfly's shadow through the leaf, but holding the camera high with the screen angled downwards I could see what I was recording! Similarly, I have footage of Dark Graylings (*Pseudochazara mniszechii*) in Greece with the camera nestling between the rocks and the LCD angled upwards – it would have been impossible to get an eye onto the viewfinder in both cases. This technology is not yet perfect however and the image can be very difficult to see in bright or direct sunlight. It also has a significant effect on battery life, reducing it by around 30/40%.

The only disappointment I've had with the Sony is over exposure of yellow butterflies against a green background. This was particularly disappointing for the Eastern Orange Tip (*Anthocharis damone*) footage I took on the slopes of Mount Etna in Sicily. The butterflies look almost white, and at best a very tired yellow. I've since found that this is easily compensated by manually setting the exposure. The ability to manually compensate for exposure is not widespread amongst the cameras on offer but is well worth looking out for.

The practicalities of camera use were a concern. Being such a small camera, the batteries are small – the one supplied with the camera only allows 20 minutes of recording. I invested heavily in another battery that provides 40 minutes of recording. These times are actual footage and do account for the rather large amount of time spent chasing the insects around with the camera powered up. I have never even approached this amount of recording in a single day, so this has not proved to be a problem. What's more, these highly expensive batteries do not have "memories" and can be fully recharged without first discharging them. This is not at all common amongst the video cameras and is of great use when on holiday. So far I have had no trouble recharging the batteries in Europe – in Greece and Sicily.

One of the advantages of video recording over still photography is the ability for instant replay. If in doubt, this can be very useful, but generally the huge depth of field makes it almost impossible to get it wrong. But it is always nice to know you've got a good sequence! It is also very handy when explaining to people about what I'm doing – show them the recording and invariably they are highly impressed! When travelling, the camera can be plugged directly into the hotel TV and the day's images replayed in the cool of the evening.

The tapes are tiny – barely 5×3×1cm in dimension. They store 60 minutes, extendable to 90 minutes but I've not tried this yet for fear of loss of quality. They are very expensive though. Fortunately, it is surprisingly hard to record ten minutes of good butterfly material in a whole day. (In contrast recording weddings or other social events very quickly eats into the film.) Scenic shots are easier to record and can quickly add two or three minutes to the tape.

Digital still photographs can also be taken. These are high-resolution images, approaching 35mm quality but not there yet. Numerous images can be frozen as previews, and when absolutely happy with the captured image it can be committed to tape. There are cameras with "memory sticks" that store images that can be down loaded into computers. However, without a computer to down load to, and the

extra £200 outlay, I opted for the camera without this facility. The image is just as useful recorded in taped form.

Back at home, there's the editing. I run through the tape noting where everything is and then decide how to put it together. I then spool through the tapes to the set points and record the snippets onto a VHS tape. This can be played back in any normal video recorder without getting out the video camera. More usually I simply record the whole tape, un-edited, onto VHS and avoid the time consuming editing part of camera ownership.

The camera is not just a butterfly tool – it is also great fun. There is a wealth of digital special effects to play with (I don't have the arty streak but it looks fun!). The low light capability makes it excellent for nights out. The small size of the camera does not intimidate people. They notice it but very quickly forget it's there – it's too small to be dangerous! I've used it very successfully at two weddings. My four recently married friends are also very pleased with the images captured of their special days, leading to long production runs of VHS tapes for the families concerned. It is very good at capturing the atmosphere, picking up sound very well and, of course, movement and colour.

So how much does all this cost? It's dear. Nothing comes cheap and miniaturisation is no exception. These cameras hover around the £900/1000 mark (with a bit of shopping around). Films are £7.50 each and the extra battery was about £80. The step up rings £15, close up lens about £20 and the tripod roughly £25.

No small investment but I got a good price on the model I selected as it approached the end of its production run. In no way have I regretted the purchase and have had much enjoyment out of it. It has actually exceeded my expectations. Already I have excellent butterfly footage from Sicily, Greece and parts of England and a couple of weddings.

# Notes from a Small Suburban Garden

*by Stuart Cole (10159)*

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In August 2004 I found our cat watching a huge yellow caterpillar crawling across the lawn in our small garden in south west London. There was no mistaking it for anything other than the larva of a Death's-head Hawk Moth (*Acherontia atropos*). This prompted me to write a note on some of the more interesting insects that have turned up in the garden over the past five years. Our garden is very modest, just 25 feet by 18 feet. It is surrounded by other houses and gardens, but has produced quite an assortment of species that I have not found elsewhere. We have made little effort to attract wildlife, other than abstaining from the use of insecticides, weed-killers, etc. Apart from that, we have merely allowed a windblown sallow (*Salix* sp.) seed to develop into a sapling and sunk a plastic basin into the soil to hold rainwater. The rest of the plants are a fairly typical mix of garden shrubs and herbs.

Until I found it on the sallow sapling in August 2003, I was unaware that the world's largest species of aphid, *Tuberolachnus salignus*, lives in Britain. Actually, it is almost cosmopolitan, being absent (I think) only from Australasia. At 5.5 mms in length, *T. salignus* is a giant among aphids. It is dark grey with black spots and the adults are distinctive for the prominent blunt spine in the middle of the back. There were some puzzling aspects about this species. Whereas all other aphid species in the garden are 'milked' for their honeydew by the common Black Garden Ant (*Lasius niger*), the groups of *Tuberolachnus* were never approached by this species. Instead, they were visited for their honeydew by Yellow Meadow Ants (*Lasius flavus*) both by day and at night. This latter is a subterranean species that does not normally emerge above ground. The ants were never seen taking honeydew directly from the aphids but drank from the copious pools of the sweet liquid that collected on the leaves immediately beneath them. At night the pools of honeydew were sometimes also visited by male mosquitoes and, on at least one occasion, a female mosquito, which, I thought, only feed on blood. Another point of interest was that no predatory or parasitic insects were ever seen to attack the *Tuberolachnus* groups yet all other aphid species are heavily predated and or parasitised.

The sallow is a good example of how even just one choice native plant can significantly increase the insect diversity of a suburban

garden. As well as the several kinds of aphid and their various predators and parasites, the sallow has attracted two kinds of leaf beetles (*Chalcoides aurea* and *Galerucella lineola*) and has been food for the unidentified larvae of at least three species of moth. In September 2004 the underside of some of the leaves became covered with minute orange fungi, perhaps a type of mildew. Most of the affected leaves had one or two tiny grubs, probably dipterous, no more than two millimetres long and of a similar colour to the fungi upon which they appeared to be feeding. Altogether, I reckon that the sapling has supported at least 15 species of insects directly and indirectly, at one time or another, over the last two years.

A clump of native figwort (*Scrophularia* sp.) was also quite productive in summer 2004, sustaining the larvae and adults of the weevil *Cionus scrophulariae* and caterpillars of the sawfly *Tenthredo scrophulariae*. The latter are very conspicuous, being an inch long and pure white spotted with black, while the adult is a rather handsome black and yellow wasp-like insect. At the same time, non-native *Pelargonium*s were host to the pterophorid moth *Amblyptilia acanthodactyla* whose little green caterpillars reduced the flowers to tatters and *Tropaeolum*s (nasturtium) were food for Large White Butterfly *Pieris brassicae* caterpillars.

Two fairly recent additions to the British beetle fauna have turned up in the garden. One was the vegetarian ladybird *Henosepilachna argus* from southern Europe first discovered in this country a few years ago on White bryony (*Bryonia dioica*) at Molesey, just the other side of the Thames from Hampton. It is now quite easy to find in the area wherever there is White bryony. The adult is distinctive, being fairly large for a Coccinellid and dark orange with black spots. The spiky greenish larvae too are unmistakable. The other alien species, caught in flight, was the bark beetle *Scolytus pygmaeus*. This apparently originates from the region of the Caucasus and Turkey and has been extending its range north-west across Europe. A longer established introduction to Britain, the bright red Lily Beetle (*Liliocerus lillii*), feeds on plants of Imperial Fritillary in a neighbouring garden.

Orthoptera occur infrequently. The Speckled Bush-cricket (*Leptophyes punctatissima*) is occasionally found. However, more unusual I would think for a town garden, is the groundhopper *Tetrix subulata*. One adult was discovered in mid August 2002 resting on a log where its grey-brown colouring made it inconspicuous. It stayed in the garden for nearly two months, never straying from the small log or the bare soil immediately around it. A couple more *Tetrix* were seen the following spring but these did not stay.

Whilst cutting the lawn one day in summer 2002, I noticed several hairy black caterpillars at the edge of the grass. I identified these as the near full-grown larvae of the White Ermine Moth (*Spilosoma lubricipeda*) of the Arctiidae. At night they came out onto the lawn to graze on the grass, clover and dandelion leaves. These caterpillars were present for the next few days, spending the daytime sheltering in the longer grass that I left uncut at the edge of the lawn and coming out to feed on the open lawn each night along with a scattering of slugs and snails. After a week they disappeared and had presumably pupated.

It was in the garden that I first observed the mating dance of the rather handsome green male of the fly *Poecilobothris nobilitatus* (Dolichopodidae). Two females and a male *P. nobilitatus* were present on the surface of the rainwater in the sunken washing-up basin. The male was displaying to one of the females using his wings, which are dusky with a faint white spot at the tip, by waving them at her as he stood to one side of her. After minute or so he then flew up in an arc to land on her other side, waved his wings at her again for a while, then flew back his first position. He repeated this procedure, first on one side of the female, then the other, several times. She was unimpressed and eventually flew away whereupon the male proceeded to court the second female in the same manner but with no better success.

It was also in our garden that I discovered that there are Ichneumon wasps that parasitise spiders. One summer afternoon a half inch long black ichneumon landed in the web of an orb-web spider (Araneidae) constructed in the corner of a window. The spider in her hiding place in a recess in the window frame, assumed the insect was potential prey that had blundered into her web and rushed down to investigate. However, instead of assailing the ichneumon in the usual way, she immediately withdrew upon coming into contact with the insect and returned to her lair. The Ichneumon wasp, without needing to struggle free of the sticky threads, walked across the web with as much ease as the spider, and followed her into the recess. I now realised that the ichneumon had deliberately landed in the web and must have some substance on her tarsae that prevented her from sticking to the strands. I could not fully see what was happening in the recess but the ichneumon arched her abdomen a couple of times and appeared to thrust it towards the spider. I assume that in doing so she must have laid an egg (or eggs) on the web's owner. Other types of spider in the garden are commonly preyed upon by small black pompilid wasps and wasps of the Trypoxylidae whose clusters of fragile earthen cells are found in the folds of empty compost bags.

To return to the Deaths-head Hawk Moth caterpillar, we assumed that our cat must have brought it in from a neighbouring garden as we have no likely foodplants in ours. At around four inches in length, this individual was undersized for a full-grown *Acherontia* larva. Nevertheless, it burrowed into a basin of compost and successfully pupated within a fragile chamber a couple of inches down. Two weeks later our cat brought us another *Acherontia* caterpillar but this one was injured and quickly died.

Finally, as a Coleopterist, I append a list of beetles found in our garden since March 2000 and that I have identified to at least generic level.

CARABIDAE
*Amara* sp.
*Harpalus aeneus*
*Leistes spinibarbis*
*Nebria brevicollis*
*Notiophilus biguttatus*

STAPHYLINIDAE
*Aleochara curtula*
*Philonthus* sp.
*Platydracus stercorarius*
*Tachinus* sp.
*Xantholinus longiventris*

MELYRIDAE
*Anthocomus fasciatus*

DERMESTIDAE
*Anthrenus fuscus*
*Anthrenus verbasci*

TRIXAGIDAE
*Trixagus dermestoides*

COCCINELLIDAE
*Adalia bipunctata* 2-spot Ladybird
*Coccinella septempunctata* 7-spot Ladybird
*Harmonia quadripunctata*
*Henosepilachna argus* Bryony Ladybird
*Propylea quattuordecimpunctata*
*Psyllobora vigintiduopunctata*
*Scymnus frontalis*

CRYPTOPHAGIDAE
*Cryptophagus acutangulus*

NITIDULIDAE
*Epuraea* sp.

LUCANIDAE
*Dorcus parallelopipedus* Lesser Stag Beetle
*Lucanus cervus* Stag Beetle

SCARABAEIDAE
*Onthophagus coenobita*

CHRYSOMELIDAE
*Chalcoides aurea*
*Galerucella lineola*
*Psylliodes napi*

CERAMBYCIDAE
*Clytus arietis* Wasp Beetle
*Pogonocherus hispidus*

APIONIDAE
*Protapion fulvipes*

CURCULIONIDAE
*Barypeithes pellucidus*
*Cionus scrophulariae*
*Miccotrogus picirostris*
*Otiorhynchus sulcatus*
*Scolytus pygmaeus*
*Sitona* sp.

**Acknowledgements**

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# A Few Observations on the Lepidoptera and Odonata of 2003/4

*by Geoff Trevis (7049)*

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This short and unscientific note was prompted by the editorial in the August 2004 *Bulletin* and by Nick Bowles' butterfly report in *British Wildlife*, 15, p 359, mentioned in the *Bulletin* editorial. Both suggest that 2003 was "the best butterfly year since 1997". However, whilst this may be true from a national perspective, my own experience indicates that it all depends on where you are and what species you are talking about. For example, around my home town of Droitwich Spa in Worcestershire, 2003 was a spectacularly bad year for the Peacock butterfly (*Inachis io*). In both my garden and on the local nature reserve that I manage the number I saw in the entire season was less than ten! Other naturalist colleagues, whilst having a bit more luck, nonetheless confirmed the general picture.

2004 produced some slight anomalies. In general, the "whites", Large, Small and Green-veined, seem to have done very well. On the reserve, the grassland species have similarly had a good year with large numbers of Marbled White (*Melanargia galathea*), Gatekeeper (*Pyronia tithonus*), Meadow Brown (*Maniola jurtina*), Large skipper (*Ochlodes venatus*), Small skipper (*Thymelicus flavus*), Essex Skipper (*T. lineola*) and Wall (*Lasiommata megera*). However, when it comes to Peacock, Small Tortoiseshell (*Aglais urticae*) and Red Admiral (*Vanessa atalanta*) things are very different. Peacock has shown a slight but limited increase over 2003 and Small Tortoiseshell and Red Admiral have been virtually absent. There was a brief spring appearance of Small Tortoiseshell but the summer brood has been so bad that whilst out on a site survey with some entomologist colleagues we stopped in wonder at seeing two specimens together on a patch of water mint! I have seen three Red Admirals, one in my garden, one on the reserve and one at Coughton Court near Alcester in Warwickshire. Also, I should mention that catches in my garden moth trap have been very disappointing.

The nature reserve has two water bodies running through it, the River Salwarpe and the Droitwich canal and there is a large lake nearby. I have never before seen so many dragonflies as I have this year. I am not talking about number of species, which has been average, but of the number of individuals. Southern Hawker (*Aeshna cyanea*), Common Hawker (*A. juncea*), Brown Hawker (*A. grandis*), a

Migrant Hawker (*A. mixta*), Common Darter (*Sympetrum striolatum*) and Ruddy Darter (*S. sanguineum*) have had an exceptional year though, thinking about it, Black-tailed Skimmer (*Orthetrum cancellatum*) and Broad-bodied Chaser (*Libellula depressa*) have been conspicuous by their absence. On the other hand, damselflies have had a very poor year. The Banded Demoiselle (*Calopteryx splendens*) has been about in very low numbers and I do not recollect seeing the Beautiful Demoiselle (*C. virgo*) all season.

What the significance of these observations is I have no idea as they are based on casual records in the field (my principal interest is hymenoptera) but it would be interesting to know what has been happening in other parts of the country. Wearing another hat, as chairman of the Worcestershire Biological Records Centre (BRC), could I make a point of asking everybody to send their records to their local BRC. Only in this way will we monitor many species at a local level, particularly those not covered by national bodies such as Butterfly Conservation and others.

## Hummingbird Hawk Moth Hibernation

*by Ian D. Herbert (7670)*

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As those interested in Hawk Moths will surely know, the past few seasons have been rather good for *Macroglossum stellatarum*. I wonder whether one can ask, via the *Bulletin*, whether any members have hibernation records? I had never even heard of hibernation in the UK, but found a very lively specimen resting in a cool room at Shepperton, Middlesex, on 29th December 2004. It is now suitably boxed (and again dormant) in the cool. I hope that it gets through to the Spring. However, I rather doubt that it can do so because in the Mediterranean and North Africa it often "goes out" on sunny days (as per the Red Admiral *Vanessa atalanta* and others) to visit flowers etc.

Anyway, I rather hope that others may be reported and I wonder, is this due to climate change?

# Big blobs and little blobs – obscure and curious items of entomological literature, part 11

*by Richard A. Jones*

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A continuing series of some strange books that have found their way into my library. Not useful key works by important entomologists, but strange oddities, quaint, off-beat or just plain entertaining.

## *Common British beetles and spiders, and how to identify them* by S.N. Sedgwick, London, Charles Kelly

Although undated, this small 62-page book must have been printed some time in the first decade and a half of the 20th century. There is a charming dedication carefully inked onto the flyleaf of my copy, bought for 75p (15/- in old money) in a Brighton bookshop in 1982: 'Dear Frank, from Auntie, Dec. 30th 1918'. The small size is described inside as 'foolscap octavo'. Foolscap paper, named after the fool's or dunce's conical cap in the original watermark, may still be familiar to the legal and accounts professions that continue to use it, but it has long since been eclipsed in general use by the A4 sheet. It was slightly longer and slightly narrower, and after being folded once, then again, produced the 8-pages of the octavo format.

One of several in the 'How to identify' series, this is obviously a book aimed at youngsters, both in its pocket size and its 1 6d price tag.

Spiders and beetles might seem an odd mix, but perhaps the author saw them both as crawling creepies rather than flying ones. The text is enthusiastic and charming with picture captions like 'Mrs. Spider guarding her eggs' and 'A garden spider in her nest, covered with dew-drops'. The general text is no less effusive as glow-worms are likened to girl guides signalling with lamps, whilst the romance of a male stag beetle carrying off his mate is described rather coyly as 'the young lady, held kicking and struggling in his great horns high over his head...[like] a boyish recollection of the Roman's capture of the Sabine women'. And on it goes. What ho!

The spider part of the book is well researched and there are useful illustrations of examples of 17 family types backed up by diagrams of eye arrangements in 22 representative species. There are also a few black and white photographs. I'm not sure I fully appreciated the captions though. The house spider, a Tegenaria species, is captioned

rather lamely 'a beautiful but common spider'. The beetle section, though, leaves even more to be desired.

It seems that the publishers were interested in experimenting with whole-page plates based on photographs of set museum specimens. They did this by placing carded and pinned specimens in a congregation and photographing them together as a group. This must have been quite a challenging and novel idea, but unfortunately it had only limited success. Four plates of 233 specimens are reproduced at about three-quarters life size. Unfortunately only the largest of these are at all recognizable. Many of the smaller species are represented by small black blobs, almost indistinguishable from one another. The cockchafer and the oil beetle are clearly identifiable as are the minotaur beetle, bloody-nose beetle and great diving beetle, but I couldn't tell the difference between the fungus beetle *Cis*, the powderpost beetle *Lyctus* and the woodworm *Anobium* which, although clearly different to the naked eye in nature, are just three black dots next to each other on plate 2.

My eye was then drawn to figure 58, a strange elongate pear-shaped beetle as large a devil's coach-horse but wholly beyond my ability to recognize. I am only put out of my misery when I check the text, it is the tiny water beetle *Ochthebius pygmaeus*; the author must have particularly liked this one species to 'give a very greatly enlarged photograph, as this beetle itself is no larger than a full stop'.

Size is a key factor when identifying insects and looking at these pictures I am left generally confused. It is not helped that the author gives no measurement scale in millimetres or inches. Instead he uses a small coin, a six-penny piece, to give an idea of scale. But this coin has long since gone from our currency and I have no idea how big it really was. As with today's British coinage, the side that states the value has a design based upon a crown and various leaf motifs. It is this side that shows in the photographs. I have no idea what monarch's head appears on the other side. I am going to have to contact a numismatist to tell me how big the coin is; perhaps I can get a date too?

# Hawk-Moth Encounters

*by B.G. Chatfield (11789)*

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Already developing a passion for lepidoptera in the 1940s at the age of about 10, my first, and most exciting encounter was when a neighbour presented me with a half-grown *Acherontia atropos* larva. I reared it and, upon its emergence, it became the star exhibit in my growing collection of butterflies and moths. Living in the countryside and with a large, partly wild garden, Elephant and Privet Hawk larvae were reared. 1947 was a good year for Humming-bird Hawk Moths, and Convolvulus Hawks were attracted to the tobacco plants (*Nicotioana affinis*) my father grew.

By 1950, I had constructed a home-made light trap and was catching Poplar, Lime and Eyed Hawks. At this point, however, my hobby suffered a severe set-back when in June, National Service put my light out, as it were. However, during basic training in the Aldershot area, I met a fellow collector, R.G. Cave (AES no 1338). We have remained in touch ever since. Another enthusiast was in education corps – Sgt. John Burton the well-known naturalist. He wasted no time in forming a small group of lads interested in natural history (about four of us as I recall). We set about searching for the Pine Hawk in the surrounding woods. This was quite exciting, since in 1950 it was not as well established as it is today. We were unsuccessful, and our request to run a light trap was not well received by the army. It was worth a try!

During the late 1960s, my precious collection was sold (mortgage, growing family – usual reasons). Does anyone know if any of my specimens survive? The latent enthusiasm was revived in the late 1970s when I began collecting again. This time I collected on cine film, followed by still photography, and more recently by camcorder. I am now able to record the growth of the larvae I rear, with close-ups of them feeding. It is satisfying to be able to release the various species captured in the light trap after filming them. The video film of Bee Hawks and Humming-bird Hawks I have managed to obtain has given me much pleasure.

Yes, my encounters with the Sphingidae have been enjoyable. All I need now is to add a Death's Head Hawk to my films, to end as I began 60 years ago.

# Macrolabic earwigs on London's roofs

*by Richard A. Jones*

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The common earwig, *Forficula auricularia* Linnaeus, must rank as one of the most widespread, most numerous and best known of British insects. And it is perhaps for this reason that it is so often overlooked. In 1998, I found in my garden a macolabic male, a specimen in which the pincers are greatly enlarged, two or three times the length of normal pincers. I have never found another and there is only this single record of a macrolabic specimen in the Surrey Wildlife Trust's recent atlas (Baldock, 1999).

However, I was recently brought a series of insect samples collected by Gyongyver Kadas, a PhD student at University of London's Royal Holloway College. She had taken the insects, mainly beetles, in pit-fall traps on several 'green' roofs in London. Amongst these was a surprising number of macrolabic male earwigs. Specimens were collected on the roofs of three large new buildings: an office and shopping development at Canary Wharf, and the nearby Waitrose supermarket. Nine of the pitfall samples from these roofs contained a total of 29 earwigs. In two of these, both collected on 6.viii.2003, one sample contained four macrolabic males and the other contained three macrolabic males, two ordinary females and one nymph.

The macrolabic form was once described as a separate distinct species, *F. forcipata* (Stephens) and even to the unaided eye it is distinctly different from the usual form of the insect. According to Marshall & Haes (1988), macrolabic forms are particularly common on offshore islands, and this statement got me thinking about the metaphorical 'island' character of these 'ecoroofs' surrounded as they are by the barren deserts of concrete, steel and glass that make up these large and prestigious metropolitan developments.

Ecoroofs come in various forms. Those at Canary wharf have *Sedum* matting covering large areas of its flat roof. Various stonecrops (*Sedum* species) are seeded into porous rubber matting, a bit like the spongy rubber mats used in gymnastics. The large sheets of matting are laid out on the soil in germination fields until the seeds sprout. When the plants are established the matting is rolled up, delivered to the roof site and laid down just like a fitted carpet. No further management is required. Other plants can become self-seeded in the matting, but this is a very

harsh habitat and only those plants able to survive severe drought for some parts of the year can survive (Payne, 2000). Numerous unusual insects and invertebrates were found on such roofs during preliminary surveys (Jones, 2002; Kadas, 2002) including, in particular, species usually associated with dry well-drained sandy or chalky soils.

Quite why a cluster of macrolabic earwigs should occur on these roofs is not clear. Conventional ecological wisdom has it that island species gradually evolve larger because of fewer predators and some evolve into wingless varieties because flying forms are more likely to get blown off the island and perish. In fact the largest known earwig species in the world, up to 8 cm long and wingless, is the giant earwig *Labidura herculeana* (Fabricius) once found only on the remote South Atlantic island of Saint Helena, but now, sadly, unrecorded for many years and thought to be extinct.

Little is known (or at least recorded) about particular earwig predators. Certainly there are no mice, rats, voles, hedgehogs or lizards found on these ecoroofs, but there are plenty of birds. One particular bird that regularly visits these roofs, the black redstart, has fuelled the

Figure 1. 'Normal' male earwig showing the strongly curved pincers which are one-quarter the length of the rest of the body.

Figure 2. Macrolabic male earwig showing the longer, less curved pincers which are about half the length of the rest of the body.

increasing interest in London's ecoroofs. It is an insect predator with a wide range of known prey. However, it is possible that a general decrease in predator load might encourage large-pincered earwigs to survive. It is quite likely that some earwigs might have been brought to the site with the rolled up matting when the *Sedum* sheets were laid between two and five years ago. But the roofs are only a few years old, hardly time for any real evolutionary change to take place. There are other possibilities.

Common earwigs are seldom recorded in flight, but it is sometimes claimed that the pincers are used to help with the intricate folding of the hind fan-like flight wings on landing. Perhaps macolabic males are more likely to fly, and therefore to reach these new habitats? But then non-macrolabic females must also get there somehow. Perhaps macrolabic males are the result of better nutrition during the nymph stage, despite the harsh dry environment there is a thatch of living and dead plant material in the *Sedum* layer. But then urban gardens, where earwigs are so common, are hardly poor in nutrients. There is some evidence that male pincer size is affected by female mating choice (Tomkins & Simmons, 1999), so perhaps roof-dwelling females are more easily impressed by male pincer size. Or perhaps macrolabic earwigs are just less scarce than I imagine and they regularly turn up in pitfall traps.

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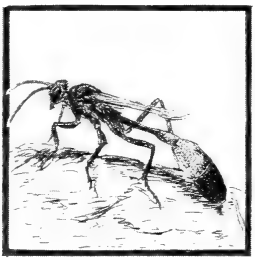

# ANNOUNCEMENTS, REQUESTS AND REPLIES

## The AES AGM and Members' Day

Another reminder that the AGM and Members' Day is 23rd April 2005 at the Royal Entomological Society 41 Queen's Gate, London.

## Apology – Error in Book Price

I am very sorry to say that I published the wrong price for Keith Wheeler's book *A Natural History of Nettles* in the October 2004 *Bulletin*. The correct price should be £14.99. At £1 cheaper than the quoted price, it is a true bargain!

## AES Field Meeting

There have been several requests recently for Field Meetings. We are trialling a major meeting in Suffolk. This will almost certainly be the Bank Holiday weekend 27th August.

The site is near Ipswich, near the A14, so reasonably accessible. It is small (2-3 acres) enough to have a friendly meeting. However it is very varied – calcareous sandy grassland, heavier grassland, hedges, mature trees, reed bed and fen/wet grassland, with ditches and standing water. All this should provide interest for most entomologists.

The idea is to have a meeting on Saturday. This can be tailored to interests, but will include a moth night, possibly with barbecue. There should be simple indoor facilities with at least one microscope, to help with studying fauna discovered (and in case of bad weather). There is a cheapish hotel nearby and possibly facilities to camp on site (very basic). This means that we can study the contents of the moth trap and possibly have a group or individual trips to local nature reserves on the Sunday.

Anyone with interest can contact Phil Wilkins (phil@bombus.freeserve.co.uk or 01473 831571). More details will appear in a later *Bulletin*.

**Cambridgeshire & Peterborough Biological Records Centre**

Cambridgeshire is setting up a Biological Records Centre (Cambridgeshire & Peterborough Biological Records Centre, C&PBRC). At present we have a Data Officer in place, and in the spring a Manager and Community Officer will join the staff. The object is to act like other records centres, and be a county base for information on all types of wildlife and habitats.

This is a general message to any AES members in the Cambridgeshire area. If you would like to be on our mailing list for our newsletter which goes out four times per year, or have records/expertise or any queries which you feel you may be of some value to us, please get in touch. I would especially like to hear from any one who would be willing to receive the occasional photo/description which is puzzling/interesting, etc with a view to providing an identification/information.

Please contact
Louise Bacon, C&PBRC 01954 713570,
Email louise.bacon@wildlifebcnp.org
c/o the Wildlife Trust,
The Manor House,
Broad Street
Cambourne CB3 6DH

**Marris House Nets**

Marris House Nets has recently (1/01/2005) been acquired by B&S Entomological Services. Their web site is http://www.entomology.org.uk; their email address is sales@entomology.org.uk and their telephone numbers are +44 (0) 2838336922 and +44 (0) 7767386751.

**Rowan Way Open Space, Bognor Regis, West Sussex**

*by Peter May (10514)*

*6 Aigburth Avenue, Bognor Regis, West Sussex, PO21 3DA.*

Several years ago now I volunteered to become the West Sussex Area Rep. for our Habitat Conservation Officer, Peter Sutton and have corresponded occasionally with parties such as the local councils and attend the Biodiversity Forum for my local area.

A short while I ago was contacted by Arun District Council regarding a large area of countryside on the outskirts of Bognor Regis. This site is

a fairly large one having previously been agricultural farmers fields. There is a small river along the length of southern side, and ditches and hedges surround all of the other sides of the fields. During the winter months many parts of the site are quite wet and at times are subject to flooding.

Arun District took over the site a few years ago and have designated it as a public open space. As part of the management plan for the area they wish to take into account the needs of the wildlife including invertebrates. As such, I have been asked as to whether it is possible to have any surveys of the site carried out in order that some knowledge of the invertebrate fauna could be known and advice then given as to how best to manage the site for these species (as well as other fauna and flora) as well as for others which might colonise the area as it progresses.

Could any members who are willing to survey the site either as a one-off or on several occasions please contact me at the address above.

## Diary of Entomological Events in 2005

Kindly provided by Craig Macadam

Key: **BENHS** – British Entomological and Natural History Society

**ECSS** – Ecology and Conservation Studies Society. Meetings start at 6:30pm and are held in Room B29, Senate House, Malet Street, London WC1E. Contact: Ken Hill, 93 Elmhurst Drive, Hornchurch, Essex, RM11 1NZ. Tel: 01708 456652. Email: ken@kenneth17.fsnet.co.uk

**LCES** – Lancashire and Cheshire Entomological Society.

**RES** – Royal Entomological Society

**ZSL** – Zoological Society of London – Meetings 5.30pm, ZSL Meetings Room, Regent's Park. Contact: Deborah Body. Tel: 020 7449 6227. Email: Deborah.body@zsl.org

**February**

**8** **ZSL: Scientific Meeting – Biomimetics: The Science of Looking to Nature for Technological Inspiration.**

**18** **ECSS: Invertebrates of Brownfield Sites – Peter Harvey.**

**18-21** **Field Studies Council: Centipedes, Millipedes and Woodlice – Identifying Myriapods and Isopods.** Flatford Mill. Contact: http: www.field-studies-council.org/leisurelearning/2005/courseinfo.aspx?id=363

**19** **BENHS Workshop at Dinton Pastures: Coleopterists' Day.** Pelham-Clinton Building, Dinton Pastures Country Park, Davis Street, Hurst, Reading, RG10 0GH. 10:30-16:00. Bookings and Contact: Tel: 0118 932 1402, or Ian McLean, 109 Miller Way, Brampton, Huntingdon, Cambs, PE28 4TZ. (ianmclean@waitrose.com) or www.benhs.org.uk

25 **ECSS: Britain's Rarest Mollusc – Dr Martin Willing.**

27 **BENHS Open Day at Dinton Pastures.** Contact: www.benhs.org.uk or Tel: 0118 932 1402

**March**

4 **ECSS: Coastal Invertebrates – Dr Chris Gibson.**

5 **LCES Annual Exhibition** (11am to 4pm) - Frodsham Community Centre, Fluin Lane, Frodsham. 7:30pm start. Contact: Ian Smith, tel: 0161 427 3887. Email: ifsmith@onetel.com or Bob Letsche, email bob.letsche@blueyonder.co.uk

5 **BENHS Workshop at Dinton Pastures: Aculeate Wasps for beginners identification workshop - Mike Edwards (Midhurst) and Andy Davidson (Camberley).** Pelham-Clinton Building, Dinton Pastures Country Park, Davis Street, Hurst, Reading, RG10 0GH. 10:30-16:00. Bookings and Contact: Tel: 0118 932 1402, or Ian McLean, 109 Miller Way, Brampton, Huntingdon, Cambs, PE28 4TZ, (ianmclean@waitrose.com) or www.benhs.org.uk

8 **BENHS Annual General Meeting and Presidential Address.** RES(QG), 6pm onwards. Contact: Ian McLean, 109 Miller Way, Brampton, Huntingdon, Cambs, PE28 4TZ, (ianmclean@waitrose.com) or www.benhs.org.uk

8 **ZSL: Scientific Debate – Clonong Endangered Species: Does this solve conservation problems or create new ones?**

9-12 **Field Studies Council: Fauna of Sediment Shore.** Dale Fort. Contact: http://www.field-studies-council.org/leisurelearning/2005/courseinfo.aspx?id=383

11 **ECSS: Cousins to the Insects - Many Legged Beasts – Tony Barber.**

13 **BENHS Open Day at Dinton Pastures.** Contact: www.benhs.org.uk or Tel: 0118 932 1402

15 **LCES Indoor Meeting – Bumblebee Identification .** Frodsham Community Centre, Fluin Lane, Frodsham. 7:30pm start. Contact: Ian Smith, tel: 0161 427 3887. Email: ifsmith@onetel.com or Bob Letsche, email bob.letsche@blueyonder.co.uk

18-20 **Dipterists Forum Spring Workshop – Craneflies.** Preston Montford Field Studies Centre, Shrewsbury. Contact: Dave Heaver, 5 Albert Road, Ledbury, Herefordshire, HR8 2DN. Email: mailto:david_h@tiscali.co.uk

19 **BENHS Workshop at Dinton Pastures: Staphylinidae identification workshop - Mike Edwards (Midhurst) and Andy Davidson (Camberley).** Pelham-Clinton Building, Dinton Pastures Country Park, Davis Street, Hurst, Reading, RG10 0GH. 10:30-16:00. Bookings and Contact: Tel: 0118 932 1402, or Ian McLean, 109 Miller Way, Brampton, Huntingdon, Cambs, PE28 4TZ, (ianmclean@waitrose.com) or www.benhs.org.uk

25-28 **Field Studies Council: Identifying Stoneflies and Mayflies.** Preston Montford. Contact: http://www.field-studies-council.org/leisurelearning/2005/courseinfo.aspx?id=458

**April**

4-9 **Field Studies Council: Spring Highland Moths.** Kindrogan. Contact: http://www.field-studies-council.org/leisurelearning/2005/courseinfo.aspx?id=528

6 **RES Water Beetle Special Interest Group.** 41 Queen's Gate, London SW7 5HR. Contact Prof. Garth N. Foster, 3 Eglinton Terrace, Ayr KA7 1JJ, Scotland. Email: latissimus@btopenworld.com

8-10 **Butterfly Conservation 5th International Symposium** "Lepidoptera as indicators of biodiversity conservation". Southampton University. Contact: www.butterfly-conservation.org

9 **Biological Recording in Scotland (BRISC) Annual Conference and AGM.** Bute Building, St. Andrews University, St. Andrews, Scotland. Contact: www.brisc.org.uk

9-12 **Field Studies Council: Identifying Bristleworms.** Dale Fort. Contact: http://www.field-studies-council.org/leisurelearning/2005/courseinfo.aspx?id=384

10 **BENHS Open Day at Dinton Pastures.** Contact: www.benhs.org.uk or Tel: 0118 932 1402

12 **ZSL: Scientific Meeting – The Thames Estuary: Awash with biodiversity.**

16 **BENHS Workshop at Dinton Pastures: Ephemeroptera and Plecoptera identification workshop – Richard Chadd (Lincolnshire).** Pelham-Clinton Building, Dinton Pastures Country Park, Davis Street, Hurst, Reading, RG10 0GH. 10:30-16:00. Bookings and Contact: Tel: 0118 932 1402, or Ian McLean, 109 Miller Way, Brampton, Huntingdon, Cambs, PE28 4TZ, (ianmclean@waitrose.com) or www.benhs.org.uk

19 **LCES Indoor Meeting – Digital Photography – a simple approach.** Frodsham Community Centre, Fluin Lane, Frodsham. 7:30pm start. Contact: Ian Smith, tel: 0161 427 3887. Email: ifsmith@onetel.com or Bob Letsche, email bob.letsche@blueyonder.co.uk

20-28 **Taxonomy and biology of parasitic Hymenoptera.** Imperial College Natural History Museum training course at Silwood Park. Contact: http://www.nhm.ac.uk/entomology/hymcours

24 **BENHS Open Day at Dinton Pastures.** Contact: www.benhs.org.uk or Tel: 0118 932 1402

27 **Riverfly Identification and Monitoring Workshop.** Brecon, Wales. Contact: Bridget Peacock, Tel: 0207 942 5932, Email brip@nhm.ac.uk

28 **Riverfly Identification and Monitoring Workshop.** Brecon, Wales. Contact: Bridget Peacock, Tel: 0207 942 5932, Email brip@nhm.ac.uk

30 **Ecology & Entomology.** Crane Park Island LNR. Ian McKinnon. Meet Whitton Station 10.00 NR from Waterloo 09:27. Bring lunch.

**May**

1-4 **Field Studies Council: Marine Plankton.** Dale Fort. Contact: http://www.field-studies-council.org/leisurelearning/2005/courseinfo.aspx?id=385

8 **Ecology & Entomology.** Syon Park TQ169762. Spider hunt on Duke of Northumberland's private estate. Edward Milner. Meet Syon Lane Station. 10:30. NR from Waterloo (09:57). Bring Lunch. Wellies advisable.

6-8 **Field Studies Council: Water Beetles.** Preston Montford. Contact: http://www.field-studies-council.org/leisurelearning/2005/courseinfo.aspx?id=460

6-9 **Field Studies Council: Between the Tides.** Slapton Ley. Contact: http://www.field-studies-council.org/leisurelearning/2005/courseinfo.aspx?id=507

**8** **BENHS Open Day at Dinton Pastures.** Contact: www.benhs.org.uk or Tel: 0118 932 1402

**8** **ZSL: Scientific Meeting – Animal Invasions.**

**13-16** **Field Studies Council: Finding and Identifying Caddis.** Preston Montford. Contact: http://www.field-studies-council.org/leisurelearning/2005/courseinfo.aspx?id=462

**13-16** **Field Studies Council: Surveying Invertebrates for Biological Recording.** Flatford Mill. Contact: http://www.field-studies-council.org/leisurelearning/2005/courseinfo.aspx?id=50

**27-3 Jun** **Field Studies Council: Butterflies and Moths.** Castle Head. Contact: http://www.field-studies-council.org/leisurelearning/2005/courseinfo.aspx?id=377

**30-3 Jun** **Field Studies Council: Moths.** Kindrogan. Contact: http://www.field-studies-studies-council.org/leisurelearning/2005/courseinfo.aspx?id=547

**30** **Ecology & Entomology.** Yeading Brook Fields and Islip Manor (optional) LNRs. Neil Anderson. Meet 10:30 Junction of Greenway/Ayles Road TQ104825. E9 bus from Ealing Broadway. Bring lunch. Some cars needed to travel between sites.

**June**

**10-12** **Field Studies Council: British Dragonfly Society Weekend.** Juniper Hall. Contact: http://www.field-studies-council.org/leisurelearning/2005/courseinfo.aspx?id=418

**12** **BENHS Open Day at Dinton Pastures.** Contact: www.benhs.org.uk or Tel: 0118 932 1402

**17-19** **Field Studies Council: Introducing Invertebrates.** Preston Montford. Contact: http://www.field-studies-council.org/leisurelearning/2005/courseinfo.aspx?id=491

**17-20** **Field Studies Council: Identifying Bumblebees.** Flatford Mill. Contact: http://www.field-studies-council.org/leisurelearning/2005/courseinfo.aspx?id=351

**18** **LCES Outdoor Meeting – Insect Safari.** 10.00am to 4.00pm, Anderton Nature Park (& Boat Lift), Northwich, Cheshire. Contact: Paul Hill, email: pmh@biota.co.uk

**19** **Ecology & Entomology.** Ashtead Common NNR. Beetles. Roger Booth and Lizzie Worth (Ranger). Meet 10:00 Ashtead Station. NR from Waterloo (09:15) or Victoria (09:06). Bring lunch. Check trains for any late schedule changes.

**24-26** **Field Studies Council: Identifying Dragonflies and Damselflies.** Flatford Mill. Contact: http://www.field-studies-council.org/leisurelearning/2005/courseinfo.aspx?id=352

# Book Reviews

## *Butterflies of Europe*

A new field guide and key by Tristan Lafranchis. Published in 2004 by Diatheo, 35 rue Broca, 75005 Paris, France. Price: £24, including p&p. Sterling cheques made out to 'Diatheo'.

I am always excited when a new book on European butterflies comes out. In 1997, we had *Tolman's field guide* which introduced species that many of us had never heard of before. In 2002, the *Distribution Atlas of European Butterflies* by Kudrna gave us a baseline and helped to correct misleading maps in previous field guides. Now, Tristan Lafranchis' new book focuses on identification. In fact, it makes the claim that "identifying butterflies is easy". This may be true in Britain where we have only one species of Grizzled Skipper. If you travel to the Alps and the Mediterranean, there are over 20 to choose from – and they all look more or less alike.

Being able to put a name to a flower, a bird or a butterfly is satisfying, but can also help to extend our knowledge about the conservation requirements of species and flag up changes in status. Of course, we should be putting the correct name to the creatures we see! If you want to do this for butterflies, then you need this book.

The approach to identification in *Butterflies of Europe* is to use photographs, mainly by British photographers, and arrows to point out distinguishing features. I found this particularly helpful. Trying to visualise remarks in a paragraph of text such as "discocellular vein present in hind wing" has always been difficult for me. A short piece of text and distribution map accompanies the photograph for each species.

Another new feature for a European field guide on butterflies is that the text is arranged in the form of a key, whereby species are separated by their distinguishing features. This system was used by Tristan Lafranchis in his book *Les Papillons de jour* on butterflies of France, Belgium and Luxembourg, published in 2000. The drawback of a key is that you already need to have a fair amount of technical knowledge to work through it and avoid wrong turnings. I tried it with my own photograph of a heath fritillary and ended up with a meadow fritillary. On the plus side, working through the key with another butterfly, I arrived unexpectedly – and gratifyingly – at Freyer's grayling.

The author asserts that all European butterflies can be identified in the field and alive, even if you have sometimes to catch them and temporarily put them into a transparent-topped box for close examination. He contends that "these creatures are really much nicer seen on a flowery slope than put in a line in a cabinet drawer". Let's hope the widespread use of his field guide will help make his wish come true.

David Withrington (7110)

## *Microlepidoptera of Europe, Volume 5, Momphidae s.l.*

by J. C. Koster and S. Yu. Sinev. 387 pp. 15 colour plates illustrating 160 species. 123 pages of genitalia diagrams, line drawings and distribution tables. Published by and obtainable from Apollo Books, Kirkeby Sand 19, DK-5771, Stenstrup, Denmark. www.apollobooks.com. for DK 720.

This is volume 5 in this series of books and continues the format and layout of previous volumes. The quality of both the binding and paper are very good and the book can be expected to last for a long time. For many years the name Momphidae was used to group together the species of 'narrow-winged moths' that did not fit comfortably in existing families. The classification used in the book represents the latest view of taxonomists, which is that the group should be separated into the following six families: Momphidae, Batrachedridae, Stathmopodidae, Agonoxenidae, Cosmopterigidae and Chrysopeleiidae. In all 163 species including ten new to science are described.

The introduction has an interesting section on the history of this disparate group, together with notes on collecting methods and preparing genitalia. The checklist of European species is particularly useful when comparing the text with descriptions in older literature. Each of the six families has a general introduction covering the morphology of adults and early stages, often in some detail. There follows a section on general biology that includes notes on habitat, host plant families and specialised behaviour when appropriate. Short sections on distribution and systematics together with generalised diagrams of wing venation are included. Finally, annotated diagrams of generalised genitalia are also included, these are very useful as the genitalia can vary considerably between families. The species descriptions include more details than other volumes in the series. Depending on the species, feeding and collecting hints and high quality line drawings of leaf mines or galls are occasionally included. These extra details are very welcome although they add to the size and cost of the book.

Each species is allocated an exclusive number rather like the Bradley and Fletcher number used in the UK. This number is used throughout the book to refer to that particular species in the different sections, namely the checklist, description, colour plates and both sets of genitalia drawings. The colour plates are labelled only with the species number and name, not as 'Plate 1', 'Plate 2' etc. The same method is used for numbering the male and female genitalia diagrams. For example, the common *Mompha epilobiella* is species number 12. Once you know this it is easy to find the illustration of the adult on the plates, male and female genitalia and so on. To keep things clear the full name is always quoted along with the number. Although this is a relatively small change, and first seen in an earlier volume of this series, it makes looking up the separate parts of a description much easier.

For difficult genera identification keys are sometimes used. Although the text is fairly clear, the layout is forced into a table of three columns, which makes it look very odd. A horizontal line is used to separate the two options in a couplet, but as this line has the same weight as that which separates one couplet from the next the eye can easily jump to the wrong line. As only three or four short keys are used this does not detract from the usefulness of the book.

Distribution information is in the form of a table and, although the authors have grouped adjacent countries together as far as possible, a table does not give a good impression of the distribution of a species. In fairness this section is called the Distribution catalogue and is perfectly adequate for checking the list of countries from which a species has been recorded. The genitalia drawings are excellent and alone are worth the cost of the book. They are large, clearly drawn and complete. They represent a clear improvement on earlier volumes where, in some cases, only the diagnostic features were shown, or photographs of slides were used. The text description clearly lists the differences between similar species and these are highlighted with arrowheads on the drawings.

For studying just the British species Volume 4(1) of *Moths and Butterflies of Great Britain and Ireland* usually has more information, especially on the early stages. However, as most entomologists will know, it is much easier to separate difficult species if you can compare descriptions and illustrations from several books, rather than rely on just one. There is also the possibility of turning up new species to the UK and for these two reasons this book is highly recommended to the serious student of the 'narrow-winged moths.'

Colin Hart (3845)

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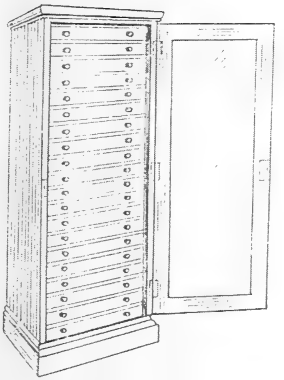

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# AES Publications

Amateur Entomologists' Society

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**AN INDEX TO THE MODERN NAMES FOR USE WITH J W TUTTS PRACTICAL HINTS FOR THE FIELD LEPIDOPTERIST *by B.O.C. Gardiner***
A valuable cross referencing guide between the scientific and English names used in the early 1900's and the present time .... **£ 4.00**

**A LEPIDOPTERISTS HANDBOOK *by R.Dickson***
A practical book on the breeding, collecting, storing, conservation and photography of Lepidoptera. ..... **£ 7.70**

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A concise guide on the type/construction of moth traps available in the UK, their use and limitations in the field ..... **£ 5.20**

**BREEDING THE BRITISH BUTTERFLIES *by P.W. Cribb***
A practical handbook covering all aspects of butterfly breeding, including general techniques, equipment plus hints on how to breed British butterflies ..... **£ 4.10**

**AN AMATEURS GUIDE TO THE STUDY OF THE GENITALIA OF LEPIDOPTERA** (16pp.) ..... **£ 2.40**

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**THE HYMENOPTERISTS HANDBOOK *by Dr. C. Betts et. al.***
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**REVISED FLIGHT TABLES FOR THE HYMENOPTERA**
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**REARING PARASITIC HYMENOPTERA *by M. Shaw***
This booklet provides details on the general biology of parasitic wasps, rearing principles, efficient rearing practices and detailed methods on how to deal with adult wasps ..... **£ 4.60**

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A practical handbook for the beginner and initiated on collecting, breeding and studying two-winged flies, includes a detailed chapter on larval stages, with an illustrated key to families ..... **£ 10.75**

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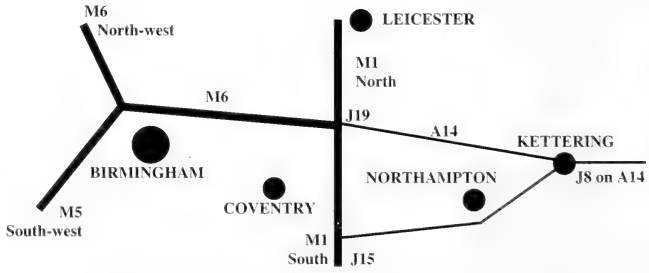


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# *Saturday, 23rd April, 2005*

**at the Royal Entomological Society**
**41 Queen's Gate, London SW7 5HR**

**PROGRAMME**

| | |
|---|---|
| **).30 am** | Doors open for members to sign in. Tea and coffee will be available. Coats may be left in an unsupervised cloakroom area at your own risk – the AES will not accept liability in case of a problem occurring. |
| **.00 am** | Welcoming address, followed by a lecture. |
| **2.00 noon** | The Annual General Meeting will take place. Nominations for election to the Society's Council or as a Serving Officer of the Society should be forwarded to the Secretary along with the names of two nominators who should be members of the Society. |
| | The AGM will be followed by a break for lunch. |
| **00-4.00pm** | Two further lectures.<br>Members' Day will end between 4.00-4.30pm. |

RES is in close proximity to the Natural History Museum so you may combine your day with a to both the AGM and museum.

RES have no restaurant but there are many restaurants and pubs close by in Kensington.

ortunately there are no facilities to enable us to run separate events for Bug Club members.

mbers will be able to view the various AES publications currently available and place an order.

## HOW TO GET TO THE ROYAL ENTOMOLOGICAL SOCIETY

**Bus Routes**
9, 10, 49, 70, 207

**Underground**
Gloucester Road and South Kensington stations.
Piccadilly, District and Circle lines serve both stations.

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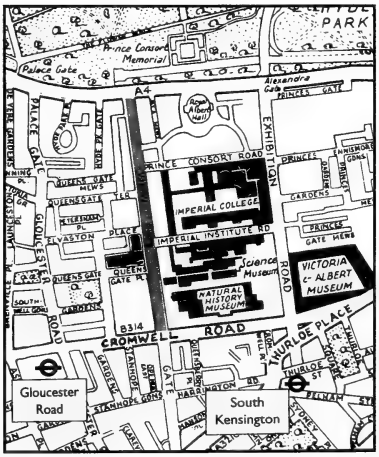

The Bulletin
of the Amateur Entomologists' Society

Volume 64 • Number 458 February 2005

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# The Bulletin

## of the Amateur Entomologists' Society

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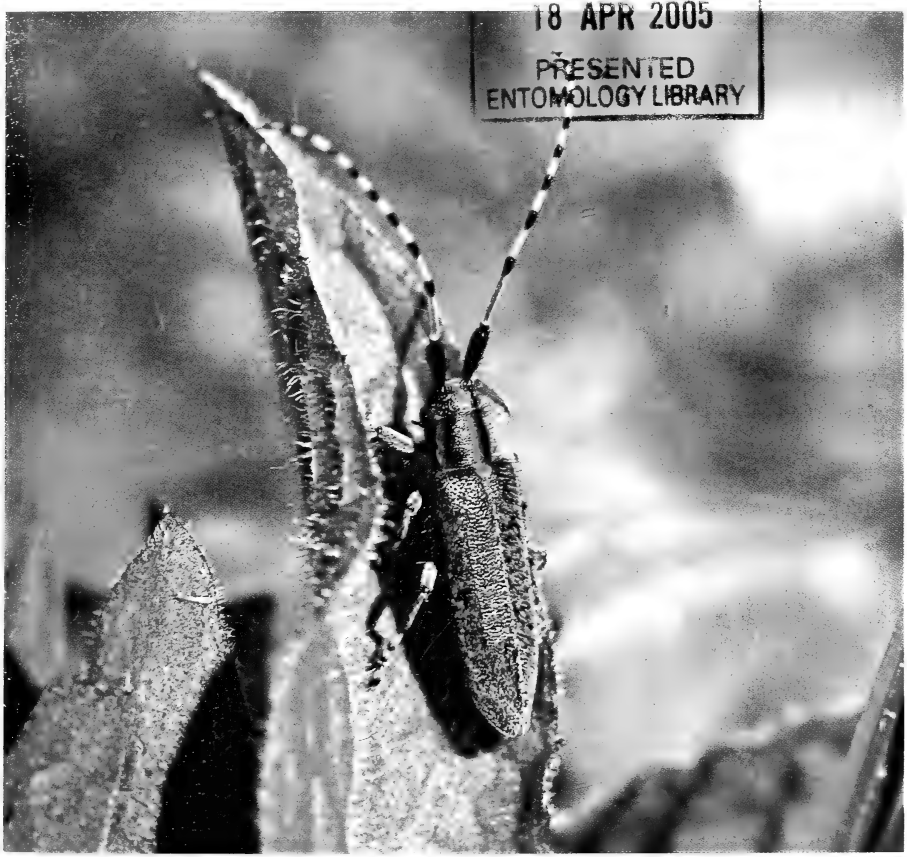

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The Amateur Entomologists' Society

Founded in 1935

**The AES • P.O. Box 8774 • London • SW7 5ZG**

**http://www.amentsoc.org**

## Officers of the Society



***SUBSCRIPTIONS:***

First subscriptions should be accompanied by an additional £2 entrance fee, except for Bug Club members under the age of 13 to which this charge does not apply.

***Renewal charges***

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| Ordinary | £17.50 | Ordinary Overseas | £21.00 |
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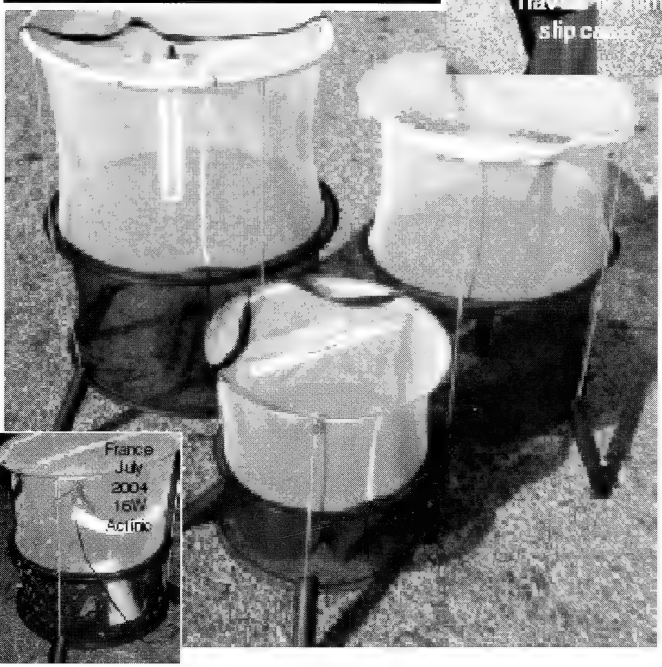

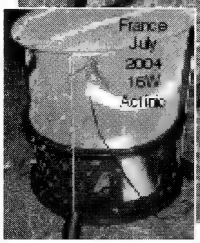


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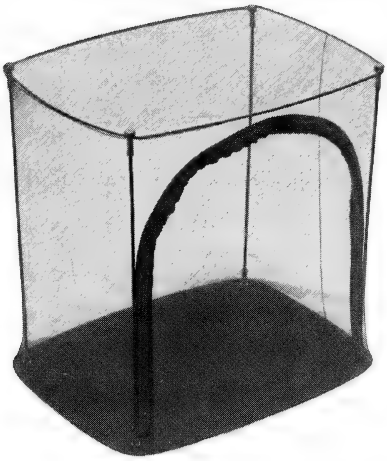

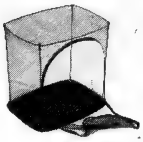

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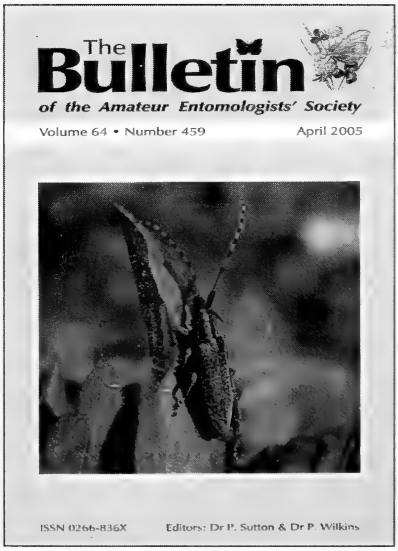
# The AES BUG CLUB

**Do you want to cuddle a Cockroach, stroke a Stick Insect or hug a Harvestman?**

The AES Bug Club is for young people or the "young at heart" who find insects and other creepy crawlies interesting and even fascinating.
As the junior section of the AES we are devoted to promoting invertebrates to the younger generation who, afterall, will be the entomologists of tomorrow! You can help us in a number of ways, for example: by joining the Bug Club yourself, getting someone else to join the Bug Club, promoting the Bug Club and AES to your local school/Scout or Guide Group etc, running a Bug Club event or writing an article for our exciting newsletter. If you can do anything to help then please write to us: **AES Bug Club, PO Box 8774, London, SW7 5ZG**. Membership details can be found in the front of this Bulletin.




## Bulletin Cover

The cover picture for this issue shows a specimen of the Longhorn beetle *Agapanthia villosoviridescens* De G. (Coleoptera: Cerambycidae). The larvae of this relatively large (12–18 mm) and impressive beetle, which has a distinctly south-eastern distribution in England, develop in the stems of thistles and Hogweed *Heracleum sphondylium*. In older accounts (e.g. Joy) this species was considered to be a great rarity, and even as late as 1987, was described by Hickin as "rare". It experienced an expansion phase from the late 1980's until the Millennium, but a recent paucity of data after a run of cool wet Springs suggests that it has retrenched somewhat to former strongholds.

Photograph: Peter Sutton (Fujichrome Provia 100ASA slide film)

The Bulletin
of the Amateur Entomologists' Society

Volume 64 • Number 459 April 2005

## Editorial

It is a privilege to be able to put together a *Bulletin* containing such a diverse, informative and entertaining selection of articles, complete with outstanding contributions for the colour section. It is also, after the grossly mistimed December issue, and with the well-measured words of an old lecturer still ringing in my ears*, something of a relief to get the April edition out *before* the AGM in order to tell you about our line-up of speakers.

Last year we were treated to a trio of talks by Richard Jones, Peter Kirby and Peter Harvey on the remarkable invertebrate fauna of our increasingly threatened Brownfield sites, with particular reference to those that are imminently destined for housing development in the Thames Gateway. I was particularly pleased that Peter Kirby questioned whether or not it would be better to build on some of our hallowed Greenbelt land (which is much beleaguered in terms of its biodiversity) instead of Brownfield sites, some of which are so rich in life that they have been referred to as "Britain's Rainforest."

Richard Jones extolled, among other interesting topics, the virtues of "brown roofs" and Peter Harvey spoke of the important assemblage of species on Canvey Island. Our first speaker this year, Matt Shardlow, will be taking up both of these issues in his talk: "Putting the backbone into invertebrate conservation". Quickly glossing over the middle speaker, our final speaker is well-known entomologist and ladybird expert, Dr Mike Majerus, who will be delivering an intriguing talk on "Extraordinary sex amongst the insects"! We look forward to seeing you at the Royal Entomological Society in South Kensington on Saturday 23rd April if you can make it.

Finally, and on that RES note, sincere thanks to Nick Holford, whose considerable efforts on behalf of the Society mean that we, as AES members, may now attend RES meetings and use that wonderful oracle of entomological history, the RES library.

**Peter Sutton**

* "Right, now here's the rub Sutton, this assignment is due in by the end of April, which gives you approximately three weeks to leave it until the last minute."

# The AES and RES are pleased to announce . . .

*by Nick Holford, AES Registrar*

Over the past year I have been having meetings with the Registrar of the RES (Royal Entomological Society) with a view to forging closer links between the two bodies.

**The Aim** of the closer links between the AES and the RES is to provide entomological facilities across the entire spectrum of knowledge and interest so that the field of entomology is accessible to all (beginner to senior professional). **Within this, the two societies will retain their separate identities but become formally affiliated to each other.**

Agreements have been reached and formal agreements of Affiliation drawn up. These are now in the process of being signed by Officers of both Societies. The RES regular publication is called *Antenna* and contains articles, notices, Library details etc. eight areas for attention were drawn up, and agreements reached, as follows:

### 1) Meetings

AES and RES members may attend the meetings of the other society. The AES currently has two meetings per year:

a) The Members' Day in April (including the AGM). The list of lectures for this will be circulated to RES members in *Antenna* in advance.

b) The Exhibition on the first Saturday in October. This is open to all on payment of the entrance fee. The list of RES monthly meetings will be published in the AES *Bulletin* in advance. Probably, notification will be as separate flyer(s) as necessary.

c) AES members may attend the RES Symposia at the same prices as RES members. Details of the forthcoming one, *Ent05*, may be obtained from the Registrar. It is an international symposium on Insect Conservation Biology and is being held at Sussex University 12th-14th September 2005.

### 2) Internet facilities

The two societies currently provide links to each other's websites, but these links will be made far more prominent and on the Home Page in each case.

### 3) Publications

a) It is hoped that the two societies will work together on the production of new publications, and in the development of more

user-friendly versions of current RES publications, particularly with reference to identification of specimens. In hand with this, the AES Registrar and AES General Editor will attend meetings of the RES publications committee that concern the *Handbooks for Identification of British Insects.*

b) Also, to look at the potential for the production and marketing of other items of entomological interest.

**4) RES Library**

a) AES members will be allowed access to all the facilities of the RES library under the same terms and conditions as RES members. This will include the borrowing of books. It is recognised that Journals cannot be removed from the Library, but relevant photocopies may be obtained at the current rate applicable to RES Fellows.

b) AES members must follow the terms and conditions of the RES Library. These are listed below and will be published in the *Bulletin* regularly.

c) Wherever possible AES members should notify the RES library beforehand of their intention to visit. This may be done by phone, email or letter. If no notification is made there will be a risk that the Librarian may not be available. (The same recommendation is made to RES members).

d) These facilities will apply to current members, so it will be important for AES members to keep their subscription status up to date as both Societies will exchange confidential membership lists and updates as available in order for the various agreements to be implemented. The AES will provide specific lists to RES members on request and on the same terms as they are supplied to AES members.

**5) The AES Bug Club**

Please note that for this section, the interest spectrum will include a range of other invertebrates particularly worms, all arthropods and molluscs.

a) The AES Bug Club exists to provide for the needs of children up to the age of 13, and older ones as requested (and adults who prefer the style, or need the BCM for teaching purposes.)

b) Ownership of the Bug Club will remain with the AES at present, but the RES will have an increasing influence over it and provide help and advice wherever possible.

c) The RES will assist with the seeking of commercial sponsorship for the Bug Club in order to allow it to expand its facilities and provisions, whilst not losing sight of its aims.

**6) Teaching Materials for schools**

a) The two societies, jointly, will try to develop suitable materials for use in schools for the teaching of parts of the National Curriculum relevant to our interest areas. Any AES members who would like to be involved in this are asked to contact the AES Registrar.

b) There will be wider discussion on the penetration of the Educational field for Bug Club related teaching materials.

**7) National Insect Week –** the AES will continue to play a very significant role in all future NIWs.

**8) Future AES style Exhibition in the north –** discussions are in their infancy, but it is hoped that such an event may be set up in order to prove our commitment to the more northern parts of Britain.

Areas 4 and 6 above are probably of immediate concern to AES members, particularly 4, the use of the RES Library. This library is one of the finest entomological libraries in the world and access to it should be of great benefit to AES members.

Also, it will be of great benefit to amateurs for versions of the RES *Guides to Identification* to be produced. Again, any AES members who would like to be involved in this are asked to contact the AES Registrar via the PO Box.

***The Royal Entomological Society – Rules of the Library***

The Library is open to Fellows and Members (hereafter described as Fellows) of the Royal Entomological Society and members of the Amateur Entomologists' Society under the same set of rules. The Library is open from Mondays to Fridays, 09.30 to 5.00p.m., it is not open on Saturdays, Sundays or Public Holidays. Any changes to the following rules of the Library will be announced in the *Bulletin* whenever possible. The Library services listed can be requested and dispatched by telephone, fax, post, e-mail or courier, as appropriate.

**AES Members may:**

a) Use the RES library facilities for research and private study.

b) Borrow books from the library, subject to five items at any one time and subject to the items not being marked as 'Reference Collection'. Books sent through the post must be returned by recorded delivery.

c) Renew any items required beyond the standard loan period of one month, subject to their not being required by another Fellow/Member or the Librarian.

d) Photocopy items held in the library, subject to the provisions of copyright law. A completed and signed copyright declaration form (available from the Librarian) will be required for all photocopies. A charge for photocopies made will be levied at the current rate.

e) Request photocopies and book loans from other libraries through the RES Library and/or its inter-library links, subject to the Librarian's time constraints.

f) Obtain a literature search on any entomological subject using the facilities available in the Library, subject to the Librarian's time constraints.

g) Download or print searches from the library's CD-ROM materials or the CAIRS database, subject to arrangement with the Librarian on each occasion.

h) Ask the Library staff to keep them informed of articles appearing in particular fields of interest, when contents pages would be sent to the Fellow/Member from selected journals.

**The Librarian may:**

a) The Librarian may insist on the immediate return of any book, at any time, at the borrower's expense.

b) The Librarian will invoice Fellows/Members for postage or other carriage charges incurred by the Society on their behalf.

c) The Librarian will invoice Fellows/Members for the full cost of the loss of or damage to the Society's property, or the property of other institutions borrowed on their behalf, while it is in their care; normal and reasonable wear and tear excepted.

d) The Librarian has the right to ***refuse*** the loan of any item, for reasons of high demand or special value.

e) The Librarian has the right to decline to photocopy – or allow photocopies to be made of any reference, for reasons of length, wear and tear of the original, or compliance with copyright law.

f) Insist that a Fellows/Member leave the library at closing time, or at any time for smoking or disturbing other users or Society staff.

g) Report to the Council any Fellow/Member failing to observe the rules of the Library.

I am certain that AES Members will agree that this Affiliation means that between the two societies the full range of entomological interest is

covered. Also, it is to the benefit of all members, and to the benefit of Entomology as a whole. If any members have any comments, please feel free to write to the Registrar at the PO Box address, or to his home address. I feel that I must add that negotiations are continuing with reference to other areas for co-operation and if any members have any comments on this, please feel free to write to the Registrar at the PO Box address, or to his home address.

RES details:
Royal Entomological Society
41 Queen's Gate, London SW7 5HR
Tel: 020 7584 8361 • Email: lib@royensoc.co.uk • www.royensoc.co.uk

## Insect

What can you know of insects and their kin,
if you have never tried to learn their ways,
or let their subtle forms inspire your praise?
Our time is short, so let us now begin
to make amends, to still our groundless fears,
roll back back the cultured habits of disdain
and learn, for in our learning is our gain,
of those who live as seconds to our years.
Whose bodies are so small we often fail
to notice them at all, much to our cost,
for beauty never seen is beauty lost,
and their's is wondrous in its fine detail
although, at times it's often hard to see,
it is, and always has been, there for free.
It would be better were we more aware
that they exist, for we depend on them,
much like the leaves of trees require the stem,
yet were we gone, there's few of them would care
or note our passing with the slightest fuss
for we, despite our self important airs,
contribute little to this world of theirs,
while their departure would mean death for us.
Might we be wiser then, were we to find
for them, and soon, before it is too late,
instead of fear, of pesticides and hate,
some dawning of respect for insectkind;
and in so doing learn to understand,
with peace and joy, to share this precious land.

**Gordon Ramel**

# Quiet songster of the woods – The New Forest Cicada

*by Bryan J Pinchen (11312)*

*Co-ordinator, New Forest Cicada Working Group,*
*7 Brookland Close, Pennington, Lymington, Hampshire, SO41 8JE.*

The New Forest Cicada *Cicadetta montana* Scopoli, was first recorded from Pennington Common on the southern edge of the New Forest, Hampshire in 1812. This first discovery by local collector Daniel Bydder eventually led to a string of records spanning 150 years and covering a number of localities in the New Forest. Despite this, the cicada has always been something of a rarity in the New Forest, being sporadic in presence and numbers and difficult to survey and record.

Cicadas belong to the Hemiptera family of true bugs, closely related to the more familiar aphids, leafhoppers and froghoppers. They are famous for being noisy, living underground for long periods, and suddenly emerging *en masse* for a few days in early summer. While this is true of many global species, our species differs on two counts; firstly, the song is quiet and inaudible to all but the most observant (and youngest) naturalists and secondly, large emergences have been rarely recorded or witnessed in the New Forest.

The cicada has always been a rare insect in the New Forest, with few regular sightings and long time periods with no sightings at all. Following the original record from Pennington, the cicada was found in scattered localities in the New Forest into the early 20th century until what appeared to be one of the last records in 1941. A new locality for the species was discovered in 1864 when a specimen was taken in woodland at Haslemere, Surrey. Further sporadic records came from Surrey woodlands including three specimens in 1896 and a final record in 1936.

In 1962 M Clifton, J A Grant and P S Broomfield discovered a colony in the northern part of the New Forest. This colony was large and estimated to number in excess of 100 singing males, nearby, a smaller population was discovered in a small clear-felled forestry Inclosure*. This colony became the focus of a long term study by Jim Grant from 1963 until his untimely death in 1990. Much of the following information is based on the extensive observations by Jim Grant.

Throughout the time Jim Grant studied the species the cicada was declining in the original 1962 and 1963 locations, but still being recorded occasionally from other New Forest woodlands. No breeding

* forest Inclosures are areas which have been fenced to protect the growing timber from grazing by domestic forest livestock e.g. cattle and ponies.

sites, other than the study site were ever located. The final confirmed record of the species in recent times was in 1993.

To date the cicada has been recorded from 26 localities in the New Forest with proof of breeding being only known from one modern locality.

**Life cycle**

To begin the life story, we will start in late March in an open glade in a New Forest woodland Inclosure. At this time, the larval nymphs which are preparing for their journey into the adult world construct small structures, known as 'turrets' above the soil surface. The exact purpose of these in unknown but is thought to relate to thermoregulation – a means of testing to see if the above ground temperature is high enough for emergence. These turrets are like small mud chimneys and vary in height and width. Some may be little taller than 1 cm, while others may be large, taking on the appearance of a 'Walnut Whip'. Turrets are usually constructed of mud with grass stems and leaves often incorporated. The inside of the turret is hollow and smooth-sided, enabling the nymph to move freely between its subterranean burrow and the turret tip. As the weather becomes consistently warm in mid May, the nymph will remove the top of the turret, and crawl from the ground onto nearby vegetation. Here the transformation to adult is completed, rather like the ecdysis of a dragonfly, the nymphal skin splits down the back and the adult cicada struggles free before crawling into a sheltered, sunny position amongst the vegetation. After a period of a few hours drying and hardening itself in the morning sunshine the cicada is ready to begin the shortest, but most active period of its life.

Adults emerge on sunny days from mid May through to mid June. They spend most of their time in low scrub and vegetation, feeding on plant sap using their needle-like proboscis. Males will find a sunny position amongst the foliage and sing, in the hope of attracting a mate. Song is a quiet trilling warble produced inside the thorax. Here a drum membrane is clicked in and out by a pair of structures known as tymbals. Two types of song are produced, a locating song and a courtship song. The locating song has one or two short warm-up chirrups of two to three seconds duration. The courtship song can last for many minutes, beginning quietly before rapidly rising in speed and pitch. It is best described as a faint, high-pitched ringing buzz produced in the range 4-16 kc/sec. The song most resembles that of Roesel's Bush-cricket *Metrioptera roeselii*, which sings much later in the season

and in different habitat. To most persons over the age of 40 the cicada song is inaudible but to younger persons with good hearing, it can be detected over distances of 50m or more. The cicada sings at a time when no orthopterans are usually adult, with only slight overlap at the end of the song period (early July) with early singing Wood Crickets *Nemobius sylvestris* or perhaps one or two grasshopper species. A bat detector modified for hearing Orthoptera can detect cicada song when set at 10-12 kHz frequency. Compared to other cicadas and all the Orthoptera, the cicada really is the quiet songster of the woods.

Song is typically only produced when the temperature is above 20°C and there is only slight or minimal cooling breeze. Males usually remain motionless when singing, but in hot conditions may move freely amongst foliage and even fly when singing. Females fly to the singing males and copulation takes place around the song post, mating may last for minutes or hours. Most adults will only live for two to four weeks and by early July the adult stage is finished.

After mating, females search for suitable oviposition sites, these are usually in pencil-thick plant stems, ranging from herbaceous perennials to Bracken *Pteridium aquilinum* and small trees and bushes. Eggs are laid in two parallel rows just beneath the bark, in cross section scars left by egg-laying cicadas show a distinctive 'W' shape within the wood. Females may carry up to 600 eggs or more, but are unlikely to lay all of these, often laying in the region of 200-300 eggs.

Oviposition in the New Forest has been observed on only a limited number of plant species, but these include Bracken, Oak *Quercus robur* and Birch *Betula* spp. Eggs hatch after 50-125 days depending on the temperature range experienced. Eggs laid nearer the ground, for example in stems of seedling trees, hatch more quickly than do those laid higher up. After hatching, the small pink, flea-like nymphs find their way to the ground and enter the soil through cracks in the surface. Once underground, they seek out plant roots and begin to feed from the xylem fluids. It is known that Purple Moor-grass *Molinia caerulea*, is used by early nymphal instars as a food source, but the later nymphal stages are poorly known. Nymphs may burrow up to 30 cm beneath the surface to feed on larger roots as they become older, it is likely that the roots of a range of tree and shrub species may be used at this stage. The poor nutritional value of the food source results in cicada nymphs spending a long period beneath ground. In the UK this could be anywhere between six and ten years during which time the nymph will moult five or six times before ecdysis to adult.

**Habitat and threats**

The New Forest Cicada is an inhabitant of warm, open sunny glades and woodland rides, preferably south-facing and sloping to ensure maximum warmth. In the New Forest they occupy the successional habitat between open heath or grassland and scrubby woodland. A structured and mixed ground flora of herbs is essential and provides arboreal oviposition sites and subterranean food resources for developing nymphs. Small seedling bushes and scrub provide additional oviposition sites, while larger bushes provide song posts for males. Densely grown timber blocks and heavily grazed sites are wholly unsuitable to all stages of the life cycle. At the site in the New Forest where the species was studied for almost thirty years the glade had been clear-felled some ten years prior to the cicadas' discovery, the vegetation was typical of early successional woodland with rough low vegetation; Ling *Calluna vulgaris*, Bracken and Gorse *Ulex europaea*. In the New Forest it is likely that cicadas colonise clear-fell areas or woodland edge in times of reduced grazing pressure. However, these colonisation sites must be within reasonable dispersal range from breeding sites and need to be present in succession. Traditional woodland coppicing appears to provide ideal colonisation conditions, but modern forestry clearing techniques, resulting in larger clear-fell areas and longer felling periods is largely unsuitable.

One of the biggest recent threats to the cicada is the increase in grazing pressure on the New Forest. At the time when the cicada was rediscovered in 1962 the forest was subject to reduced grazing pressure, many animals grazed off the Open Forest on the surrounding commons, and many were also taken off the land during the winter months. This regime meant that some successional scrub was present on woodland edges and there were herbs and seedling trees and shrubs present to provide oviposition sites. Since the gridding and fencing of the Forest in 1964 animal numbers have increased dramatically and increased numbers remain on the forest throughout the winter months. This has resulted in the forest grassland being heavily grazed to become a single height sward lacking in structural diversity and seedling tree and shrub growth. This loss of structure not only inhibits cicada colonisation through loss of oviposition sites, but research has shown that turrets constructed on the Open Forest suffer 80% mortality during their construction and adult emergence period, while those constructed in the relative safety of a fenced forestry Inclosure suffer only 20% mortality during the same period. It appears to be no coincidence that virtually all modern records of the cicada

have come from within forestry Inclosures, where both varied ground flora structure and reduced grazing are most evident. Recent proposals to remove fences from a number of forestry Inclosures to allow grazing animals access (in the name of conservation!) may spell disaster for the cicada and a whole suite of other invertebrates dependant on lightly grazed sites.

Changes in forestry practices may also have a further effect on the survival of the cicada. Increased mechanisation, increased size of felling blocks and longer felling periods create unsuitable conditions for cicada colonisation. The larger, cooler clearings are largely unsuitable for colonising cicadas due to their exposed nature, the rapid speed with which closely-planted conifers grow may not give a suitable time period for the completion of the underground part of the life cycle. Narrow, heavily shaded woodland rides, a common feature of modern forestry, also provide unsuitable conditions for colonisation and life cycle completion.

**Conservation and the future**

The rarity of the New Forest Cicada and the decline in sightings in the late 1970s resulted in the species being included on Schedule 5 of the Wildlife and Countryside Act (1981), offering the species full legal protection. In 1991 the cicada was included on the English Nature Species Recovery Programme and since that time survey and research has been undertaken by Lena Ward (Mrs Jim Grant) and Bryan Pinchen. Searches at known New Forest sites are undertaken each year, and other nearby sites where the cicada has not been reported, but could conceivably be present. Studies have also been looking into underground temperature ranges to give a better understanding of the requirements of the nymphal stage. The healing process of scarred woody material after cicada oviposition is currently being investigated in the hope that it might enable old oviposition scars to be identified in the field and new colonies found as a result. Links have been established with other cicada workers in Belgium and recently Russia, and eggs have been collected in Belgium for captive rearing studies at Bristol Zoo Gardens. Further captive rearing work is currently planned here during the coming summer.

Searches for singing adults, oviposition scars and pre-emergence turrets continue in a number of locations in the New Forest and I am optimistic that the cicada will once more come to light. I am confident that the species is still present somewhere in the expanse of the New

Forest and would be grateful for any records that may lead to the discovery of a colony.

Cicada records can be sent to the above address or E-mailed to me at: bryan.pinchen@lineone.net

**Acknowledgements**

Survey and research on the New Forest Cicada has been funded by English Nature and Bristol Zoo Gardens. I would like to thank them both on behalf of the New Forest Cicada Steering Group for their financial assistance. I would also like to thank the Forestry Commission for allowing survey and research on their land in the New Forest. Finally, thanks must go to Lena K. Ward for her continued support, encouragement and input to the project, and for allowing photographs by Jim Grant to accompany this article.

## Tips for setting butterflies

*by Darren Jeacock (12342)*

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I have purchased papered butterflies and found them much harder to set and a lot easier to damage than fresh ones. I purchased some tropical butterfly pupae from the Stratford-upon-Avon Butterfly Farm. Unfortunately many of them emerged as adults at more or less the same time and I used all of my pins and setting boards. I contacted Worldwide Butterflies to order more boards. During this telephone conversation, they advised me to put a pin through the thorax, pin them to small pieces of cardboard (e.g. corrugated card from boxes), put them in ice-cream tubs and freeze them. Then, when you have setting board space and the time, thaw them (it takes about two hours) and they will set as well as fresh ones. I had some in the freezer for four to six weeks and set them with no problems. In fact the only problem was domestic hassle as I was told I was using too much freezer space – a small price to pay for good specimens!

I would be interested to hear if anyone else has tried this, and what their results were like. Also, has anyone else any further advice on the problems outlined above?

# Shopping for *Agelastica alni*, the Alder Leaf Beetle: immigrant or newly identified indigenous population?

*by Dr Richard Thomas*

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The Alder Leaf Beetle, *Agelastica alni*, is a common leaf beetle on the Continent, typically found on trees in damp localities such as beside streams and the edges of woods and forests. As its common name suggests, *A. alni* has a predilection for Alder *Alnus glutinosa*. However, it may also feed on Hazel, Sallow, Poplar and Birch (Zahradnik & Chvala, 1989). It was initially classified in the Red Data Book as extinct in the British Isles (Shirt, 1987). This status was then revised to uncertain and a possible immigrant (Hyman & Parsons, 1992). A recent article reported findings from a donated collection of Coleoptera containing some *A. alni* specimens (Lewis, 2004). The specimens were collected from a few scattered locations between the period 1926 to 1958 around Hertfordshire (Chorleywood; Watford; Rickmansworth) and Dorset (Charmouth). It has been suggested by some coleopterists that such specimens are immigrants rather than from an established native population.

On August 14th 2004, a visit to the Trafford Centre, Manchester led to me discovering a colony of violet-blue leaf beetles and their larvae inhabiting Alder trees overhanging a pond at Wilderspool Wood, near the Travel Inn (Figure 1). Photographs were taken of the beetles. Identification from the photographs proved impossible using standard Collins insect guides, and the assistance of experienced coleopterists was enlisted from the Internet. Two names were suggested, both from the leaf beetle Family, Chrysomelidae. These were the Alder Leaf Beetle *Agelastica alni* and *Chrysolina violacea* (Figure 2). *C. violacea* (= *goettingensis*) is 6.5-9 mm and bright violet similar to *A. alni*, but possesses distinguishing red tarsi. Additionally the elytra of *C. violacea* are distinctly ovate whilst *A. alni* has elytra that are dilated at the rear. *C. violacea* is found on calcareous grassland and is associated with Ground Ivy, *Glechoma hederacea*, and bedstraws, *Galium* spp. It is of status Notable B, found south of Yorkshire localised where habitat permits (Linssen, 1959; Joy, 1932; Hyman & Parsons, 1992). The photographic and ecological evidence pointed towards *A. alni* (Plate 2).

Correspondence with Don Stenhouse revealed that he had also taken the species from Manchester in May 2004 and a site in Cheshire in

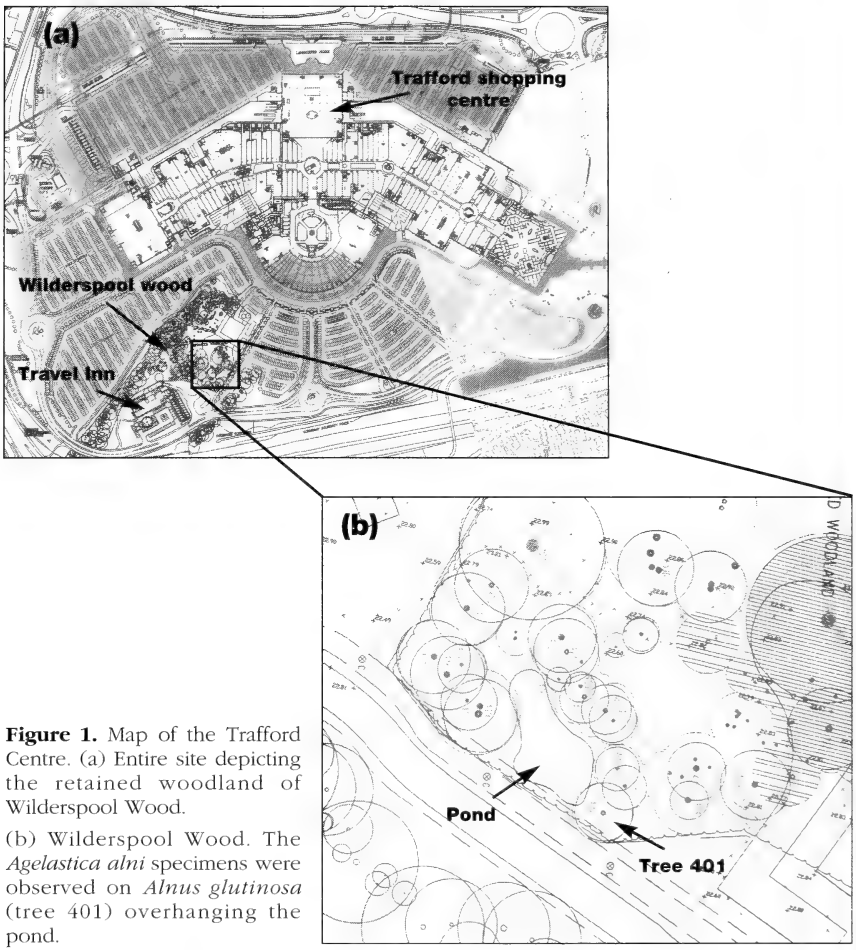


**Figure 1.** Map of the Trafford Centre. (a) Entire site depicting the retained woodland of Wilderspool Wood.

(b) Wilderspool Wood. The *Agelastica alni* specimens were observed on *Alnus glutinosa* (tree 401) overhanging the pond.

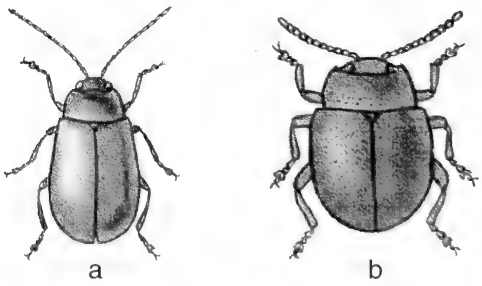


**Figure 2.**
Comparative morphology.
(a) *Agelastica alni*,
(b) *Chrysolina violacea*.

September 2004. Four specimens were compared against museum collections and confirmed as *A. alni*, and also matched the images taken at Wilderspool Wood (Don Stenhouse, personal communication).

The recent records from around Manchester, suggest either a previously unidentified localised population of *A. alni*, or a population that has arisen through the introduction of imported nursery stock from the Continent. The Trafford Centre is a fairly recent development (opened in 1998). Wilderspool Wood however, has a preservation order and the Trafford Centre was built around it. Originally part of the de Trafford estate, the wood contains a number of tree species, including Hazel and Birch, but notably eight Alders, all food sources for *A. alni* (Angela Liversage, personal communication). This suggests that should the *A. alni* present at Wilderspool Wood be an immigrant population, then the imported source would lie elsewhere. There have been significant imports of Italian Alders into the UK in recent years that may account for these sightings. Indeed, importation of such trees is believed to have resulted in the sightings of many continental arthropods in areas they are not usually found, ranging from spiders to mole-crickets.

*A. alni* is well distributed across Europe, particularly in Central Europe and Scandinavia (Harde, 1984). The establishment of *A. alni* within the UK may have been prevented in the past by temperature requirements of the larvae and adults. The abrupt nature of isotherms may limit the northern limit of the *A. alni* range to Northern France. Indeed, abrupt temperature limits have been noted in the UK for Orthoptera distributions. With global warming moving these isotherms gradually northwards, it is possible that colonies of *A. alni* that are introduced with imported nursery stock may gain a firm foothold. In addition, the expanse of water separating the UK from continental Europe may limit the numbers of migrants preventing the establishment of viable colonies. The food source is not uncommon, and hence it would be suspected that the beetle would expand its range within the UK from established colonies. Certainly, a similar situation has been noted with the spread of the Long-winged Cone-head, *Conocephalus discolor*. Previously localised to the south coast, it has progressed inland over the past twenty years, reaching as far north as Leicestershire in the last few years (Sutton, 2004). The Bee Wolf, *Philanthus triangulum* has similarly spread from the coastal habitats of the extreme south to become almost ubiquitous across southern England.

It will be of interest to monitor the population at Wilderspool Wood over the coming years to ascertain whether this is an establishing

colony that has managed to over-winter or has experienced die off during the cold months. If the colony has established then it would be expected that sightings of this pretty beetle will increase in the surrounding countryside where habitat permits over the coming years. Particularly suitable would be areas alongside the Manchester Ship Canal rich in food sources.

**Acknowledgements**

The author wishes to thank Don Stenhouse for his assistance in identification of the beetle and provision of corroborating evidence. In addition, many thanks to Ms Angela Liversage (Environmental Services Manager, Trafford Centre) who provided information regarding the habitat at Wilderspool Wood. Many thanks to Dr Peter Sutton for critical review of the article and also to John Walters, for kindly providing the photograph of *Chrysolina violacea* for comparative purposes.

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# Staggered emergence of the Early Thorn moth *Selenia dentaria* Fabr.

*by Dafydd Lewis (10103)*

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The Early Thorn moth *Selenia dentaria* Fabr. is generally regarded to have two generations, at least in southern Britain, one emerging in the spring (April-May) and a summer brood of smaller individuals (August-September). Waring and Townsend (2003) provide a broader range of dates during which the adult moth may be recorded (mid-February to May and July to September). Skinner (1998) notes that a third generation is easily obtained in captivity, and South (1961) states that emergence of some individuals of the second generation can be delayed until the following February, but that these retain the characteristics of the summer form.

Adults which I bred in Surrey from Shropshire larvae obtained in May of this year emerged during the second week of June, and were of summer brood appearance. However, around a quarter of the pupae did not emerge and were retained in normal ambient conditions in an airy outbuilding. Adults emerged from these pupae during mid-to-late October. Around this time two reports (one from Yorkshire and one from Somerset) were posted on the Yahoo! UKMoths group of single specimens of *S. dentaria*, which were in good condition, coming to light much later than usual, raising the possibility of a partial third brood in mid-to-late October.

Although captive conditions may influence emergence times, in the light of these findings with captive bred specimens it seems possible that *S. dentaria* recorded as late as October might represent quiescent individuals from the summer brood which, during cooler autumn conditions, might otherwise overwinter as described by South (1961).

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# The Geranium Bronze in North Portugal

*by Don Dunkin (1487)*

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The article by David Newman about the butterflies of the Balearic Islands (Newman, 2004) was of great interest to me.

In the last two weeks of September 2004, my wife and I visited North Portugal. We stayed (as usual) at the Hotel Meira, in Vila Praia de Ancora. This is a very pleasant, though small, seaside resort about an hour's drive to the north of Oporto and situated in the Costa Verde (the Green Coast). We have been there many times and greatly admire the friendliness of the people, the food, and (for me) the variety of butterfly habitats provided.

In late September, the tree-covered hillsides, the sand dunes, the farmland, gardens and other habitats are distinctly sun-worn. Apart from the usual whites, the Southern form of the Speckled Wood and an odd tired Meadow Brown there was not much to be photographed.

And so, to the hotel swimming pool! There, a number of diminutive butterflies flitted around and about the pool and the walls outside. All were small, with brown upper-sides, brown and white fringed wing edges and with tailed hind-wings but with beautifully marked underside hind-wings (Plate 3).

Upon our return home I studied Tolman and Lewington (199⁷). Identity was confirmed as the Geranium Bronze *Cacyreus marshalli*. This species is a native of South Africa and (it is said) was accidentally introduced to Spain. It is also described in Williams (1994). The larvae are said to feed on various species of *Pelargonium* and *Geranium*. The Hotel Pool had, of course, *Pelargonium* flowers in quantity.

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# Nuptial flight of the Woodlouse Ant

*by Mike Fox (10204)*

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The Woodlouse Ant *Myrmecina graminicola* is a strange ant. It is roughly the same size and colour as the Common Black Ant *Lasius niger* but moves very much more slowly and when disturbed often curls into a ball; hence its English name. Under moderate magnification its two-segmented waist, typical of the sub-family Myrmicinae, can be clearly seen.

Apart from one I sifted from leaf litter at a campsite in the South of France I have never found this ant while actually searching for ants. Despite this I have recorded it in the UK on a total of four occasions. Twice in my garden in North Acton TQ200814 and twice, a short walk away, on my allotment plot TQ199812. The most recent find on my allotment was on 26 May 2003. This was a single worker found inside a hole in the side of a ripe strawberry. Although *Myrmica ruginodis* and *rubra* nest on my plot and are common, this worker was too dark and slow moving to be either and under the microscope was without question *M. graminicola*.

This year for the first time I observed a nuptial flight. At around 3.30pm on 5th September 2004 I was sitting in my garden when I noticed what I took at first to be thunder flies *Thysanoptera* alighting on the arm of the chair I was sitting in. I picked one up for a closer look and realised that it was in fact a small flying ant with dark wings. I collected a male and female *in cop* plus two more females and a dead dealate female found on the ground. I put them all in a Petri dish with the thought of starting a colony but unfortunately the next morning they were all dead. Under the microscope I confirmed them as *M. graminicola*. I have never found a nest of this ant and would be interested to hear from anybody who has.

# Entomological Etymology – or, what's in a name?

*by Dafydd Lewis (10103)*

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**Etymology** is the study of the origins of words: thus, the word etymology comes from the Ancient Greek *etymon*, meaning "the true sense of a word" and *logia*, meaning "study" ("*Behind the Name*" website: http://www.behindthename.com/etymology.html). Similarly **entomology**, the study of insects, is derived from the Greek *entomo* ("insects") and *logia* (Oxford University Press, 1986). Many entomological terms are derived from Latin and Greek, and understanding their meanings can provide insight into taxonomical or other concepts.

For example, in the insect family tree, the terms Apterygota and Pterygota describe the primitive wingless, and the phylogenetically more recent winged insects, respectively. These terms are based on the Greek *pteron* – 'wing'; the absence of wings is depicted by the prefix letter '*a*'. The choice of terminology is appropriate, as the possession of wings is a characteristic that gives insects a major competitive advantage.

Wings develop externally in the more primitive group of winged insects – hence, **exo**pterygota – and within a quiescent pupal stage in the other – **endo**pterygota. A glance at the names of individual insect orders shows how descriptors of wings can reflect some key characteristics (see Table 1).

Michael Majerus (2002) describes how some of the Lepidoptera were named after characters in classical literature – such as *Vanessa atalanta*, the Red Admiral Butterfly, after Atalanta, the beauty and athlete who raced her suitors and killed them if they lost! The name can also indicate something about the biology of the insect – thus, *Aglais urticae*, the Small Tortoiseshell Butterfly, is named after its larval foodplant the Stinging Nettle, *Urtica dioicia*. The dozen or so other reasons for selecting a name include a character in the wing pattern or structure (e.g. the Snout, *Hypena proboscidalis*) behaviour, habitat, the adult emerging season or by comparison with a previously described species.

There is a handy companion to understanding Latin and Greek roots in scientific names (Borror, 1960). However, if you're a lepidopterist you don't have to be a Latin scholar to understand the names of butterflies and moths, thanks to the labours of the late Col. A. Maitland Emmet, who has compiled a whole volume detailing these names and their meanings (Emmet, 1991).

**Plate 1. The New Forest Cicada.** Clockwise from top left: Adult New Forest Cicada; a series of oviposition scars on Birch; ideal Cicada habitat, well-structured ground flora, low growing scrub; Cicada turret with top removed, empty nymphal skin nearby.

Photos: J.A. Grant


**Plate 2.** *Agelastica alni*. **(a)** The adult is a pretty beetle, 6-8 mm in length, and the upper side coloured violet blue. Adults hibernate over-winter in the soil beneath the tree before emerging in May-June to feed and mate. Up to 900 eggs may be laid in batches on the underside of leaves. Second generation adults emerge in July to August, remaining active until early October. **(b)** The larvae are black, measuring up to 11 mm in length, with a double row of eversible sacs running down the abdomen. The eversible sacs secrete chemicals that deter predators. The larvae pupate in the soil beneath the host tree. **(c)** *Chrysolina violacea*. Distinguishing features between *C. violacea* and *A. alni* include the red tarsi and ovate elytra of the former species.

Photos: (a) and (b) Richard Thomas, (c) John Walter

**Plate 3.** The Geranium Bronze *Cacyreus marshalli* at Vila Praia de Ancora in North Portugal.

Photos: Don Dunkin

**Plate 4. Armyworms in West Scotland.** Top left: a close-up view of the larvae, each of which is a few millimetres long. Top right and bottom left: Moving columns of larvae of *Sciara militaris* (Barcaldine Forest, Argyll, 31 July 2004). Diameter of £1 coin (top right) is 22mm. Bottom right: Adult female reared from the Scottish larvae (emerged mid-August 2004). Body length 3.4 mm.

**Plate 5.** Sword-grass caterpillar, Fair Isle, 23rd July 2004 Photo: Glen Tyler

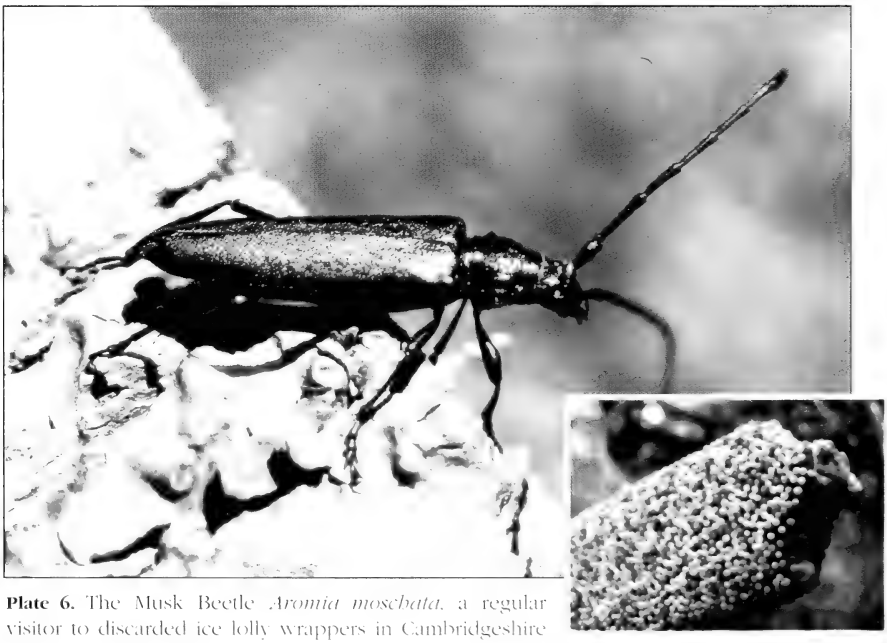

**Plate 6.** The Musk Beetle *Aromia moschata*, a regular visitor to discarded ice lolly wrappers in Cambridgeshire litter bins.

**Table 1.** Latin names of some Insect Orders.

| Latin name | Meaning | Common name |
|---|---|---|
| Ephemeroptera | From the Greek, *ephemeros* (lasting a day) and *pteron* (wings) | Mayflies |
| Odonata | From the Greek *Odontos* meaning 'toothed jaw' [1] | Dragonflies and Damselflies |
| Orthoptera | From the Greek, *orthos* (straight) and *pteron* (wings) | Grasshoppers and crickets |
| Isoptera | From the Greek, *isos* (equal) and *pteron* (wings) | Termites |
| Hemiptera | From the Greek, *hemi* (half) and *pteron* (wings) | True bugs |
| Coleoptera | From the Greek, *koleos* (sheath) and *pteron* (wings) | Beetles |
| Lepidoptera | From the Greek, *lepidos* (scale) and *pteron* (wings) | Butterflies and moths |
| Diptera | From the Greek, *di* (two) and *pteron* (wings) | Two winged flies |
| Siphonaptera | From the Greek, *siphon* (tube or pipe) and a (without) *pteron* (wings) | Fleas |
| Hymenoptera | From the Greek, *hymen* (membrane) and *pteron* (wings) | Social insects e.g. ants, wasps |

Some English common names were derived for similar reasons as the Latin – *e.g.* the Juniper Carpet, *Thera juniperata*, after the larval foodplant. Spring Usher, however, is the optimistic name for a moth that flies in February. As Peter Marren explains, some of the rich diversity of English names reflects 18th century British social history. The 'pug' moths, for example, were named after the dog of that name – their hind wings are shorter than their forewings, just as the dog's lower lip is shorter than its upper lip. The Aurelian Society in the first half of the 18th century named moths after everyday objects such as satins, silks, Gothic arches of church naves, or colours worn by contemporary foresters. Modest little brown moths were termed clays, quakers or 'rustics'. But it was a French naturalist, Abbe Goedart, who first noted the Drinker Moth caterpillar's liking for dew – in 1662.

A recent development for lepidopterists is the drafting of a list of English names for the microlepidoptera, by Jim Porter (Porter, 2002). While scientific names of course remain critically important, it may not be a coincidence that it is in the UK, where vernacular names are

[1] From a classification system devised by Fabricius, based on mouthparts rather than wings: see http://www.ndsu.nodak.edu/entomology/topics/orders.htm

routinely used for butterflies and moths, that amateur lepidopterists have made a major contribution to entomology and invertebrate conservation, and the use of vernacular names can only help to encourage more people to study these insects. In addition to being of interest to entomologists, understanding the origin of vernacular names can also serve other purposes – for example, they are a useful source for linguists when such names need to be translated into minority language conservation documents.

Both vernacular and scientific names can and do change over time, and documenting these changes can be illuminating. William McCall has compiled a list (McCall, 2001) which provides a convenient summary for the butterflies, and includes such revelations that the Small Copper (*Lycaena phlaeas*) was described in 1699 as the Small Golden Black-spotted Meadow Brown, and that the first documented name for the Painted Lady (*Cynthia cardui*), in the 17th century, was the "Good King Henry". The Natural History Museum is attempting a detailed historical catalogue of all Lepidoptera names worldwide (Beccaloni, G. W. *et al* (Eds). *The Global Lepidoptera Names Index (LepIndex).* World Wide Web electronic publication 2003. http://www.nhm.ac.uk/entomology/lepindex [accessed 11th September 2004]) and another interesting source is the Finnish website initiated by Markku Savela (Savela, M. "Lepidoptera and some other life forms". World Wide Web electronic publication http://www.funet.fi/pub/sci/bio/life/insecta/index.html [accessed 11 November 2004]) which contains much information on historical insect names, with cited references, although this is not the primary intention of the site.

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# How I Shook the Hand of the Man who Shook the Hand of Michael Palin – A Bolivian Journey (1998) Part II – How We got to know Pachamama

*by Don McNamara (5537)*

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On Tuesday 3rd September 1998 our group of enthusiasts departed Heathrow London Airport on Varig Brasilian Airlines, Flight 761 at approximately 2200 hrs – ultimate destination La Paz, Bolivia.

After brief stops at Rio de Janiero, Sao Paulo and Santa Cruz, we arrived at La Ciudad de Nuestra Senora de la Paz – The City of Our Lady of Peace, at 1330 local time.

✈ ✈ ✈ ✈

The capital is about 4 kms above sea level and lies in a valley (of Chicuiago Marta). The streets are all 'up and down', the air somewhat rarified with the delicate niff of diesel and as most modern cities is a bustling, thronging, slightly manic place.

Most urgently, having been processed quickly through civilian and military customs and remembering our absent organiser – would Susana be there? Yes, she was! She was standing by a small bus with a smiling local driver. Buenas Tardes! (Not half!)

Through the busy streets and chaotic traffic we went to the Hotel Sagarnaga, off the Avenida Santa Cruz: sort out rooms, the paperwork, luggage tucked away, Bolivians, Germans, Australians – plenty of Yanquis. Still enough daylight to do a bit of exploring, so out into the busy street, down to the Plaza Perez Velasco, past the Iglesia de San Francisco, Plaza Munillo and the Cathedral.

Side streets, market stalls – folk craft, hand-made clothing carefully stitched, Levi Jeans, artisans making silver jewelry, charms, crucifixes, turistas, soldiers, priests, nuns, Aymara women in bowler hats and multi-layered skirts.

One stall had badly-set butterflies in glass-fronted boxes and several stalls were selling what looked like pieces of skinned and dehydrated rabbit.

A passing back-packer (g'day) noticed my curiosity and explained: non-Christian beliefs abound, especially in rural areas, often mixed with Spanish Catholicism, a common idea is that of the earth-mother or

Pachamama, who shares her benificence with her subjects, helps to bring forth the necessary crops, but if the earth is disturbed (ploughing etc) she demands retribution, a sacrifice or gifts.

The indigenous people give gifts of coca (not cocoa), blood, alcohol – should they need to plough the earth. In urban areas if the earth is disturbed, say for building purposes, a sacrifice or gifts to the earth-mother need to be placed into the foundations, a sort of apology in the form of a sacrifice. Particularly favoured is the blood of animals, in particular the llama. It would be dressed in silk and gold and silver together with other valuables will be sacrificed to the earth-mother and be put into the earth or building foundations. Alcohol is often an integral part of the ritual – the llama gets to drink its fill as well as the humans, no doubt it arrives in its own bit of heaven in a happy state. Poorer individuals can use a llama foetus, dressed up in its finery with a variety of tokens, food, sweets, coca leaves, jewelry, and put into the broken ground: for good luck, in general a picture of Pachamama will do. These stalls were doing a good trade in llama foetuses.

Sacks of what looked like dried privet were also on display on several stalls – the ubiquitous coca leaves. The Australian back-packer, who took it upon himself to educate the obviously naieve pom explained that chewing coca leaves was a long tradition that fulfilled certain communal rituals and also had a semi-medicinal effect. Used medicinally coca can be an appetite suppressant as well as a stimulant but leaving the participant generally pleasantly contented. It can also soften the harsh effects of working in such places as the silver mines or at altitude – so coca leaf chewing fulfills ritualistic, social and medicinal functions. It is in fact, he explained, quite central to indigenous culture. It is only a problem when converted chemically to cocaine, fetching very high prices from the drogistas – and a continual source of economic and political problems.

Another surprise: the sanctification of Che Guevara. The Argentinian revolutionary and comrade of Fidel Castro died in his attempt to export revolution to the Bolivian countryside (9th October 1967) and despite general vilification in the western-oriented media has become a saintly figure. Sellers of portraits of Che – the famous Christ-like image, do a good trade and so, oddly, do the T-shirts, which are commonly seen on the streets not only worn by turistas. In all sorts of out of the way places (we were to find) his portrait can be seen, surrounded by tinsel and with candles burning by the side.

All this on the very first day.

As the evening darkness came down so did tiredness. The journey, altitude, excitement – all contributing to a pleasant fatigue – back to the hotel for the evening meal: chicken, rice, vegetables, much coffee – or coca-tea if preferred, a gentle infusion of coca-leaves making a brew not unlike Russian tea.

Susana suggested a light meal, to prepare for tomorrow's travelling, (please, Pachamama let there be pink river dolphins and butterflies as big as dinner plates) an early start required – so I scoffed everything offered. I lumbered off to bed to have the worst night I can remember – nightmares: blood-soaked animals wailing in sacrificial torment, dark shapes floating in and out of an indistinct landscape. I awoke freezing yet bathed in sweat, a severe headache, queasiness, eyes difficult to focus and a sense of foreboding. Altitude sickness? My own piggery? Or Montezuma's revenge?

A tap on the door; "senor, por favor, breakfast – you go Chulumani at nine."

Next: Part III; The Most Dangerous Road in the Universe.

## Late Large White Butterfly larvae

*by Jan Koryszko (6089)*

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During early December 2002, a number of friends showed me larvae of the Large White butterfly *Pieris brassicae* Linnaeus, which were found in their gardens. They were of a new brood, munching away at their cabbages and fresh growths of sprouting broccoli. Following the mild, wet weather, these plants were full of new growth.

I have also heard of similar observations in other parts of England. W. Briant of Salisbury, Wiltshire, a gardener of over 60 years, published a short note of comparable finds in a gardening magazine. No doubt 'global warming' is the reason for this?

# Through a glass very clearly indeed – obscure and curious items of entomological literature, part 12

*by Richard A. Jones*

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A continuing series of some strange books that have found their way into my library. Not useful key works by important entomologists, but strange oddities, quaint, off-beat or just plain entertaining.

***The microscope: its history, construction, and application: being a familiar introduction to the use of the instrument, and the study of microscopical science* by Jabez Hogg, London, George Routledge and Sons, 1886.**

Although the cover of my copy is slightly tatty, the text and "upwards of five hundred engravings and coloured illustrations" are crisp and clear on the clean pages. The book looks hardly used, which is why, perhaps, that it was put into a library sale and I was able to snap it up for £3 a couple of years ago. The fact that mine is an 11th edition, published 32 years after the book was first written, testifies to the fantastic interest in microscopic nature during the 19th century.

As an aside I must just say that if I thought the author's name was unusual and Dickensian, then this was emphasized by the name of the engraver of those upwards of five hundred illustrations, one Tuffen West. Or perhaps it was just that people with odd names were likely to get into microscopy, people like Gosse, Hassal, Busk and Quecket are all mentioned in the author's preface.

Just as this 'new' subject was fascinating to Victorian readers then, this book is a fascinating historical text to read today. The first part of the book is a catalogue of the many types and designs of microscope available at the time, from a simple lens on an adjustable arm to sophisticated oil-immersion optics where the objective lens rests in a drop of oil on the slide cover-slip to utilize the improved refractive properties of this combination. There are also binocular microscopes, and although these are the most useful in the general study of entomology today, the book was written at a time when the most minute details of the world were being seen for the first time so the high-power monocular microscopes of the day were perhaps seen as the most interesting.

There are chapters, in the most elaborate detail, on dissecting, preparing, staining, and observing the tiniest of objects from plant cells to blood cells, to the eggs of butterflies and the mouthparts of flies. Insects contribute only a couple of chapters, but these are full of delightful comment. Butterfly and moth wings are described as being covered with feathers. Multi-faceted compound eyes are likened to Brussels lace with hexagonal meshes stretched over a hemisphere of glass.

One of the delightful coloured plates is given over entirely to insects, showing an aphid, a butterfly head, various butterfly and moth eggs, antennae and tarsus segments. The line figures are equally beautifully engraved and my favourite is the almost full-page illustration of the housefly proboscis.

The nadir of this appreciation is, though, bestowed on the humble louse. I quote. "Whenever wretchedness, disease, and hunger seize upon mankind, this horrid parasite seldom fails to appear in the train of such calamities, and to increase in proportion as neglect of personal cleanliness engenders loathsome disease, When examined under the microscope, our disgust of it is in no way diminished."

This is news to me. The seven-year-old son of a family friend got a microscope for Christmas and he has been looking at everything he can find. First he looked at the blood cells that his grandmother courageously provided, then his own hair and some onion skin cells. Now he wants to look at a head louse. What luck, I am able to provide some for him, nit-combed from my own children and perversely preserved in alcohol. It's good to inform and instruct, but I agree, they are loathsome.

## Moths

If moths did not seek candle flames
would people ever learn their names?
They flutter hidden by the night,
yet seem attracted to the light.
If they could talk I'd have to ask.
Would it not be a simpler task
to put these night-time flights away
and flutter brightly through the day?

**Gordon Ramel**

# Armyworms in West Scotland – a spectacular entomological discovery

*by Clive Craik (5990)*
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*Peter Wormell*
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*Jane Smith*
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*Frank Menzel*
*ZALF e.V.,Deutsches Entomologisches Institut, Eberswalder Str. 84, 15374 Müncheberg, Germany.*

On 30 and 31 July 2004, long moving columns of insect larvae were found on a footpath in coniferous forest near Oban in West Scotland. They were discovered by two local people, Jane Eaton and Tom Webster, who first mistook them for "discarded strands of twisted plastic" or "numerous moulted snakeskins". Jane picked up the end of one strand to investigate and was "horrified" to find that it consisted of vast numbers of maggot-like larvae. There were about ten columns, of very variable width, height and length, in total containing uncountable thousands of constantly writhing, closely appressed larvae, each a few mm long (Plate 4).

One of the biggest columns was about three metres in length while others were curved or forked. The unceasing movement of the larvae forced the columns forward at about one to two cm per minute. Some of the larvae were reared in captivity and the flies that emerged from pupae in mid-August were identified by Frank Menzel as *Sciara militaris* Nowicki, 1868.

The long columns are popularly known as "armyworms". We believe this is the first report of armyworms in the British Isles. It is also the first record in the British Isles of *S. militaris*. A fuller report is in preparation and will appear in the *Dipterist's Digest*.

The name "armyworms" has also been applied to marching columns formed by processionary caterpillars, or to plagues of some noctuid moth larvae that destroy crops. The armyworms we describe here are formed by larvae of two-winged flies (Diptera), usually of the family Sciaridae (Black Fungus Gnats). These belong to the suborder Nematocera, the most primitive of the three suborders of Diptera.

Armyworms like these have previously been reported from many sites in continental Europe and North America, but in general they are a rare phenomenon. In a German paper, Menzel and Mohrig list 166

records from continental Europe over a period of several centuries [*Studia dipterologica Supplement* 6 (1999) pp17-21]. Most of these reports came from Germany, particularly from deciduous woodland in the central mountain ranges of that country (the Harz and Thüringer Wald).

How did this continental species arrive in west Scotland? The fact that there were such large numbers in a small space shows that they must have bred locally. Sciarids are small weakly-flying insects, and adult *S. militaris* are only three to four mm long (Plate 4). It seems unlikely that one could fly across the North Sea. Even if windblown, first reports would have been expected in eastern Britain, not in the far west on the other side of the Scottish Highlands. It is more likely that eggs, larvae or pupae were transported here from continental Europe in soil, probably around the roots of young trees. Conifer saplings growing in forest compost are sometimes imported to Britain for commercial planting. It may well be relevant that Norway Spruce growing within 30m of the site were imported from Sweden and planted between October 1979 and April 1980 (R. Fraser, *pers. comm.*)

Sciarid larvae often occur in large numbers in rotting vegetation or decomposing fungi, while some are pests of protected crops and others of stored food products. It is not known why, on rare occasions, larvae of a few species migrate and form long moving columns like this. One theory is that the columns form when an area becomes overcrowded, but other causes have been suggested. Neither is it known whether the species most famous for the habit, *S. militaris*, always includes an armyworm phase in its larval development.

Whatever the explanation, this was a truly extraordinary spectacle. Most who saw it agreed that it was one of the more memorable wildlife events they had seen. We would like to encourage others to keep an eye open for these moving columns of larvae, particularly in July and August, the months when most reports have occurred.

We returned to the site to collect more data on 1 and 3 August, but the columns were nowhere to be seen. Digging revealed a small number of larvae in two pockets buried just below the litter layer on the forest floor but, by 6 August, these too had disappeared. Of the many hundreds of thousands of larvae, not one could be found.

**Acknowledgements**

We are grateful for help and advice from Peter Chandler, Adrian Pont and the Amateur Entomologists' Society.

# Europe 2004

*by Tony Steele (4106)*

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My wife Margaret and I departed Britain via the Channel Tunnel on Saturday 3rd July, en route to Les Praz, near Chamonix in the French Alps. After an overnight stop at St. Dizier, we continued on our way, stopping regularly at the many efficient motorway services. It was at one of these, the Aire du Jura at Lons-le Saunier that we saw our first butterflies. We were seated on the edge of woodland enjoying a most excellent French sandwich, and flying around us were Brimstone *Gonepteryx rhamni*, Comma *Polygonia c-album*, Speckled Wood *Pararge aegeria*, Bath White *Pontia daplidice* and Large White *Pieris brassicae*. Our penultimate stop was at the Aire de Michaille at Chatillon to the south of Geneva. Lying on the ground, obviously hit by a car, was a Provencal Fritillary *Mellicta deione*. We duly arrived at our hotel, Les Lanchers, late afternoon. After settling in and a meal we took a short walk round the village, and by the street lights we noted the following moths, Plain Wave *Idaea straminata*, Riband Wave *I. aversata* and Marbled White Spot *Protodeltote pygarga*.

Awoke on our first full day to dark overcast skies, so after a quick visit to Chamonix to get some provisions, we drove through the Mont Blanc Tunnel into Italy, and as we emerged noted that the weather had now improved. We travelled along the Vallee d'Aoste, and at Sarre turned into the Cogne Valley and up to Pondel. We left the car in the small car-park and strolled through this ancient alpine village and crossed the Roman bridge to the south facing slopes of the valley. Our target species was the highly protected Piedmont Anomalous Blue *Agrodiaetus humedasae*, this being its only locality. First butterflies seen were a couple of Wood Whites *Leptidea sinapis* followed by the first of a great number of Marbled Whites *Melanargia galathea* and some Common Blues *Polyommatus icarus*. A new species for me was next, the impressive Great Sooty Satyr *Satyrus ferula*, with the males having deep black, almost iridescent wings. Although a thorough search was undertaken, we did not see a single Piedmont Anomalous Blue, this could possibly be that we were too early for its flight season. However, seeing eight examples of Apollo *Parnassius apollo* gliding up and down the valley sides more than made up for it. A total of 15 species of butterfly were noted in this wonderful valley. The only moths seen were the black and white day flyer Nine-spotted *Amata phegea*, which is similar to a Burnet. Our return journey was over the St. Bernard Pass into Switzerland and then back into France.

The next day also dawned with very low cloud, no good for butterfly watching, so we decided to visit some of the tourist sights. Drove up the valley to Argentiere and boarded a cable car for les Grands Montets, a 10,744ft viewing point. At this altitude we were high above the clouds thus enabling fantastic views of the Mer de Glace glacier and the mighty Mont Blanc mountain. Unfortunately we were unable to stay long as there was a very cold wind gusting, so descended to Lognan at 6469ft. From here it was but a short walk to the Argentiere Glacier, where as it slowly descends over a rock ledge, pieces are continually breaking off in a most spectacular and often noisy way. Once more it was cloudy so no butterflies were seen, only two moth species, the Latticed Heath *Chiasmia clathrata* and my alpine favourite, the Orange and Brown *Psodos quadrifaria*.

Wednesday started warm with sunny spells, so we set off up the valley for a visit to the mighty Emosson dam at Finhaut, just over the border in Switzerland. As we climbed the many hairpin bends, a stop was taken to admire the views, and found resting on a grass stem was a Black-veined Moth *Siona lineata*, which in England is solely confined to Kent. We duly reached the dam, set at 6330ft, with wonderful views across the water to the backdrop of snow capped mountains. With cloudy conditions again, not many butterflies were seen, only Small Blue *Cupido minimus*, Common Blue, Painted Lady *Vanessa cardui* and Black-veined White *Aporia crataegi*. Several moths were seen including Mother Shipton *Callistege mi*, Hummingbird Hawk-moth *Macroglossum stellatarum*, and the black and white pyrale *Anania funebris*. Drove back into France to Le Tour and took the cable car to Col de Balme, on the Swiss Border at 7188ft. With the weather now sunny and warm many butterflies were flying, such as Mountain Fritillary *Boloria napaea*, Mazarine Blue *Cyaniris semiargus*, Grizzled Skipper *Pyrgus malvae* and Small Tortoiseshell *Aglais urticae*. One species that I did find very interesting was the alpine form Marsh Fritillary *Euphydryas aurinia debilis*, which is almost half the size and darker than the typical. A freshly emerged female Emperor Moth *Saturnia pavonia* was found sitting in the middle of the path, so it was moved to a safer location.

Our final day was spent on a walk from Plan Praz, high above Chamonix, descending and along to Les Praz. After a coffee in the mountain-top cafe, and admiring the views across to Mont Blanc, we duly commenced. It was not until sometime after starting that we realised there was a problem. The path that was signposted to Les Praz was not the one marked on our map. We discovered this when we

should have arrived at a turning point that was not there! We eventually found another route and continued on our way, seeing Dingy Skipper *Erynnis tages*, Alpine Heath *Coenonympha gardetta*, Mountain Fritillary and Grizzled Skipper. As we neared our destination the path passed through light woodland, and here were Wood White, Common Blue and Ringlet *Aphantopus hyperantus*. By now the weather had turned showery, and sheltering on a shrub was a rather wet Black-veined White. On Friday we started on our return journey home. It was at one of the ample motorway rest areas, the Aire Boire le Fort at Auxonne, that the last butterflies of the holiday were seen. The parking area was next to some woodland, and on the edges were seen Meadow Brown *Maniola jurtina*, Gatekeeper *Pyronia tithonus*, Small Heath *C. pamphilus*, White Admiral *Limenitis camilla*, Wood White, Small White *P. rapae* and Large White.

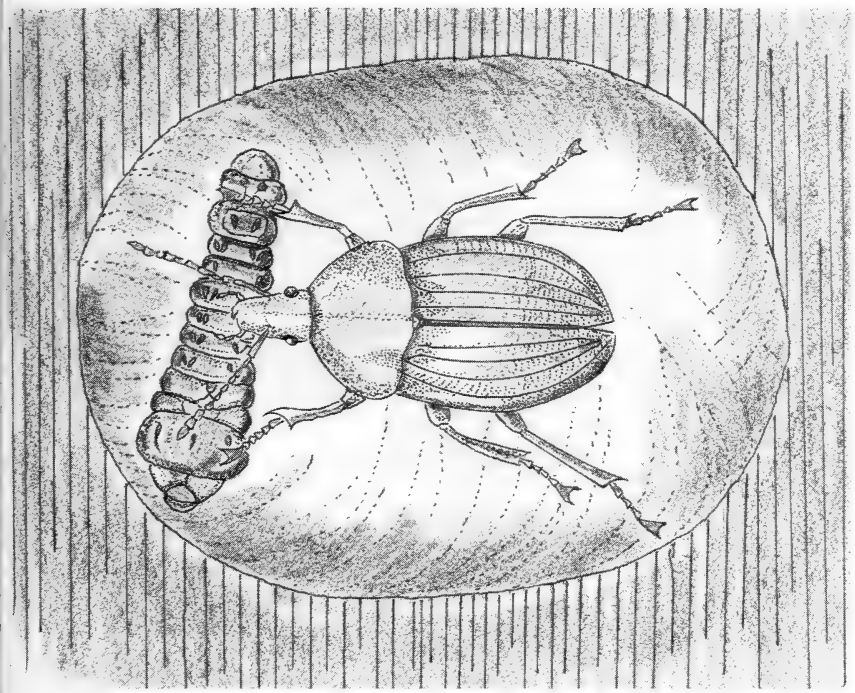
Total butterfly species seen over the week was a mere 34, many of them singletons. This was surely due to the poor weather conditions on most days. I would like to thank Matt Rowlings for information on the Piedmont Anonomolous Blue. Although I failed to see it, the visit to the Pondel Valley was well worth the journey, especially on seeing eight Apollos! As usual, a full species and locality list can be sent upon receipt of a SAE.

## Unusual food of the beetle *Silpha atrata* Linnaeus 1758

*by Keith C. Lewis (3680)*

*Top Flat, 108 Park View Road, Welling, Kent, DA16 1SJ.*

The beetle *Silpha atrata* can be found in a number of old books under its former name *Phosphuga* (Leach 1817) *atrata*. The beetle is shiny black, some 10 to 12 mm in length, and has a head that is elongated and a thorax that is semicircular in structure, both of which are adapted for attacking and eating land molluscs. A good set of line illustrations of the beetle attacking a snail can be found in E. F. Linssen series 1 Beetles of the British Isles page 172, after Ruhmkorff, in Heymens, Lengerken and Bayer 1927.



While visiting Chalk woods TQ5171 on 18th March 2001 found a substantial wind-snapped Silver Birch tree that was blocking the footpath. At the time of my next visit, 2nd April 2004, the tree had been cut into four five-foot long sections and placed randomly at one side of the path.

On lifting a section of bark on one of the logs I found it contained five old larva/pupa chambers of the longhorn beetle *Rhagium mordax*. Three of these chambers were completely empty while two were found to be occupied by the beetle *Silpha atrata*. What was surprising was that one of the *Silpha* beetles had been feeding on a *Rhagium mordax* larvae (illustrated above). When the larval skin of the *Rhagium* was extracted from the chamber it was found that the larva's body contained no body fluids, its body being totally flattened. No hard *Rhagium* larval head parts were found in the other four chambers, which I would have expected to find if the other *Silpha* beetle had been feeding on other *Rhagium* larvae.

## Reference

Linssen E. F. (1959), Beetles of the British Isles, Series 1. Frederick Warne, London.

# The status of the Sword-grass on Fair Isle

*by Nick Riddiford (9388)*

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Very little scrutiny of Fair Isle moths occurred until 1987. At least one and latterly up to four light traps have been set annually since, on most nights that the rather stringent restrictions of wind and weather allowed. Trapping activity has been extended to alcoholic sugaring of posts since 1998. The local moth fauna turned out to be abundant in quantity but low in diversity, though the rather infrequent migrant brightens some catches. A Sword-grass *Xylena exsoleta* taken in an Actinic at Schoolton on 23rd April 1992 and another attracted to sugar at the same locality on 8th October 1999 were assumed to be two such migrants.

This assumption has been challenged. On 23rd July 2004 I came across a very long, bright green caterpillar with black and red trimmings crossing the road between Quoy and Schoolton. Referring to Jim Porter's Caterpillars of the British Isles (1997; Viking Books, London) and aided by Glen Tyler, who took photos of our larva (Plate 5) we identified it with confidence.

Fittingly, the caterpillar was intercepted within 25 m of the Actinic site where the first and 15 m from the sugaring posts where the other adult had been caught. The Sword-grass is a national Biodiversity Action Plan species. The find adds to a growing list of notable non-avian biota which Fair Isle is known to support.

After its photography session, the caterpillar was placed in a jam jar with a good layer of soil. Before long the caterpillar had buried itself, presumably to pupate. It was left undisturbed for over three months before an inspection by Glen indicated that it had died and rotted away – despite care being taken to avoid making the soil too damp.

I thank Glen Tyler for his comments and permission to use the photograph.

# Musk Beetle *Aromia moschata* (L.) (Coleoptera: Cerambycidae) a regular visitor to discarded ice lolly wrappers in Cambridgeshire litter bins

*by Dr Keith Alexander*

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As someone well-known for excessive attention to ice lollies when out and about on entomological trips I was especially interested to learn that my efforts are appreciated by Musk Beetles (Plate 6). In some recent correspondence, Malcolm Busby of South Cambridgeshire District Council, mentioned that ice lolly wrappers make good traps for Musk Beetles. He told me that he and his colleagues always find some Musk Beetles in SCDC litter bins in the summer on lolly wrappers. He reckons that it must be the fruity sugary syrup that gets left on them. Information on new techniques for finding special beetles is always welcome! I wonder whether the beetles learn to associate the bins with easy pickings, or are they just responding to a sweet smell?

Musk Beetles are well known, of course, to be attracted to "entomologist's sugar" but are more typically attracted to blossom for nectar – Kaufmann (1990) mentions Angelica, Chervil, Cow Parsley, Ragwort, Shasta Daisy and *Spiraea*. Presumably all ice lollies smell and/or taste the same to a Musk Beetle, but it might be an interesting study for someone to consider any preferences for flavours?

And don't worry about being seen rummaging in litter bins for the beetles – the SCDC people will understand. But if you do, please be sure to carry out a risk assessment first.

## Reference

Kaufmann, R.R. Uhthoff-, (1990), The distribution of the genera *Trinophyllum* Bates, *Gracilia* Ser., *Aromia* Serv., and *Hylotrupes* Serv. (Col.: Cerambycidae) in the British Isles, *Entomologist's Record* **102**: 267-274.

# *Arhopalus rusticus* Linnaeus 1758 and *Arhopalus tristis* Fabricius 1758 in Kent. Part 1

*by Keith C. Lewis (3680)*

*Top Flat, 108 Park View Road, Welling, Kent, DA16 1SJ.*

## Introduction

John Berkenhout, (Figure 1) was born in Leeds in about 1730, the exact date of his birth being unknown. He was the son of a prosperous Dutch merchant, and on leaving school left England and went to Germany to study medicine. From there he went on a grand tour of Europe combining it with his medical studies. There can be little doubt that Berkenhout was financially secure, for at the outbreak of hostilities in 1756 between England and France he first joined the Prussian army and later held a commission in an English regiment. In 1760 Berkenhout made his way to Scotland and enrolled at Edinburgh University and later at Leyden University as a Doctor of Physic to continue his study of medicine, where he eventually obtained his degree in May 1765.

**Figure 1.** John Berkenhout *c*1730-1791 who first described *Arhopalus rusticus* Linneaus.

His first professional practice was at Isleworth in Middlesex, and later at Bury St Edmonds in Suffolk. In 1778 Berkenhout went to America to carry out unknown work for the British Government but was arrested and imprisoned for some political misdemeanour. On his return to England he was granted a pension from parliament as a reward for his service.

Although he wrote numerous books, his only work concerning natural history and entomology was the three volume work, which he

published: and entitled *The Outlines of Natural History of Great Britain and Ireland*. This work was first published in London during the years 1769 to 1772 by the publisher P. Elmsly whose printing premises were situated in the Strand facing Southampton Street, London.

John Berkenhout died on the 3rd April 1791 at Besselsleigh near Oxford.

His description of *Arhopalus rusticus* can be found in volume one of his history, page 102, as follows:

> 3. *rusticus*....Yellow brown. Long, slender. Antennae somewhat shorter than the body. On each shell (Elytron) two narrow ridges. Belly brown. List Loue. 383.10.

## The Beetle

The adult *Arhopalus rusticus* has a length of some ten to thirty millimetres and can be identified from its close family member by the third joint of its tarsi which is forked almost to the base (Figure 2). It also has seta, or long bristle-like hairs sprouting from between the facets of the eyes. In *Arhopalus tristis* the hairs are absent (Figure 3).

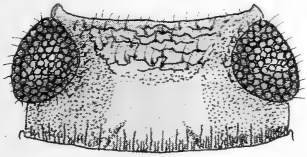

**Figure 2.** *Arhopalus rusticus.* Head underside.

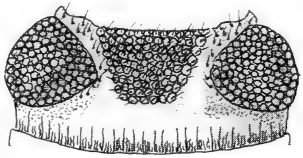

**Figure 3.** *Arhopalus tristis.* Head underside.

*Arhopalus rusticus.* Tarsi.

*Arhopalus tristis.* Tarsi.

A note in volume six of British Coleoptera, page 152, by W. W. Fowler and Horace St. John Donisthorpe informs us that a Colonel Yerbury was the second recorded British collector prior to John Berkenhout. Yerbury apparently found the beetle on a sprig of heather near a Scots fir stump, 22nd August 1904, at Nethy Bridge, Inverness-shire Scotland.

It should be remembered that J. F. Stephens firstly accepted Berkenhout's beetle as truly British, but when writing his *Manual of British Beetles* in 1839 he changes his opinion and writes "that this insect is not truly indigenous". The beetles in Stephens' own collection being all foreign were marked with this symbol ‡.

However the beetle's indigenous status was settled by Dr Paul Buckland of the Department of Archaeology, University of Sheffield, in 1994. He established that *Arhopalus rusticus* had occurred in the Doncaster District of South Yorkshire during the "Bronze Age", remains of this insect having been found in pine stumps below the Peak on Thorn Moors.

**Tips for collecting and breeding *Arhopalus*.**

I have found that much time and effort can be wasted in looking for the adult beetle. The method I used with a friend, was to use a car to scout the locations where pine trees are growing and then target the dead and moribund trees all over Kent. Look for the elliptical exit holes that are about the size of a pencil. To break open the wood you will need a tiler's hammer. Its head has a point on one end and a chisel on the other; if you use a wood chisel you will snap it for I have found that the larvae like and are found in fairly hard wood.

Before you have obtained your larvae you will need a number of the round breeding cages of the type sold by Watkins and Doncaster, catalogue number E610.

You will then have to get permission from the woods' owners, in my case The Woodland Trust, to cut a number of pinewood billets of a diameter that will leave about one inch between the edge of the billet and the plastic sleeve.

When the larvae have been collected a number of ¼" holes are drilled into one end of each billet; one larvae is then placed headfirst into each hole. If the cages are kept in full shade in the garden I have never found it necessary to spray the billets with water.

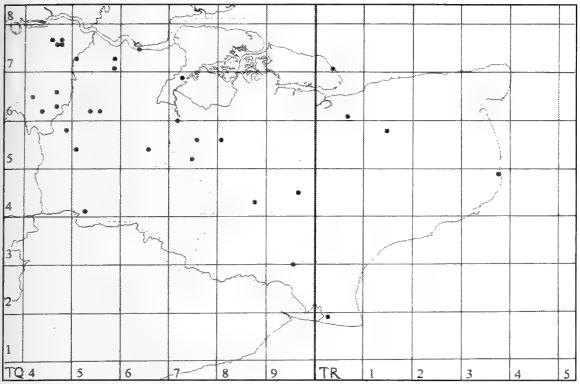


**Figure 4.** Map 1. *Arhopalus rusticus* records in Kent.

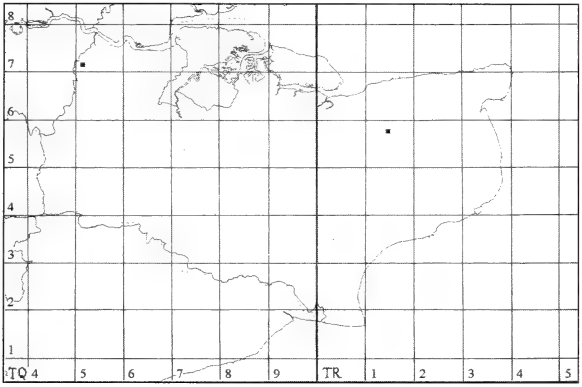


**Figure 5.** Map 2. *Arhopalus tristis* records in Kent.

## *Arhopalus rusticus* records in Kent. Map 1 (Figure 1). (Larvae*)

| | | | |
|---|---|---|---|
| 00. 06. 1949 | Canterbury, Frenley Park TR1457 | Pine stump | Jarzembowski W. |
| 08. 07. 1951 | Fordcombe TQ5240 | Pine stump* | Lewis K. C. |
| 23. 07. 1955 | Maidstone TQ7555 | Not known | Philp E. |
| 07. 07. 1962 | Hernehill TR0660 | Pine stump* | Lewis K. C. |
| 08. 08. 1963 | Leysdown-on-Sea TR0370 | Pine log* | Lewis K. C. |
| 19. 07. 1964 | Bearsted TQ8055 | Not known. | Philp E. |
| 12. 09. 1965 | Aylesford TQ7159 | Not known | Philp E. |
| 24. 07. 1969 | Keston TQ4164 | Under bark* | Lewis K. C. |
| 16. 08. 1969 | Appledore TQ9529 | Pine log* | Lewis K. C. |
| 00. 10.1979 | Kingsdown TR375486 | M.V. light. | Foster A. P. |
| 17. 04. 1979 | Smarden Bell TQ8742 | Under bark* | Lewis K. C. |
| 14. 07. 1979 | Kingsdown TR378485 | On beech trunk day | Foster A. P. |
| 10. 07. 1984 | Lydd Ranges TR0319 | Not known | Philp E. |
| 02. 06. 1986 | Joydens Wood Bexley TQ5072 | Under bark* | Lewis K. C. |
| 20. 06. 1986 | Horton-Kirby TQ5668 | Dead pine* | Lewis K. C. |
| 04. 07. 1987 | Down TQ4665 | Under bark* | Lewis K. C. |

| | | | |
|---|---|---|---|
| 09. 04. 1988 | Green Street Green TQ5870 | In pine heartwood* | Goodacre R. |
| 10. 09. 1988 | Sittingbourne TQ9063 | Not known | Philp E. |
| 14. 08. 1989 | Strood TQ7268 | Under pine bark. | Heal N. F. |
| 10. 07. 1990 | Hothfield Common TQ8644 | Under pine bark. | Heal N. F. |
| 18. 08. 1991 | Joydens Wood TQ5072 | Under pine bark* | Lewis K.C. |
| 19. 07. 1991 | Coxheath Nr Maidstone TQ7451 | M.V. light. | Lewis K. C. |
| 20. 05. 1991 | Joydens Wood Bexley TQ5072 | Under pine bark* | Lewis K. C. |
| 10. 07. 1992 | Pratts Bottom TQ4662 | Pine heartwood* | Lewis K. C. |
| 15. 07. 1992 | Joydens Wood Bexley TQ5072 | Under pine bark* | Lewis K. C. |
| 16. 07. 1992 | Hildenborough TQ5053 | On foliage by path | Measday V. |
| 17. 06. 1994 | Danson Park, Welling TQ4675 | Under pine bark* | Lewis K.C. |
| 24. 05. 1994 | Romney Street TQ5461 | Under bark* | Lewis K. C. |
| 13. 08. 1994 | Mereworth TQ6553 | Under pine bark. | Heal N. F. |
| 01. 05. 1995 | Welling Kent TQ4675 | Dead in hallway | Lewis K. C. |
| 05. 07. 1995 | Swanscombe TQ6374 | Pine stump* | Lewis K. C. |
| 10. 10. 1995 | Gattons Plantation TQ4576 | Under bark* | Lewis K. C. |
| 16. 05. 1995 | Shoreham TQ5361 | Under bark* | Lewis K. C. |
| 06. 05. 1995 | Welling Kent TQ4675 | To room light | Lewis K. C. |
| 07. 07. 1996 | Chevening TQ4758 | Under bark* | Lewis K. C. |

## *Arhopalus tristis* Records in Kent Map 2 (Figure 5).

| | | | |
|---|---|---|---|
| 00. 00. 1950. | Canterbury Kent TR1457. | Not recorded | Parry J. A. |
| 12. 07. 1995. | Joydens Wood Bexley TQ5171. | Under bark | Lewis K. C. |

## Parasites and natural enemies.

**Parasites**

| | |
|---|---|
| Diotera, Phoridae | *Megaselia fufipes* (Mg). |
| Hymenoptera | *Chasmiias motatrius* (Fab). |
| Hymenoptera | *Odontocolon appendiculatus* (Gr). |
| Hymenoptera | *Odontocolon dentipes* (Gmelin). |
| Hymenoptera | *Meteorus neesi* (Marsh). |
| Hymenoptera | *Odontomerus pinetorum* (Thoms). |

**Natural enemies**

| | |
|---|---|
| Formicinae | *Lasius niger* (Linn). |
| Formicinae | *Formica rufa* (Fab). |

## Acknowledgements

I wish to thank Brian O. C. Gardiner for details of Berkenhout's life history, the many coleopterists and Museums for sending me their records *c*1997-1998, and Brian Stimpson for his watercolour painting of Berkenhout.

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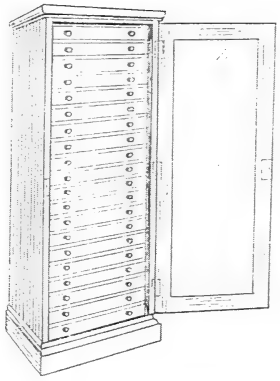

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# *Saturday, 23rd April, 2005*

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This year the AES Members' Day and AGM is being held at the Royal Entomological Society, Queen's Gate, London.

**PROGRAMME**

| | |
|---|---|
| **10.30 am** | Doors open and members sign in. Tea and coffee and other refreshments will be available. Coats may be left in an unsupervised cloakroom area at your own risk – the AES will not accept liability in the case of a problem occurring. |
| **11.00 am** | Welcoming address followed by first lecture by Matt Shardlow (Director of Buglife – The Invertebrate Conservation Trust): "Putting the backbone into invertebrate conservation". |
| **12 noon** | The Annual General Meeting will take place. Nominations for the election to the Societies Council or as a serving officer of the Society should be forwarded to the Secretary along with the names of two nominators who should be members of the Society.<br>The winners of the Cribb and Hammond awards will be announced and presented with their prizes.<br>The AGM will be followed by a break for lunch. |
| **2.00 pm** | The second lecture: "The amazing insect fauna of London's Royal Parks" will be given by Peter Sutton. |
| **3.00 pm** | The final lecture: "Extraordinary sex among the insects" will be given by Mike Majerus. |
| **4.00 pm** | Final questions and discussion.<br>Members' Day will end between 4.00-4.30 pm |

The RES is in close proximity to the Natural History Museum so you may combine your day with a visit to both the AGM and museum.

The RES have no restaurant but there are many restaurants and pubs, cafés and sandwich bars close by in Kensington (especially around South Kensington tube station).

Unfortunately there are no facilities to enable us to run separate events for Bug Club members but this is a great opportunity for them to visit the Natural History Museum!

Members will be able to view the various AES publications currently available and place an order.

# AES AGM and Members' Day – 2005

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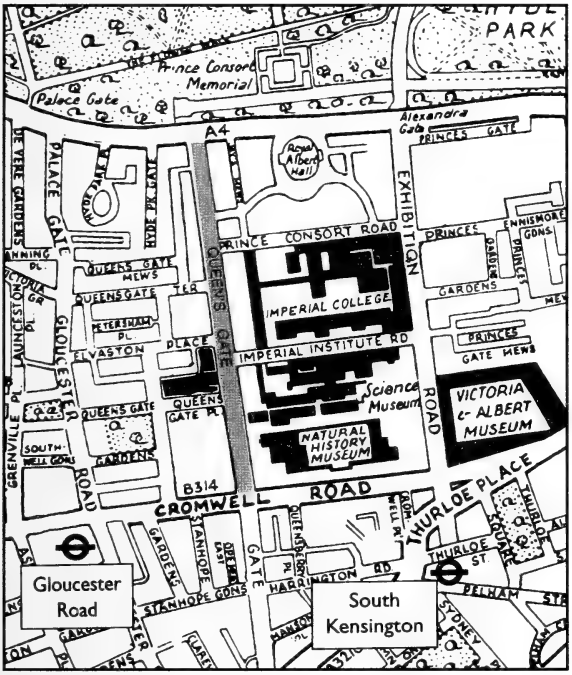


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# The Bulletin

## of the Amateur Entomologists' Society

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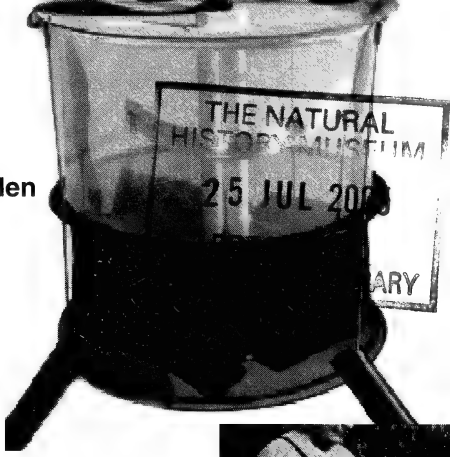


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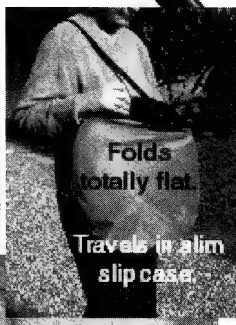


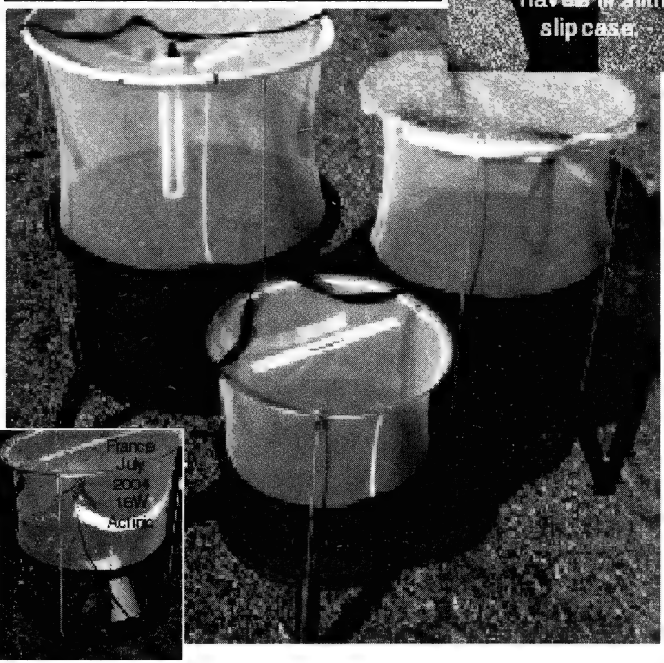

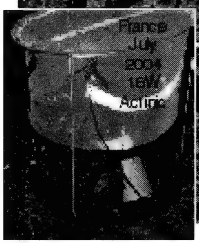


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Watercolour: Richard Lewington

## Bulletin Cover

The cover picture for this issue of the *Bulletin* shows a superb watercolour painting of a Hornet *Vespa crabro* by Richard Lewington. In recent years the Hornet, like many other species of Hymenoptera, has experienced a period of significant range expansion, particularly in the midlands and northern counties.

Last year was a bumper year for the social wasps, and reports from a well-known pest control company, who recorded the destruction of many wasp nests, recorded unprecedented numbers of Hornets nesting in buildings. They also recorded the spectacle of a Common Wasp *Vespula vulgaris* nest being raided by a marauding party of Hornets, who dispatched the occupants with ease, and proceeded to fly back in procession to their own nest, carrying the wriggling wasp grubs in their mandibles.

The Bulletin
of the Amateur Entomologists' Society

Volume 64 • Number 460 June 2005

## Editorial

Summer is well and truly underway. The AGM and Members' Day in April was another excellent day, with some superb speakers (including my esteemed co-editor). Members can now look forward to a Field Meeting as well as the Exhibition. Please see the Announcements, requests and replies section for more details of this meeting.

Following the precedent set last year, the reports from the 2004 Annual Exhibition are included in this *Bulletin*. It is hoped that this will encourage members to prepare an exhibit for this year. As an added incentive, a prize is likely to be offered for the best exhibit at the 2005 Exhibition.

This Editorial is followed by the Treasurer's Report. This seems to suggest that the Society's finances are beginning to improve. We are still looking out for new members all the time, however. This is the best way to ensure the future of the Society. It helps us to keep costs down, allowing us to produce one of the cheapest specialist publications in print and to produce first class books. So, if you know anyone interested in entomology who is not a member – encourage them to join!

Have a splendid summer, and I hope to see you in August at the Field Meeting.

Phil Wilkins

# Treasurers Report for the year ending 31st December 2004

I am pleased to report that during 2004 the finances of the Society have started to return to a better level than has been the case for many years, with all the Funds of the Society making a profit. Investment levels are now improving again after the losses a few years ago.

The fund used for the General running of the Society is the General Fund and this had made a loss every year, bar one, since 1992. The main reason for these losses has been the increase in quality of the Bulletin and other journals produced by the Society, such as the inclusion of colour plates, a colour cover and ICN, whilst subscription levels were maintained at a low level, the cost of these extra items being subsidised by the Society for many years. However, this could clearly not have continued indefinitely and 2003 saw the Society start to take steps to reduce the deficit in the General Fund by increasing subscriptions as well as by reducing expenses. These steps started to take effect during 2004 and it is hoped that continuing financial losses have now been brought to an end. During 2004 the General Fund made a profit of £1058 and now stands at £1331.

The Publications Fund made a profit in 2004 of £2286. No new publications were produced, but several are underway, and it is expected that expenditure will increase substantially over the next few years as these new publications are produced.

Peter May
Hon. Treasurer

# 2004 Exhibition Reports

**Two Autumnal Sawflies – Andrew Halstead (6346)**

Britain has about 500 species of sawflies (Hymenoptera: Symphyta). Of these only two have adults whose flight period is confined to the late summer-autumn. These are *Apethymus filiformis* (Klug) and *A. serrotinus* (O.F. Müller), formerly known respectively as *A. abdominalis* and *A. braccatus* in Benson's 1952 RES key. Other species of adult sawfly can be found in late summer-autumn but these are species with more than one generation a year.

The two British *Apethymus* spp are both associated with oak, on which the adults lay overwintering eggs. These hatch in the spring and the larvae feed on oak foliage. *Apethymus filiformis* is the more common of these species and occurs as adults in late September-November. *Apethymus serrotinus* is more local and flies during August-October. Both are widely distributed in England and Wales but more local in Scotland and Ireland.

**Identification of British Bumblebees and social Wasps – Henry Berman (5573)**

I had two boards illustrating British Bumble Bees and Social Wasps pointing out that to identify Bumble Bees you first look at their bums (I actually said the other end. There were children and ladies present) and for wasps you look them straight in the face. I supplied piles of dead specimens collected from the roads and asked people to try to identify them with the aid of magnifying glasses. There were sheets with identifying features of both common Bumble Bees and the 10 British Social Wasps for people to help themselves. I was surprised to find that most entomologists knew nothing about these insects. Quite a few said they would send me dead specimens.

***Agelastica alni* (Linnaeus 1758) The Alder leaf beetle. – Keith C. Lewis (3680)**

The exhibit contained four specimens of *Agelastica alni* and two location maps. This insect has always been rare in the southern half of the British Isles during last century but is now considered to be extinct in England. The beetles exhibited were collected by the late Henry George Colley 1898-1963. The data labels read, (1) Chorleywood, Hertfordshire, May 1926. (2) Rickmansworth, Hertfordshire, May 1946. (3) Watford, Hertfordshire, 23. May 1936. And (4) Charmouth, Dorset, -

11 June 1958. Three additional specimens were also found in the Colley collection. Of these, two were given to the British Museum, South Kensington, London, and one to my friend Anthony A. Allen of Charlton, London.

**The highest flying butterfly in the world? – David Oram (7127)**

*Piercolias huanaco* (Staudinger) Bolivia, caught by Richard Gram during an expedition to study altitude physiology and acute mountain sickness (plus its complications of pulmonary oedema, and cerebral oedema), at the Chacaltaya laboratory at 5,200 metres (in) near La Paz, Bolivia in October 2003.

This insect has the distinctions of being the only species of the genus *Piercolias* and the highest flying butterfly in South America if not the world. It has been found up to, 5,800m or 18,500 feet (D'Abrera 1984).

The specimen shown here was found at 4,650m (15,300 feet), in the Condiriri Region, just below the Condiriri Mountain (also called the Matterhorn of the Andes), part of the Cordillera Real Mountain Range. La Paz lies about 50 miles to the west of this area and is the highest capital city in the world sitting at 3,600m in a deeply sided canyon beneath the 4,000m Altiplano, a huge flat plain that stretches from Peru all the way down to Chile and Argentina. The Cordillera Real, Bolivia's very substantial contribution to the Andes, rises high above the east side of the Altiplano and stretches for nearly 150 miles north to south. At their widest point the string of glaciated peaks only measures about 8 miles. Sadly an attempt to reach Ancohuma, the furthest west of the peaks of the Cordillera Real, and the third highest in Bolivia at 6427m, were thwarted by a nation-wide set of roadblocks due to political unrest in the country. For reference Ben Nevis the highest point in the UK is 1,344m (about 4,500 feet) and Everest is 8,848m (approximately 29,000 feet) high.

This butterfly was caught in an area where considerable winds are encountered, daytime temperature was often only about 10°C and night temperatures drop to well below freezing. Vegetation was sparse and glaciers spill down from all sides. These butterflies are difficult to catch when flying, even when the wind subsides, as rapid movement at this altitude is not easy.

When the naturalist Garlepp encountered the butterfly his comments were recorded as follows, *"it flies on the highest summits of the Cordilleras, amidst the wildest boulders and masses of rock; I cannot understand its choosing such wastes and deserts or how it can exist there*

*at all, where it must be daily covered with snow and ice, where there is absolutely no vegetation and where only the Condor makes his abode,"* (Seitz:97).

**Some North American *Catocala* species (Underwing moths: Noctuidae Catocalinae) – Paul Waring (4220)**

The aim of this exhibit is simply to draw attention to the fact that there is an amazing number of *Catocala* species in North America and to show you some of them. There are three resident species in the British Isles – the Red Underwing *Catocala nupta* and the two Crimson Underwings *C. sponsa* and *C. promissa.* I have always had a great love of these moths because both the Crimson Underwings are closely associated with my original family home – the New Forest, Hampshire. Furthermore, sugaring in the southern half of England at the end of the summer is often enlivened by the appearance of the even larger Red Underwing – always a pleasure to see. In the whole of the temperate Old World there are about 90 species of *Catocala* and I have travelled to various remote places to see some of them. But in North America there are at least 110 species, many associated with New World trees such as Hickories and Pecans. From 29 July-5 August 2004 I had the opportunity to visit Kentucky where I joined fellow members of the Kentucky Lepidopterists' Society to see as many *Catocala* species as I could in the time available, to see how many I encountered in each place and on each night, and to start to form an impression of their habitat requirements. About 60 species have been reported from this one central, southern State alone. The exhibit is very much a "work in progress". I have set about 50% of the specimens I brought back to the UK. These have only just been taken off the setting boards. Once I have set the remainder, I shall identify them all finally and tabulate the results. I hope to have done this in time for the BENHS exhibition on 13 November and then to write an article of the trip for the AES *Bulletin.*

The accompanying photographs showed Richard Henderson (top left & right) who is the co-founder of the Kentucky Lepidopterists' Society. He was shown inspecting a sheet with some large yellow Emperor moths (Saturniidae – *Eacles imperialis*) which we also encountered in the three days and nights we collected and camped together. Several other large Saturniid species were also on the wing, of which the Polyphemus moth *Antheraea polyphemus*, the Tulip-tree Silkmoth *Callosamia angulifera* and the American Moon Moth *Aclias luna* are represented in the exhibit. In another photograph Richard demonstrated his "night-collector" – which increases the success of boxing *Catocala*

moths at sugar. The central pictures showed Richard and me at Otter Creek Park, near Louisville in northern Kentucky, where many of the exhibited moths were collected. Also shown were a *Catocala* in my "Waring Tropical" actinic trap which I take everywhere when I am flying (see the AES Guide to Moth Traps and Their Use - available from the AES). A final photograph showed Sam Burrage, a local TV presenter, and his camera-man, filming part of my visit with Craig, Ian and Kevin Segebarth and Bill Black in Paducah, south-western Kentucky, where we encountered some additional *Catocala* species.

**Some Butterflies from Southern Italy. taken in the summer of 2004 – Peter Russell (8977)**

*Parnassius mnemosyne* L. was common at two mountainous localities. At first glance it resembled *Aporia cretaegi* L. but the flight of the two species was rather different and the differences in wing shape and pattern could be seen from the examples in the exhibit. It was shown that the large race of *Pieris napi* L. with a faintly marked underside, f. *meridionalis*, was found in this region together with *Pieris ergane* Geyer. The Fritillaries were well represented and the following species were shown for comparison: *Argynnis pandora* D. & S., *A. paphia* L., *A. aglaja* L., the f *cleodoxa* of *A. adippe* D. & S. and the f *eris* of *A. niobe* L.. *Melitaea phoebe* D. & S. demonstrated its usual wide variation in both size and wing colour in both males and females. The two rather similar species *Melitaea didyma* Esper and *M. trivia* D. & S. were found in the same general area and these were shown for comparison.

Three species of *Melanargia* were often seen flying on the same hillsides: *M. galathea* L., *M. russiae* Esper and *M. arge* Suizer. They were almost impossible to tell apart at a distance in flight but the distinctness of their uppersides and undersides was demonstrated in the display. Both sexes of *Hipparchia fagi* Scopoli and *H. genava* Fruhst. can usually be separated on the basis of size and this was visible from the two males of each species in the exhibit. On the other hand, both males and females of *Hipparchia semele* L. and *H neapolitana* Stauder are almost identical in size and very similar in their wing pattern and colour. It could be seen from the examples shown, that *neapolitana* has a little more of the orange colour in the interneural spaces of the postdiscal area of the hindwing uppersides; however, dissection of the male genitalia is required to be sure of positive identification at species level. Examples of *Coenonympha arcania* L., the most common Small Heath of this region, completed the exhibit.

**A New Aberration of the Clouded Yellow *Colias croceus* (Geoffroy) (Lepidoptera: Pieridae) – Robin James (5005)**

Photographs of a spectacular melanic, amethystine flushed aberration of the Clouded Yellow were exhibited. The stock originated from Southern Spain in April 2004.

The aberration appeared in the second generation of adults bred from random pairings. All adults form first generation appeared to be typical. The larvae were fed on Lucerne (*Medigo sativa*) and assorted vetches and reared on a kitchen windowsill.

Six imagines, all male emerged in September. Only two emerged successfully, the others had difficulty in extricating their wings from the pupa. Possibly indicating that the gene responsible has a deleterious effect. It is not thought that the difficulty in emergence was due to environmental factors as typical imagines did so without difficulty.

A single male and female ab. *russwurmi* (Harmer)

**An Albinalistic Blue – Graham R. Smith (4950)**

The 12th September 2004 was quite a remarkable day for me on the Wiltshire Downs. At 10:00am weather conditions were far from ideal with a cool blustery wind and only brief sunny intervals. Butterflies were surprisingly numerous: mostly Adonis Blues *Lysandra bellargus*, Rott., with a few Common Blues *Polyommatus icarus*, Rott., Brown Argus *Aricia agestis*, D&S., and Meadow Browns *Maniola jurtina*, Linn., which flew up quite readily when disturbed. Whilst camcordering various specimens to record autumn downland butterflies as part of the conclusion to this year's filming and habitually keeping an eye open for obsolete forms and the much rarer streaked forms of the various Blues and the Argus, I suddenly froze when I saw a ghostly white butterfly shape with white antennae. My first impression were that it was a piece of paper coincidentally formed like a butterfly and I even considered it may be a practical joke, although I believe this particular stretch of the downs is not visited too frequently by other lepidopterists! If it were a fine day I might well have dismissed it as a Chalk Carpet Moth *Scotopteryx bipunctaria*, Prout, or something similar if on the wing. I boxed up the snowy white specimen and recorded images of it at home using digital cameras and camcorder.

Being such an extreme aberrant I was uncertain of its identity for a while – and that's with a serious interest in Lepidoptera since 1968! The Chalkhill Blue *Lysandra coridon*, Poda., flight period was nearly over

and I didn't observe any but fresh Common Blues were present and not all second brood individuals are smaller than Adonis Blues and the wing shape varies considerably between individuals within all three species. As the Adonis Blue was by far the commonest butterfly (well over thirty in a quarter of a mile stroll-mostly females) the probability weighed heavily with that species. On closer examination it appears to be a female Adonis Blue based merely on the following visual evidence:

The underside submarginal black pupils are arranged in a question mark formation that is characteristic of the genus *Lysandra* (Chalkhill / Adonis Blue type species). In the genus *Polyommatini* (Common Blues type species) the equivalent spotting is either a tidier arc or almost a straight line. The dusting of blue scales confined to the hindwings is not the paler hue of the Chalkhill Blue.

The upperside forewings are devoid of all markings with the exception of greyish near the base of the wings. The underside of the forewings contain somewhat faint black spots of what normally form the centres of the white eye spots. The basal area of the upperside hindwings is dusted with blue and there is a series of orange-yellow sub-marginal lunules with a slight trace of black outline on the inward side. The hindwing underside is dusted with blue around the basal area. A complete series of black pupils and orange submarginal lunules are present with the black outline clearly marked. Only within the inner margin of the underside hindwings an area of typical brown is faintly present forming the familiar eyespot markings. All wings have no trace of chequered borders and the discal spots only appear on the underside of each wing. The antennae are white but black on the club extremities. The body hair is white around the head whilst the thoratic hair is blue and the abdomen is covered with blue and white scales. The images exhibited capture the features of this small aberrant butterfly probably better than exhibiting just one surface of a set specimen.

I cannot find any reference to this form despite searching a wide range of textbooks, which feature aberrants. Perhaps a name such as ab. *albabellargus* or *ultra-albescens* could be bestowed on it? If an equivalent aberration in the male occurs would it be so obvious?

**Bleaches and Blotches Within the UK's Butterflies – Graham R Smith (4950)**

The exhibit was not a collection of true aberrations, which display an expected range of genetical or environmental variation within species, but aims to demonstrate mishaps occurring in nature often termed as

"freaks". I can only speculate as to the reasons for the occurrence of such specimens but likely causes are genetical problems, disease or unusual environmental circumstances. The fact that examples occur more frequently in some populations year after year rather than in others (notably the Browns) would indicate that the characteristics are inherited. Some specimens displayed look rather odd or even grotesque, but the appearance in others may be regarded as an enhancement of the typical form. Probably such specimens are an indicator of poor health, which is detrimental to the species concerned. I have just one pair of eyes and no doubt others with a similar interest may have seen abnormalities in other species but care must be taken as worn and faded specimens can misleadingly give the impression of unusual forms.

Small Skipper *Thymelicus sylvestris* Poda. Female with symmetrical white areas on each forewing. Wiltshire, 3rd Aug 1996.

Essex Skipper *Thymelicus lineola* Ochsenheimer. Female with whitish evident in forewing submarginal areas but much less pronounced than in the above specimen. Wiltshire 20th Jul 2003.

Large Skipper *Ochlodes venata* Bremer & Gray. A worn male with white patches evident beneath the forewing scent scales. Wiltshire, July 1997.

Brimstone *Gonepteryx rhamni* Linn. Female underside with brownish staining causing a brittle wing texture as if part of the wing was dead. Somerset, 18th Aug 1996.

Clouded Yellow *Colias croceus* Geoffrey in Fourcroy. A somewhat bedraggled looking male with whitish streaks on forewing, resulted from a large brood of larvae obtained from a Wiltshire female form *helice* Hubner. Emerged 14th Oct 2000.

Clouded Yellow *Colias croceus* Geoffrey in Fourcroy. A female that appears like a quarter form *helice* but the whitish hindwing is actually "bleached". The corresponding underside is faintly marked with blue grey blotches. This individual was part of a large brood obtained from a Dorset typical female. Emerged 1st Oct 1996, ironically just before the 1996 AES exhibition, when some fabricated but effective typical/*helice* mixtures were exhibited!

Small Copper *Lycaena phlaeas* Linn. Female exhibiting white patches on each forewing but of unequal intensity. Dorset 13th Aug 2003.

Chalkhill Blue *Lysandra coridon* Poda. A female with a pale upper left forewing. Gloucestershire, 20th Aug 2001.

Duke of Burgundy Fritillary *Hamearis lucina* Linn. A reared female with a pale upper left forewing. Gloucestershire origin, emerged 15th May 2004.

Red Admiral *Vanessa atalanta* Linn. A reared male with a pale left hindwing red band. Also it is a true but not uncommon aberrant ab. *fracta*, Tutt, where the red bands are broken on the forewings. Somerset, emerged 14th Oct 1995.

Small Tortoiseshell *Aglais urticae* Linn. A female with bleached patches on the orange ground colour although not obscuring the black markings. Somerset, 19th Apr 1980.

Small Pearl Bordered Fritillary *Boloria selene* Dennis & Schiffermuller. A worn and faded male with a bleached patch on each wing. Somerset, 27th Jun 1976.

Speckled Wood *Parage aegeria* Linn. A male with "bleached" hindwing. Somerset, 17th Aug 2004.

Wall Brown *Lasiommata megera* Linn. A male with a bleach mark on each wing. This is NOT a British specimen as it was taken on the Isle of Capri, Italy on 11th Aug 1973. I mentioned it in an article appearing in May 1974 Bulletin, Vol 33, No. 303. It could be added that the specimen seems transitional to the smaller and more lightly marked subspecies, *paramegera*, Hubner.

Marbled White *Melenargia galathea* Linn. Underside of forewing and malformed hindwing (rightside) has markings indistinct or absent. Somerset, 10th Jul 1995.

Hedge Brown *Pyronia tithonus* Linn. Male with a bleached white blotch on both left hand forewing and hindwing and also a minor and frequent true aberrant ab. *tithonellus*, Strand. Wiltshire, 20th Jul 2000.

Hedge Brown *Pyronia tithonus* Linn. Male with whitish around submarginal areas of forewing. Wiltshire, 2nd August 1997.

Hedge Brown *Pyronia tithonus* Linn. Female with a bleached upperside left forewing. Somerset 4th Aug 1982. Such specimens of this species and other "Browns" are labelled as ab. *partimtransformis* Leeds, although they are not regarded as true aberrants.

Meadow Brown *Maniola jurtina* Linn. A highly bleached almost symmetrical female. Somerset 2nd Aug 1972.

Meadow Brown *Maniola jurtina* Linn. Male with almost symmetrical bleached streaks. Somerset, 7th Jul 2001.

Meadow Brown *Maniola jurtina* Linn. Male with a bleached white blotch on both left hand forewing and hindwing. Hampshire, 11th Jul 1993.

Meadow Brown *Maniola jurtina* Linn. The most frequently encountered form (asymmetric). A male with one hindwing whitish. Gloucestershire, 1st Aug 1999.

Meadow Brown *Maniola jurtina* Linn. A female underside with hindwing whitish. Dorset, 11th Aug 1998.

Small Heath *Coenonympha pamphilus* Linn. A rather worn male with bleaching on submarginal areas of forewings that could have been caused by contact with moisture. Somerset, 9th Aug 1998.

Ringlet *Aphantopus hyperanthus* Linn. A male with pale hindwings. The occurrence of *partimtransformis* in this species is proportionately much less frequent than in the Meadow Brown. Somerset, 22nd Jun 1989.

Ringlet *Aphantopus hyperanthus* Linn. Male upperside with whitish streaks and a malformed left forewing. Somerset, 8th Jul 2000.

Ringlet *Aphantopus hyperanthus* Linn. Male underside with asymmetrical pale underside forewings and hindwings (left). Somerset, 13th Jul 1997.

Ringlet *Aphantopus hypertathus* Linn. Perhaps the strangest of them all, a male underside with abnormal development of yellow scales (right hindwing). The wing is also "shot-holed" giving the illusion that one of the eyespots has exploded. The forewing also shows abnormal markings. 4th Jul 1992.

**The Simpson Collection of Entomological Memorabilia – Malcolm Simpson (4859)**

Photographs of a number of interesting items of equipment which have been added to the Collection over the past year.

1. An unusually large, 9" x 7", oval zinc collecting tin.
2. 5" x 2" dia. Gardner's "New Killing Bottle". Circa 1900. Purchased off the Internet.
3. A varied selection of entomological pins. Mostly donated by Eric Gowing-Scopes.
4. 7" high. 5" wide. 2" deep mahogany box with glass front and back. Can anyone please advise me what it is?
5. A sugaring mixture tin with brush inside. 6" high, made of zinc.
6. 8" high, 4" dia. zinc and glass larvae rearing cage.
7. 9" high 4" dia. 'Bulls eye entomologist's lantern. Made in Canada.
8. Zinc and glass larvae rearing cage 7" high. 9" long. 5" deep, as sold by L.H. Newman in the 1950's.
9. A scissor net. 9" long overall, 5" dia. net opening.
10. A self-dosing umbrella pattern spring ring net, 31" long with 19" opening. Circa 1900.
11. Michael Chalmers-Hunt's own kite net.
12. An extending cane and brass net handle, 14" long extending to 44".
13. Silver entomological pins in original E.H. Meek box.
14. loz No.18 gilt pins in original Edelsten & Williams box.
15. 7" x4" x 2" zinc relaxing tin.
16. 8" x 6" x 3" black painted setting board case, complete with 11 micro math setting boards.
17. A Watkins & Doncaster inspection stage, circa 1950's.
18. 4" long, 1" dia. lens magnifying glass.
19. A Janson self-closing, umbrella pattern, 18" sweep net.
20. An unusual butterfly net having an 18" long aluminium screw-on handle. When the handle is screwed into the aluminium Y piece the chrome plated steel spring ring opens out to approx 15" dia.

Can anyone please provide any information on date, manufacturer and country of origin?

21. A "fit any stick" net.

ITEMS: 1,5,6,7,8.9,10.11,12,13,14,15,21 - All from the Chalmers-Hunt Museum. Kindly donated by Mrs Chalmers-Hunt

ITEMS: 4,16,17,20 - Once belonging to Dr J.D. Bradley. Kindly donated by his son, Michael.

ITEMS: 3.18,19. Kindly donated by Eric Gowing Scopes.

**BENHS Heathland Flies Project – Stephen Miles (4415)**

The exhibit showed aspects arising out of the *BENHS Heathland Flies Project*. This BAP project, with up to fifteen participating BENHS members, has for the last five years been looking at the species recovery aspects for the following flies, the Mottled Bee-fly, *Thyridanthrax fenestratus*, Heath Bee-fly, *Bombylius minor* and the hoverfly *Chrysotoxum octomaculatum*. Most progress has been made with the two bee-flies. The 8ft long display panel exhibit showed enlarged photographs of these two species and their hosts, and aspects of their life-history particularly in relation to the problem of so-called improvements to the microhabitat of bare ground. This habitat is most often represented on heathlands by paths and tracks, which sadly often get covered with hardening materials to the detriment of heathland bees and wasps and their parasitoids, such as the bee-flies.

Some copies of the single A4 sheet, a Proposed Code of Conduct for the Management of Heathland Paths and Tracks, written by Stephen were available free to interested persons.

**Some noteworthy moths and photographs from London Zoo – Len Winokur (8070)**

A joint exhibit with Paul Waring (4220) arising from London Zoo's first ever insect recording session on the afternoon and night of 17 July 2004. Len exhibited some of the surprises that will turn up even in central London, while Paul displayed photos portraying the camaraderie that accompanies the serious science. The photographs were taken by the zoo's Keeper of Invertebrates, Paul Pearce-Kelly, who was one of our hosts.

Our other host was Kevin Frediani, Plant Curator. Indeed species recording served not only to assess the local biodiversity, but also to inform the management of the habitats and native flora present within the grounds. The meeting was a collaborative venture with the British Entomological and Natural History Society and served an important educational function in providing a forum for members of the public to see and ask what we entomologists get up to.

The first photograph showed Paul, with Ken and Rita Merrifield, gathered round a beating tray of Golden Hop *Humulus lupulus* L. leaves in the wildlife garden. They were hoping to find Buttoned Snout moth *Hypena rostralis* L. – a UK Biodiversity Action Plan species. The next photo showed the very larva that proved it to be present. The other two photos were taken at night and included one of Paul, sporting a Hawaiian shirt, at a Robinson light trap beneath palm trees near the zoo's iconic dung-beetle statue.

Society members naturally invited friends, family and colleagues, and among the guests was Dr Rebecca Ellis, a researcher from Lancaster University who was interviewing us to find out what fires our interest and makes us tick. The fourth photo showed Rebecca and Len inspecting the insect arrivals at a mercury vapour light and sheet. This light was set up on the 'Woodland Walk' that borders the Regents Canal at the north of the zoo, at a spot near the aye-aye compound. A second light and sheet, further west along the Walk near the meerkat compound, was run by Len's colleague Alan K. Phillips of Fareham.

Specimens from both lights were among the species exhibited, which were selected on account of their conservation priority; their history of colonisation and expansion in the London area; their quirks of life history and behaviour; or because of the difficulties in observing or identifying them:

**Buttoned Snout** *Hypena rostralis* L.

Len had to adopt his butterfly net as a makeshift beating tray, using its rim to rap the other Golden Hop plant and its bag to collect any fallout, when another, smaller larva was discovered. Such is the wanton versatility of the butterfly net! The moth emerged on the glorious 12th August and was exhibited with the empty pupal case. These were arranged alongside Paul's photographs so that AES attendees might visualise the life cycle ongoing as they looked.

**Slender Brindle** *Apamea scolopacina* Esper

Though common in southern and central England where its caterpillars eat woodland grasses in rides and clearings, it was quite a turn-up as it is usually associated with larger wooded expanses. Its presence within the zoo vouches for the importance of such habitat oases, and which can reveal just which features of a species' environment are key to its survival.

**Least Carpet** *Idaea rusticata* Denis & Schiffermüller

A moth first discovered in London – in 1831, and which in the mid-20th Century began spreading along the Thames and colonising other spots in the south – and still does today.

**European Corn-borer** *Ostrinia nubilalis* Hübner

Another coloniser of London and the Thames, this one first materialising as a resident a century later. Abroad it is a serious maize pest, but here it is well

established on waste ground where it breeds on Mugwort *Artemisia vulgaris*. Abroad, it also uses *Cannabis*!

**Water Veneer** *Acentria ephemerella* D. & S.

A Pyralid that can be considered the 'moth mayfly' in having sub-aquatic early stages and fairy-like adults that live just two days. The mostly wingless females give a new meaning to the 'butterfly stroke' in that they can swim! Mating occurs on the water surface when the males leave a wake like a whirligig beetle's. They were numerous at the sheets: indeed on hot nights they may swarm. Foodplants include biology teachers' favourite water weed – *Elodea*, to a depth of two metres.

**Ringed China-mark** *Parapoynx stratiotata* L.

Another aquatic species, only more local. The caterpillar of this one, which also feeds on various water plants, breathes by wriggling to aid gaseous exchange. The underwater cocoon is coloured pink.

***Euzophyra pinguis*** Haworth

Despite its distinctive 'Razor Shell' pattern it has no English name: suggestions anyone? The moths roost high in Ash trees and so are rarely seen by day; the caterpillars live beneath the bark. A local species, from Yorkshire southwards.

**Garden Elder Pearl *Phlyctaenia coronata*** Hufnagel

A common elder specialist south of Durham and Lancashire, this one was taken beneath elder at the more easterly situated light on the Woodland Walk.

***Chrysoteucha culmella*** L.

One of Britain's commonest insects but which benefits at London Zoo from the conservation of one of the rarest, the fully protected Field Cricket *Gryllus campestris* (L.): odd individuals of this uninspiring looking moth flew up when disturbed amidst grass in the Cricket pen. Under the light of the MV bulbs, however, the males appeared a gleaming metallic gold. A browner female was also exhibited.

***Conobathra (Acrobasis) repandana*** Fabricius

An often common Oakwood species south of Durham. The moths hide away in dense foliage but can be flushed out by day and visit light.

**Thistle Ermine** *Myelois circumvoluta* Fourcroy

This one unusually at light: it is usually found at rest on thistles by day. Exhibited alongside the much smaller Bird-cherry Ermine *Yponomeuta evonymella* which is often mistaken for it when encountered alone.

**Bird-cherry Ermine** *Yponomeuta evonymella* L.

Can be a pest! Distinguishable from closely related species by its 5 rows of black forewing spots.

**Common Rustic** *Mesapamea secalis* L. or **Lesser Common Rustic** *M. didyma* Esper

A specimen whose identification will require dissection of the genitalia to determine which of these two virtually identical species it is.

**The Uncertain** *Haplodrina alsines* Brahm

A fresh example showing how the forewings give a stronger impression of having a central crossband than the very similar Rustic *H. blanda* D. & S. A worn example was also exhibited to show how the separation of older or less intensely marked specimens from *H. blanda* really can be more... uncertain.

**Common Footman** *Eilema lurideola* Zincken

The only member of the Tiger moths family – Arctiidae – to be recorded on the night.

It should be remembered that even the 'everyday' species not exhibited were significant in being firsts for the site. Paul Waring, who led the meeting, has published a fuller account in the BENHS Journal. Copies of this report and the field notes have been supplied to Kevin and to Paul Pearce-Kelly for the Zoological Society of London records.

## Two weeks in Himmaros, North Greece, surveying the moths of Lake Kerkini Nature Reserve – Roy McCormick (3375)

I was invited to run moth traps in, as far as anybody knows, a hitherto untrapped area for the Lepidoptera; Gordon Ramell, who lives at Himmaros (a little village just outside the Kerkini Reserve) had studied the butterflies of the region, but had little experience of the moth populations. Mavis and I arranged to visit Gordon in June 2004 from 9th to 22nd and we stayed with him for these two weeks. Five sites were surveyed with M/V light traps which I had taken with me. These were ultra lightweight fully collapsible traps, but even they weighed in at FIVE kilo each with the heaviest part being the choke unit; a lot of e-mails were sent to airport security to let them know I would be carrying what would look like bomb making equipment, but in the end it was decided these could travel in the hold luggage so I took a couple of extra bulbs with me just in case; this was proved unnecessary as all the bulbs survived the experience.

It was a surprise to me how many species were common to both countries. I was able to identify at least 50% of the species we saw and brought back to Gordon's place anything which was unidentifiable or could be a local (country) variety of species I thought could be the same as the U.K.ones. The airport were told that I would be carrying specimens back with me to the U.K. and in the end I finished up bringing through around 200 which had, mostly, been set but were all pinned; I was very surprised that the combined 200 pins did not set off any alarms because this lot was in my cabin luggage. The setting process was very short because of the very dry heat in Greece, which is

why I was able to bring back mostly set specimens. A word of warning to anybody contemplating going to Greece to collect – never leave setting boards full of set specimens unprotected. I left three boards on a window sill, INSIDE Gordon's house, and in the morning there were hundreds of small red ants devouring the specimens; which is why I have wings stuck to bits of paper in this display as this was all I could salvage.

Species that you expect to find on coastal regions here could be found half way up a mountain, moths like *E. caniola*, *T. smaragdaria* and *I. degeneraria*, could be found on most of the sites we visited, all well inland. The most common of all the moths were the *Catocalids*; we found four species with *C.eutychea* as common as our own favourite, *N. pronuba*, and yes we got that as well. In the second week we started to find *C. nymphaea*, one of the larger species common in our traps. I have left out all the English names because they mean little to the Greeks, and I have tried to put the species in order as near as possible. Some of my identifications may not be correct as I could find little literature on the European Lepidoptera. Books I had at my disposal were: Die Zünslerartigen (Pyraloidea) Mitteleuropas; Noctuidae Europaea, the volumes published; European Geometridae, the volumes published and the re-print of Culot; a couple of the species names were gleaned from other publications, but there seems to be little or nothing on groups like *Lasiocampidae, Arctiidae, Thyatiridae* or *Notodontidae*. Some of the identifications taken were from our own publications like 'Moths of the British Isles' by B.F.Skinner and 'British Pyralid Moths' by B.Goater. We moan about midges, mosquitoes and other pesky flies which are attracted to our lights, well consider this, on one of our trips to a wetland habitat we had a variety of these flies along with several species of very small beetles around our traps which half way through the night could be scooped up by the hand-full; they were at least three inches deep on the wetland side of the traps and the traps had to be hosed down before I could bring them back to the U.K. Along with these flies etc, we always had hundreds of beetles like a rose chaffer, the shiny green ones. All in all a very interesting experience which I plan to do again, providing Gordon is still there.

## Interesting species seen in Devon during 2004 – Roy McCormick (3375)

16 *Hepialus hecta* Linn., Gold Swift. Quoditchmoor, Near Ashwater, 29 May 2004

373 *Synanthedon tipuliformis* Cl., Currant Clearwing. Kenwith valley, 07 June 2004, Stephen Hatch. 3 attracted to pheromones

383 *Synansphecia muscaeformis* Esp., Thrift Clearwing. Westward Ho!, 14 June 2004, Stephen Hatch. 11 attracted to pheromones

1123 *Ancylis laetana* Fab. Two new sites in the Hatherleigh area

1262 *Cydia amplana* Hübn. 9 & 13.8.2004, two of several seen in Teignmouth also seen at other sites in Devon.

1356a *Evergestis limbata* Linn. Kingsteignton, 15 July 2004, Brian King. A new record for Devon

1358 *Evergestis pallidata* Hufn. Exminster Marshes, 23 July 2004, Mark Young and Axmouth Saltings, 4.8.2004.

1367 *Pyrausta cingulata* Linn. Braunton Burrows, 02 May 2004, and again in August, Stephen Hatch

1635 *Malacosoma castrensis* Linn., Ground Lackey Axmouth Saltings, 29 July 2004, larvae were found common in June by Barry Henwood

1655 *Tethea or* D.& S., Poplar Lutestring. Coombe Meadow, Near Hatherleigh, June 2004. The species is now found in at least four sites in the Hatherleigh area.

1682 *Timandra comae* Schmidt, Blood-vein. Garden Lodge, Wembury, Near Plymouth, 26 July 2004. This over-all red form taken by Paul Stubbs and now in my collection.

1694 *Scopula ternata* Schrank, Smoky Wave. Challacombe Farm, Dartmoor, 05 July 2004. Redlake, South Dartmoor, 29 June 2004. Braunton Burrows, 02 June 2004 Headland Warren, Dartmoor, 15 June 2004

1728 *Xanthorhoe fluctuata* Linn., Garden Carpet. This miniature specimen taken at Treedown Farm, near Bow on 6 May 2004.

1801 *Perizoma taeniata* Steph., Barred Carpet. Watersmeet, 12 July 2004. The species has now been found in 4 1k squares in the Watersmeet valley, this date and previous visits only males were seen

1804 *Perizoma bifaciata* Haw. Barred Rivulet. One of three specimens seen at Wembury on 15 August 2004

1812 *Eupithecia inturbata* Hübn., Maple Pug. Axmouth Saltings, 29 July 2004, also one in my garden at Teignmouth, 1 August 2004

1818 *Eupithecia irriguata* Hübn., Marbled Pug. Lewmoor, near Hatherleigh, 14 April 2004. This is a new site for the species in Devon

1842 *Eupithecia simpliciata* Haw., Plain Pug. Axmouth Saltings, 29 July 2004

1873 *Venusia cambrica* Curtis, Welsh Wave. Watersmeet, 12 July 2004, several seen throughout the valley

1921 *Crocalis elinguaria* Linn., Scalloped Oak. This specimen taken in Teignmouth 8 July 2004; a very small example with odd shaped band.

1931 *Biston betularia* Linn., Peppered Moth. This odd colour form taken at Teignmouth on 15.July 2004

1951 *Aethalura punctulata* D.& S., Grey Birch. Stover Park 4 June 2004

1973 *Acherontia atropos* Linn., Death's-head Hawk-moth. Exeter, St. Thomas, 3 larvae found in a garden under a bush of Black Nightshade (a cultivar of)

from 15 to 23 September 2004; there are a least four more sightings in the Exeter area since the first of these 3 was publicised in a local newspaper.

1983 *Hemaris fuciformis* Linn., Broad-bordered Bee Hawk-moth. Roborough Down, North Plymouth, 28 June 2004, observed by Peter Norwood who photographed the moth; this has been verified with a picture retained

1990 *Hyles livornica* Esp., Striped Hawk-moth. Tavistock, 9 June 2004, Fred Slatter in his light trap and confirmed by me

1996 *Furcula bifida* Brahm., Poplar Kitten. Coombe Meadow, Near Hatherleigh, 9 July 2004, Rob Wolton, the first confirmed specimen in Devon since the last one was recorded in 1997

2009 *Ptilodontella cucullina* D.& S., Maple Prominent Watersmeet, 12 July 2004. This is a site where this species is seen on a regular basis.

2022 *Thaumetopoea processionea* Linn. Oak Processionary. This specimen, a first for Devon, taken in Teignmouth on 9 August 2004

2039 *Atolmis rubricollis* Linn., Red-necked Footman. Lydford B.C. Reserve, seen on 05 June 2004, Jim & Cath Braven; an infrequently seen species in Devon

2051 *Lithosia quadra* Linn., Four-spotted Footman. Warleigh Point Nature Reserve, Plymouth 6 August 2004, Lopwell Dam, 17 July 2004. Seen by members of Devon moth Group

2080 *Euxoa obelisca grisea* Tutt., Square-spot Dart. The first specimen recorded since 1999, this one at Hartland Point, 31 August 2004

2140 *Cerastis leucographa* D.& S., White-marked. Lewmoor, near Hatherleigh, 14 April 2004. This is a new site for this species in Devon

2159 *Lacanobia suasa* D.& S., Dog's Tooth. Axmouth Saltings, 04 August 2004, two worn specimens seen

2185 *Orthosia populeti* Fab., Lead-coloured Drab. Coombe Meadow, Near Hatherleigh, 14 April 2004; the species can now be found in at least four 1km squares in the Hatherleigh area.

2235 *Lithophane semibrunnea* Haw., Tawny Pinion. Seen at Wembury, Near Plymouth, April 2004 and Axmouth, 11 April 2004.

2241 *Xylena vetusta* Hübn., Red Sword-grass. Hatherleigh area, 26 October 2003 with several sightings in April time and Watersmeet, 01 May 2004

2261 *Conistra erythrocephala* D.& S., Red-headed Chestnut. Shaugh Prior, Shaugh Bridge, Dartmoor, 12 February 2004, Andy Trout; this male is the first in Devon since Victoria County History (1906) time.

2277 *Moma alpium* Borkh., Scarce Merveille du Jour. Rosemoor Gardens, Great Torrington, 26 June 2004, recorded from a trap I have sited at the Gardens, which now adds another 1km square for the species along the Torrington valley

2279 *Acronicta aceris* Linn., Sycamore. Sampford Peverell, Near Tiverton, 15 July 2004, Waggs Plot Farm, Near Axminster, June 2004, and Holyford Wood, near Colyford, 17 July 2004.

2291 *Craniophora ligustri* D.& S., Coronet. This overall black one from Tavistock, July 2004

2301 *Dypterygia scabriuscula* Linn., Bird's Wing. Rosemoor Gardens, Great Torrington, 19 June 2004, This area seems to be a reliable place to see this species.

2312 *Ipimorpha subtusa* D.& S., The Olive. Hatherleigh area, 10 July 2004 and Treedown Farm, near Bow on 13 August 2004.

2377 *Arenostola phragmitidis* Hübn., Fen Wainscot. Axmouth Saltings, 04 August 2004, a species that has not been recorded for a few years

2412 *Deltote uncula* Cl., Silver Hook. Tavistock, 4 June 2004, a rarely recorded species confirmed by description and drawing of the moth.

2465 *Tyta luctuosa* D.& S., Four-spotted. Dunsdon Farm, near Holsworthy (NNR), 6 June 2004, netted by John Gregory with the specimen being retained, but I did not get sight of the moth and it was poor condition.

2470 *Phytometra viridaria* Cl., Small Purple-barred. Whiteleigh Meadows, Hatherleigh, 22 May 2004. This rarely seen species was recorded by Rob Wolton, who has been responsible for most of the Hatherleigh based records of the aspen feeding species.

2478 *Hypena obsitalis* Hübn., Bloxworth Snout. This specimen which was one of three seen in the old army installation at Prawle Point on 1 February 2004. (Entomologist's Record, 116: 90), where I say that this is probably the first published record of the species being seen overwintering in the wild in Great Britain).

2482 *Schrankia taenialis* Hübn., White lined Snout. This almost black specimen was taken at Teignmouth, 10 August 2004.

## Interesting species seen on a trip to the Lake District and Scotland, 2004 – Roy McCormick (3375)

1029 *Eana osseana* Scop. Several at Grey Knott, Cumbria on 22 July 2004; striated and brown forms

1298 *Crambus ericella* Hübn. Only the one seen at Grey Knott, Cumbria on 22 July 2004

1300 *Crambus pratella* Linn. One at Bowerstone, Cumbria on 22 July 2004

1393 *Udea uliginosalis* Steph. Meall nan Tarmachan, near top, 25 July 2004. Males and females flying in grass

1770 *Thera cognata* Thunb., Chestnut-coloured Carpet. This specimen taken at Cairngorm on 25 July 2004

1723 *Xanthorhoe decoloraria decoloraria* Esp., Red Carpet. Meall nan Tarmachan, Cairngorm and Duthill, 24 and 25 July 2004

1744 *Entephria caesiata* D.& S., Grey Mountain Moth. Cairngorm, 24 and 25 July 2004, various forms including this banded variety

1772 *Eustroma reticulatum* D.& S. netted Carpet. This asymmetrical specimen taken on 23 July 2004 at Lake Coniston, Cumbria

1774 *Colostygia olivata* D.& S., Beech-green Carpet. Lake Coniston, 22 & 23 July 2004

1805 *Perizoma minorata ericetata* Treit., Heath Rivulet. Cairngorm, 24 July 2004. A few days earlier the moth was seen commonly, but only four were seen on this date along with *P. albulata* D.& S. Grass Rivulet which was abundant.

1938 *Selidosema brunnearia scandinaviaria* Vill. Bordered Grey. Meathop Moss, 22 July 2004, several seen mostly males during the day

One further interesting species from Dorset

1675 *Cyclophora pendularia* Cl., Dingy Mocha From a known Dorset locality. Larva on 28 August 2004, Beaten from sallow, varying sizes; imagoes emerging mid to end September 2004, with some laying over.

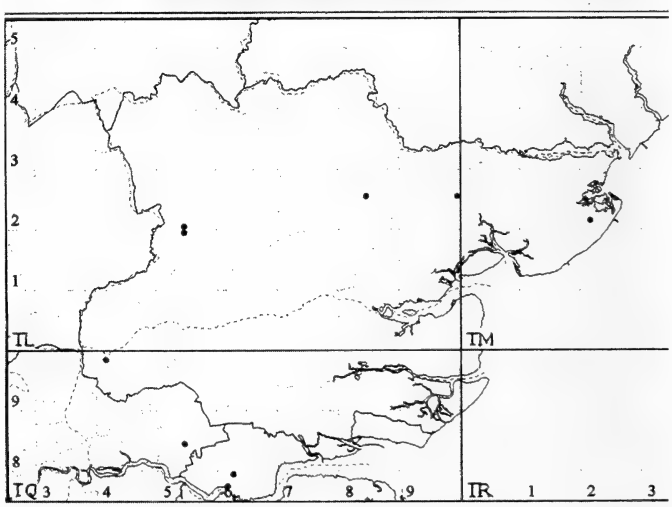
# *Arhopalus rusticus* Linnaeus 1758 In Essex and Surrey. Part 2

*by Keith C. Lewis (3680)*

*Top Flat, 108 Park View Road, Welling, Kent, and DA16 1SJ.*

The following records of the beetle *Arhopalus rusticus* listed below are for the counties of Essex and Surrey. Part one; records for Kent can be found in the *Bulletin*, Volume 64, April 2005. Photograph fig 1 of beetle having just emerged from its exit tunnel.

**Arhopalus rusticus in Essex**

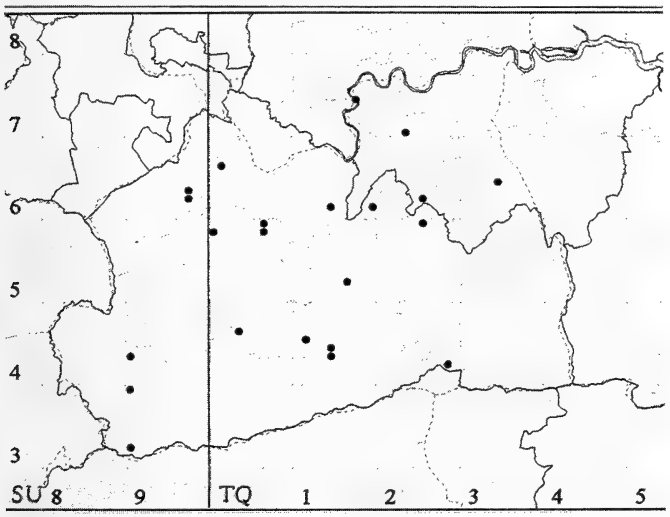



Map 1. *Arhopalus rusticus* in Essex.

## Essex Records. Map 1. larvae*

| Date | Location | Site | Habitat | Recorder |
|---|---|---|---|---|
| 30. 07. 1948 | Near Grays | TQ6279 | Not recorded | Maidstone Museum |
| 10. 08. 1948 | Near Grays | TQ6177 | Not recorded | Kaufmann R. R. Dr |
| 05. 08. 1964 | Hornchurch | TQ5484 | Pine stump larvae* | Lewis K. C |
| 01. 07. 1965 | High Beech | TQ4198 | Snapped pine larvae* | Lewis K. C |
| 00.00. 1973 | Hatfield Forest | TL5419 | Not recorded | British Museum |
| 00. 00. 1985 | Hatfield Forest | TL5520 | On pine log | Allen A. A. |
| 00. 05. 1988 | Near Colchester | TL9925 | Museum record | Unknown |
| 13. 07. 1996 | Kirby-le-Soken | TM2121 | M.V. light | Berghahi P. |
| 15. 08. 1996 | Marks Hall | TL8025 | Seven under log | Cuming N. St. J. |

## Arhopalus rusticus in Surrey




Map 2. *Arhopalus rusticus* in Kent.

## Surrey Records Map 2. Pupa **

| | | | | |
|---|---|---|---|---|
| 16. 08. 1907 | Woking | Not listed | Not recorded | Donisthorpe H. St. J. |
| 27. 08. 1909 | Woking | Not listed | On pine | Champion G. C. |
| 20. 07. 1912 | Woking | Not listed | Not recorded | Champion G. C. |
| 21. 07. 1912 | Woking | Not listed | Under bark ** | Power W. A. |
| 00. 06. 1924 | Richmond Park | Not listed | Not recorded | Tottenham |
| 00. 00. 1926 | Easher Common | TQ1961 | Not recorded | Twinn P. F. G. Dr |
| 27. 07. 1927 | Blackheath | TQ0346 | Birch stump | Goodman O. R. |

| | | | | |
|---|---|---|---|---|
| 00. 00. 1946 | Near Croydon | TQ3565 | Not recorded | Duffy A. J. |
| 00. 08. 1950 | Banstead | TQ2559 | Not recorded | Twinn P. F. G. Dr. |
| 05. 08. 1953 | Haslemere, Marley | SU9032 | Not recorded | Ansorge E. Sir. |
| 00. 07. 1974 | Wisley Common | TQ0659 | On pine log | Owen J. A. |
| 02. 07. 1978 | Near Chobham | SU9762 | Not recorded | Sutcliff A. junior. |
| 00. 08. 1978 | Near Oxshott | TQ1461 | On pine log | J. A. Owen. |
| 07. 07. 1982 | Lyne | TQ0166 | Not recorded | Twinn P. F. G. Dr. |
| 20. 08. 1984 | Abinger Nr Dorking | TQ1145 | M.V.light | N. F. Heal. |
| 29. 07. 1984 | Blackheath | TQ0346 | M.V. light | N. F. Heal. |
| 24. 07. 1989 | Hurst Way Croydon | TQ3464 | M.V. light | Collings G. B. |
| 25. 07. 1989 | Near Chobham | SU9763 | Not recorded | Collings G. B. |
| 02. 08. 1990 | Haslemere | SU9032 | Not recorded | Twinn P. F. G. Dr |
| 25. 06. 1991 | Leath Hill | TQ142442 | Not recorded | Collings G. B. |
| 08. 10. 1991 | Blackbeech + | Surrey + | Not recorded | Collings G. B. |
| 00. 00. 1992 | Wimbledon Comm Nr | TQ2370 | Not recorded | Twinn P. F. G. Dr. |
| 00. 06. 1992 | Belmont Nr Sutton | TQ2562 | Not recorded | Brock A. J. |
| 00. 06. 1992 | Thursley | SU9039 | Not recorded | Fry R. |
| 13. 06. 1992 | Wimbledon Common | TQ4467 | Not recorded | Twinn P. F. G. Dr. |
| 23. 06. 1992 | Horley | TQ2842 | Not recorded | Twinn P. F. G. Dr. |
| 25. 06. 1992 | Leath Hill Nr | TQ1443 | Not recorded | Twinn P. F. G. Dr. |
| 20. 10. 1992 | Wisley Gardens | TQ0658 | Wind snapped pine* | Lewis K. C. |
| 09. 10. 1993 | Druids Grove | TQ1652 | Pine log* | Lewis K. C. |
| 03. 11. 1993 | Elsted | SU9043 | Wind snapped pine | Fry R. |
| 00. 00. 1995 | Thursley | SU9039 | Not recorded | Denton J. S. |
| 00. 02. 1995 | Hurst Way Croydon | TQ3464 | Dead in garden shed | Collings G. B. |
| 00. 00. 1996 | Blackheath | TQ035461 | Not recorded | Denton J. S. |

+ A map reference was not sent to me for this record and I am unable to find the name Black-beech in my reference book or map atlas. Also a number of records have been omitted due to their being sent to me using ordinance survey map references. Ordinance survey records are not accepted using my map generating/recording software. There are also no map references for the first five records for Surrey. These are records for beetles found in the collection of the Natural History Museum, London. Could I kindly ask members who submit records to

use the map reference system as used above, as it is impossible to crosscheck an obscure wood or site that is too small and is not shown by name on either an ordinance survey or other maps.

Figure 1. Bred specimen of *Arhopalus rusticus* emerging from exit hole on the left.

## Acknowledgements

I wish to thank the many coleopterists and Museums for sending me their records c1997-1998.

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# Field meeting report - 1st S.E.L. Field Congress, Study Area Sesvenna, South Tyrol, Italy, 6-11 July 2004

*by Paul Waring (PW) (AES 4220) & Rachel Thomas*

## Introduction

This event was the first ever Field Congress of Societas Europaea Lepidopterologica (the European Lepidopterists' Society). The aim was to gather together members of the society who are active fieldworkers and provide opportunities for them to record the moths and butterflies of an area for which the data would be appreciated, such as in special conservation areas, or localities which are under threat. The event was held in response to many requests from SEL members for more opportunities for fieldwork than are usually provided by the well-established biennial, primarily indoor, Congresses which have been held by SEL since the 1970s will continue in parallel. As the authors of this report have been attending SEL Indoor Congresses and promoting them since 1992 (see Waring, 1994, Waring & Thomas, 1995) and PW, as former Conservation Officer for SEL, and subsequently, has been one of those pushing for more field events, we were delighted to be able to attend this special one and give it our full support. This Field Congress was also included in the BENHS Field Meetings Programme for 2004 because AES and BENHS members frequently approach PW, in his capacity as BENHS Field Meetings Secretary and as leader of the three BENHS expeditions to Belize, requesting expeditions for fieldwork in mainland Europe. Forty seven SEL members registered for the event although a few had last minute problems and were unable to attend. In addition to PW, RT and our four-year old daughter Kirsty, Keith Bland and Mark Shaw also attended from Britain. Both men are members of the AES, BENHS and SEL. PW hopes that other members of the AES may find the account of this event of sufficient interest to consider joining SEL and supporting further Field Congresses. Details of how to join are provided at the end of the article.

## Location and travel arrangements

The location chosen for the Congress was the Sesvenna region of South Tyrol in northern Italy. The area is already known to be rich in species of Lepidoptera and has been adopted by SEL for special study on this and subsequent occasions. The event was well-organised by Sylvia Mader and Gerhard Tarmann, with invaluable assistance from Stefan

Heim. Sylvia arranged all the local accommodation and handled the advance liaison with delegates. Before we set off from Britain we knew that Sylvia had organised for us to be in lodgings on the outskirts of a village with opportunities to run a light-trap from our room out across rural habitats and we had seen photographs of the locality. The Sesvenna is a mountainous region, within the Alps, in which the higher slopes are seasonally grazed by cattle or cut for hay and the lower slopes and valleys are either cultivated for crops and orchards or maintained as pasture or woodland. Some parts are farmed using somewhat traditional, low intensity methods, but increasingly intensive agricultural systems are being adopted, particularly over most of the lower altitudes. This was explained in a series of indoor lectures as part of the Congress. During these lectures the changes to the flora and fauna were also described and the locations of the less altered habitats and their characteristic species identified. Hermann Mantinger from the Research Centre for Agriculture and Forestry, Laimburg, South Tyrol, lectured on "Development of agriculture in the Venosta Valley", Thomas Wilhalm of Naturmuseum Sudtirol, Bolzano, covered "The Flora of the Sesvenna region", and Peter Huemer and Gerhard Tarmann, from Tiroler Landesmuseum Ferdinandeum, Innsbruck, presented heavily illustrated lectures on "The Butterflies of South Tyrol". and "A Bio-database for the SEL Study Area Sesvenna" The database which Gerhard and others have developed already contains an impressive amount of data, which Gerhard was able to demonstrate using overhead displays and distribution maps from his computer. These lectures were most helpful in providing a background and context for our fieldwork, of which our records of larvae and nocturnal Lepidoptera were probably our most valuable contribution to the database. With so many pairs of trained eyes on the day-time excursions, a good number of larvae were found. By night we operated light-traps in groups in remote places and/or by our lodgings. The account below is only what PW observed. It will take more time for all the results to be compiled and entered on the database where they will

feature in the work of all using this resource. BENHS members will be delighted to know that the main language of all SEL congresses is English and that the majority of members are able to converse in English in the field.

Our journey to the Congress involved departure from Peter-borough at 06.40 hrs on 7 July, by rail to Gatwick for a 11.15hrs flight getting us to Innsbruck Airport at 14.15hrs local time, from which we were collected by Stefan and taken to our lodgings at Apartment Noggler in the village of Burgeis. This involved driving for a couple of hours through the mountains, including using tunnels of up to 7km through the bases of mountains. We were unpacking our bags and settling into our apartment by late afternoon. In the evening PW set up his trusty and much travelled "Waring Tropical" actinic light-trap in the balcony of the lodgings, where it was operated on a time-switch all night every night. The locality (Burgeis), the light-trap and the view from the balcony over which the trap collected moths are shown in the accompanying photographs. The mountainside rose up behind the lodgings and was more heavily treed, with mixed broadleaves and conifers. More details of the light-trap, its portability and its other advantages for this type of trip are described by Waring (1999) and in Fry & Waring (2001).

### Moths on arrival

The first moth of the trip for us was a Brimstone moth *Opisthograptis luteolata* (L.) found at rest on the platform of Peterborough railway station. The second was the tiger moth emblem of the Congress – *Arctia flavia* (Fuess.) - on the notice board that Stefan displayed in the arrivals section of Innsbruck Airport to help us locate him easily!

On our arrival Gerhard informed us that the moth season in the Tyrol was running late this year. As an example, he reported that few sphingids had been seen thus far and only the Hummingbird Hawk-moth *Macroglossum stellatarum* (L.) was in any numbers. By the steps up to Apartment Noggler PW noticed a dark-banded form of the Riband Wave *Idaea aversata* (L.) at rest on some low-growing Ivy *Hedera helix* L.. There was a stuffed Badger *Meles meles* L. in the hallway of the Apartment, of local provenance. Having mounted animals near the entrance seemed to be a regional custom; we noted it in several other buildings.

### 7 July – Bordered Gothic at the lodgings

Some delegates ventured out with light-traps for the evening of 7 July, other delegates were still arriving, but as we needed to settle Kirsty in on her first night, we both stayed in the apartment. PW contented himself with running the light-trap on the balcony although it was difficult to contain the urge to head off into the surrounding mountains on what proved to be a good night weather-wise. The following morning there were just over one hundred moths in the trap, of about 25 species. Amongst these the Bordered Gothic *Heliophobus reticulata* (Goeze) and the rather similar *H. kitti* (Schw.) were among the more numerous moths. This was a fantastic and unexpected result. Some readers will be aware of PW's special interest and recent efforts to investigate the status of the Bordered Gothic in Britain, in view of its current decline to virtual extinction, and his keenness to obtain livestock and study the habits of the larvae (see Waring, 2002 & 2004a). On each night of the Congress PW and others captured the species at light and PW came back to the UK with eggs and egg-laying females, from which larvae were subsequently reared to pupation (see Waring, 2004b). This Congress was invaluable in demonstrating a habitat and climate regime in which the Bordered Gothic was widespread and numerous, in the apparent absence of Soapwort *Saponaria officinalis* L. (Caryophyllaceae), the supposed main larval foodplant in Britain. What was noted during the field excursions was that other members of

the Caryophyllaceae were frequent in some areas, particularly Bladder Campion *Silene vulgaris* Garcke, Red Campion *S. dioica* (L.) and pinks *Dianthus* spp.. Rearing the larvae showed that they were able to grow from egg to fully-fed final instar larvae on Soapwort but that they would accept campions. In both cases the developing seed-heads were strongly preferred over the foliage.

**Round-tables for help with identification of moths**

Another feature of the Congress was a daily "Roundtable" in which members brought specimens for identification or confirmation to experts in the group. This was invaluable to PW who was seeing some of the European species for the first time. For example, it was a pleasure to be able to have the diagnostic features and differences between *Heliophobus reticulata* & *H. kitti* explained by Lazlo Ronkay, the internationally respected noctuid specialist and one of the authors of the Noctuidae Europaeae series (Fibiger *et al.*). Lazlo was able to demonstrate diagnostic features with reference to live individuals and to tell us what is known of the larval habits of these and other moths in mainland Europe (see the note at the foot of this report).

**The light-trap catch of 7/8 July**

In addition to *Heliophobus reticulata* & *H. kitti*, the light-trap catch on the first night comprised lots of familiar species including the Heart & Dart, *Agrotis exclamationis* (L.), Dark Swordgrass *Agrotis ipsilon* (Hufn.), Large Yellow Underwing *Noctua pronuba* (L.), Broad-bordered Yellow Underwing *Noctua fimbriata* (Schrb.), the Light Arches *Apamea lithoxylaea* (D. & S.), Clouded-bordered Brindle *A. crenata* (Hufn.), Brown Rustic *Rusina ferruginea* (Esp.), a Small Yellow Underwing *Panemeria tenebrata* (Scop.) and many Silver Y *Autographa gamma* (L.). Noctuids not present in Britain included *Auchnis detersa* (Esp.) a moth with the appearance of a robust shoulderknot (*Lithophane* spp.) and *Lacanobia aliena* (Hbn.). Several *A. detersa* were captured in the trap each night which was of particular interest to PW because the larva feeds on Barberry *Berberis* spp.. PW has a special interest in Barberry in connection with the conservation of the Barberry Carpet moth *Pareulype berberata* (D. & S.) in Britain (see Waring, 2000). Indeed, PW is certain that he saw a Barberry Carpet moth come to this light-trap just before bed-time on this night but the moth was not present for confirmation in the morning. There were rather few geometrids, possibly because the trap was operating at balcony height rather than

nearer the ground. Geometers included the Silver-ground Carpet *Xanthorhoe montanata* (D. & S.) and Tawny-barred Angle *Macaria liturata* (Clerck). The Larch Pug *Eupithecia lariciata* (Frey.) was the only geometrid represented by more than one or two individuals. Members of other families included the Pine Hawk-moth. *Hyloicus pinastri* (L.) and Red-necked Footman *Atolmis rubricollis* (L.).

**8 July – Moth-rich trek through mountains from Taufers to Schleis**

Castle Furstenburg in Burgeis was our base for all the indoor lectures and the Roundtables. It was here on the morning of 8 July that we gathered for the first of two major excursions as a group. This was a guided walk from the ruins of the castle Schloss Rotund near the village of Taufers to the village of Schleis along the historically significant and panoramic Eselsweg trail. This took approximately 5 hours, from 11.00-16.00hrs and involved trekking through some of the most attractive and wildlife-rich mountain scenery in the Alps, with various semi-natural habitats, particularly dry, grassy, herb-rich and rocky steppe, scrubby areas and larch woodland. Kirsty was safely transported in a carrier on PW's back because we were crossing some very steep slopes with considerable drops below and were walking single file. The route is an ancient track for mules and donkeys and was used as a short-cut to carry goods from the Mustair valley in Switzerland to the Reschenpass which has been part of both Austria and Italy at different times. The trail became famous in 1499 when it was used by Swiss soldiers to avoid and then corner and slaughter the massed troops of the Austrian emperor Maximillian I.

The most memorable and pleasing sight was seeing several dozen Nine-spotted moths *Amata phegea* (L.) during the walk. They were well-distributed along the route from the very beginning almost to the end. Many delegates had never seen the species before. It is considered very local in Europe although sometimes, as here, it is numerous where it occurs. The larva feeds on a range of small plants, usually in the early stages of plant colonisation of broken or disturbed ground, such as slippages, or the margins of fields in low-intensity agricultural systems, particularly fallow fields. There were lots of plants in flower where we saw these moths, including Thyme *Thymus* sp., Common Bird's-foot Trefoil *Lotus corniculatus* L., bedstraws *Galium* spp. and mulleins *Verbascum* spp. and the moths were visiting some for nectar at noon and throughout the afternoon. Other individuals were resting on grass-stems and several pairs were seen in copulation. This species is very

obvious and makes no attempt to conceal itself. It flies slowly and was easy to net. The white tips of the antennae were very striking in flight, rather like those of some sawflies and ichneumonid wasps. Several adults of the Transparent Burnet moth *Zygaena purpuralis* (Brnn.) were seen on the mauve flowers of a legume. These burnets were identified by Gerhard Tarmann, who assured us they were not the very similar *Z. minos* (D. & S.), a very much more localised species in the Tyrol.

Butterflies seen on the first stage of the trek included several Woodland Ringlet *Erebia medusa* (D. & S.) on the wing and a Northern Wall Brown *Lasiommata petropolitana* (Fab.) settled on the bark of a tree trunk. Several of the Chimney-sweeper moth *Odezia atrata* (L.) were also noted on the wing. Some larvae of the Striped Lychnis *Shargacucullia lychnitis* (Ramb.) were found on a small Mullein *Verbascum* sp.. A number of the burnet moth *Z. transalpina* (Esp.) (det. Tarmann) were encountered on the flowers of Field Scabious *Knautia arvensis* (L.). The Slender Scotch Burnet *Zygaena loti* (D. & S.) was also recorded. An Apollo butterfly *Parnassius apollo* (L.) was found resting on Dogwood *Cornus sanguinea* L.. It was most reluctant to fly due to the inclement weather. A number of the spiny larvae of the Spotted Fritillary *Melitaea didyma* (Esp.) were found by the path, possibly attempting to bask. An adult Knapweed Fritllary *Melitaea phoebe* (D. & S.) was found at rest in the same location. Sedums *Sedum* spp. and pink-flowered Pinks *Dianthus* spp. were encountered in the middle part of the trek, as was a wild Barberry said by Gerhard and others to be *Berberis vulgaris* L. although it looked rather unlike the form with which PW is very familiar in Britain. These montane Barberry had a denser growth form with smaller, greener leaves with smoother margins but possibly these features are a response to a harsher climate. A Forester moth *Adscita* sp. was netted by one of the delegates who knew that it could be one of about nine possible species. Several more *Z. purpuralis* were seen more than 1km from the first ones, flying in the same place as an Adonis Blue *Lysandra bellargus* (Rott.) and a Grizzled Skipper *Pyrgus malvae* (L.).

We next encountered some oak trees said to be the Downy Oak *Quercus pubescens* Willd. in various local guide books and reports but identified as the Sessile Oak *Q. petraea* (Matt.) by Gerhard because there was no trace of hairs on the leaves. These individuals are the highest oak trees growing in the Alps, at an altitude of about 1600m. There were also clumps of European Larch *Larix decidua* Mill. which have been shown by core samples to be over 1000 years old. Several Speckled Yellow *Pseudopanthera macularia* (L.) were on the wing in

this biotope, which looked very different from the more open meadows at the start of the trek. A larva of the Toadflax Brocade *Calophasia lunula* (Hufn.) about 2cm in length was found on a Toadflax *Linaria* sp. growing under one of the 1000 year old Larch and PW noted a Bright Wave *Idaea ochrata* (Scop.) in the same place. A Grayling butterfly *Hipparchia semele* (L.), was flitting around the rocks by a mountain stream where a pink-flowered *Lychnis* was being visited for nectar by a Knapweed Fritillary. A second Apollo was found here. This species is of course protected by law and was left on site, as indeed were the majority of the insects recorded on the trek. With at least one or two delegates familiar with any species and able to provide a reliable identification, the reasons to collect were much reduced. PW made a video record of most of the Lepidoptera encountered but had little need to collect more than a handful of specimens, thus saving much time in setting and labelling.

At 14.00hrs we stopped under a rocky outcrop for our packed lunches. It was good to be able to take Kirsty off my back-carrier for a few minutes because she weighed 25 kg (over three stone) including her clothes, food and sundries! Some butterflies were flying despite the light rain now falling. A larva of a Hummingbird Hawk-moth about 2cm in length was found on a bedstraw (*Galium* sp.) near the site of the picnic.

After lunch we were hill-walking with more forest and green fields below and clearly leaving the steppe areas which were the most interesting places for the Lepidoptera. A Dingy Skipper *Erynnis tages* (L.) was encountered. We came across a whole area of hillside covered in a multi-stemmed form of *Verbascum* which otherwise looked like the Dark Mullein *V. nigrum* L., with deep yellow petals and a purplish red centre to the flower. At some point Mark Shaw found a larva of the Orange-tip butterfly *Anthocharis cardamines* (L.) feeding on a plant later identified by Thomas Wilhalm as Tower Mustard *Arabis* (*Turritis*) *glabra* (Brassicaceae).

The rain became heavier as we completed the walk. We had seen a great deal of interest despite the weather. After returning to our various accommodations for dry clothes, we were transported to a local hotel for a fine evening meal of traditional South Tyrolean foods and wine accompanied by Stefan playing local folk music on a harp. Professor Niels Kristensen gave a brief and amusing Presidential Address. After the meal the rain was teaming down so none of us went out with light-traps. However, the "Waring Tropical" is designed to cope with heavy rain and it functioned without problem under the deeply overhanging eaves on the balcony of our apartment.

**9 July - Light-trap catches, montane species and barbecue**

The morning of 9 July was beautiful and calm, with a clear blue sky. It was then that photograph 3 showing the view from the apartment was taken. The catch in the balcony trap included a good range of noctuid moths, largely the same species as the previous night, but fewer in number, totalling only about fifty individuals of just over a dozen species. Additional species included the Dark Arches *Apamea monoglypha* (Hufn.), Pale Mottled Willow *Paradrina clavipalpis* (Scop.), Bright-line Brown-eye *Lacanobia oleracea* (L.), Setaceous Hebrew Character *Xestia c-nigrum* (L.) and a Scarce Footman *Eilema complana* (L.).

After lunch Rachel, Kirsty and PW went off with delegate Rolf Morter in his car up to hay meadows high in the mountains just below snow-covered peaks near Taufers. Kirsty fell fast asleep leaning against PW in the car so while PW minded her, Rachel walked about with a net to intercept a few of the Lepidoptera. Several Lewes Wave *Scopula immorata* (L.) were found in a shallow open valley with a waterfall. The flowering herb-rich alpine meadows were an attractive sight to see but unfortunately the weather was windy and overcast and it began to spot with rain soon after we arrived. Some lycaenids were seen including the Small Blue *Cupido minimus* (Fuess.). There was lots of Bladder Campion *Silene vulgaris* Garcke, some Red Campion *S. dioica* (L.) and pinks *Dianthus* spp. in the sward. However, the related

Soapwort was not seen here nor anywhere else during the Congress. Yellow Rattle *Rhinanthus minor* L. and several clovers *Trifolium* spp. were abundant. Other moths we saw included the Latticed Heath *Chiasmia clathrata* (L.), Chimney Sweeper and Silver-ground Carpet. Rolf showed us some strange-looking sooty pyralid moths of the genus *Metaxmeste* which he had collected in his more extensive wanderings in this area, as well as the Almond-eyed Ringlet *Erebia alberganus* (Prunner), the Alpine Heath *Coenonympha gardetta* (Prunner) and more *Z. purpuralis*. On his setting boards in the car he had specimens of the tiger moth *Rhyparia purpurata* (L.) from dry, lower montane habitat and a selection mainly of larger noctuid moths from higher altitudes including the Scarce Brindle *Apamea lateritia, Apamea maillardi* (Geyer), *A. zeta* (Treit.), Reddish Light Arches *A. sublustris* (Esp.), Dark Brocade *Blepharita adusta* (Esp.), Ashworth's Rustic *Xestia ashworthii* (Doubl.), the Shark *Cucullia umbratica* (L.) and *Cucullia lusifuga* (D. & S.). Other moths Rolf had obtained at the higher altitudes included a Dark Bordered Beauty *Epione vespertaria* (L.) at 1100m and some Speckled Footman *Coscinia cribraria* (L.) and the green form of the Barred Red *Hylaea fasciaria* (L.) from 1300m above sea level.

From the high mountain meadows we descended to the village of Taufers, on the outskirts of which a barbecue was being organised for us. While the food was being prepared we set up light-traps, but our mothing session here was not to be. Rain soon began and became so heavy that the sheets and lights were literally rained off. Fortunately there were shelters purpose-built for eating at the barbecue where we consumed chicken, sausages and pollenta (a type of cornbread from maize) and had a most entertaining time.

## 10 July - Light-trap catches, including Essex Emerald and Feathered Ear

Amazingly, the rain continued all night and it was still falling when we awoke well after dawn the next morning (10 July). The catch in my balcony trap comprised thirty species of macro-moth but the only new addition was a Peppered moth *Biston betularia* (L.) of the typical white form. As the morning was time-tabled for the lectures and an identification workshop, followed by lunch, the weather had time to clear up. A cultural trip including a lakeside welcome by local dignitaries and a visit to the Museum of the village of Graun, gave Rachel, Kirsty and PW an opportunity to rest, chat with others and see some local sights, ending with a meal in the late afternoon sun before

Kirsty went off to bed and PW went out on his second major excursion. Quite a number of us went up into the mountain slopes above Taufers, sharing cars. This area is a well-known collecting site which has produced many records of localised moths.

The cloud cover was 90% as each small group set up the gear, dispersed along the valley-side. The air was calm but the cloud broke and it was a cool evening in the mountains. PW was wearing a fleece under a padded overcoat! Wild Privet *Ligustrum vulgare* L. was in full bloom and producing a lovely pungent scent. PW spent a large part of the time with Axel Steiner's group, sitting around his mercury vapour bulb and actinic black-light tube operating in tandem, suspended above a vertical sheet and powered by a generator. PW observed that there were many different designs of light-traps in operation on this night. Axel was not the only one operating an mv bulb and an actinic tube in tandem and the operators considered that more species were obtained as a result. Others were using actinic lights from batteries but generally larger tubes than the 6W frequently used in the UK and USA.

A female *H. kitti* arrived at Axel's lights soon after dark and was retained for eggs. Shortly afterwards she was followed by a male Bordered Gothic. *Ochropleura* (*Albocosta*) *musiva* (Hbn.) was the next interesting moth to arrive, at 22.30hrs. This species is associated with hot dry slopes. It is twice the size of the familiar Flame Shoulder *O. plecta* (L.) with a very striking and distinctive leading edge to the forewing. A male Essex Emerald *Thetidia smaragdaria* (Fab.) arrived a few minutes later. Axel remarked that he sees them in ones and twos per night in various parts of Germany he has worked in recent years. PW noted that a golden central spot and pair of cross-lines were present on the forewings of this individual but that these markings were weaker than in the normal British form, with which this was similar in size. In some parts of Europe individuals are distinctly smaller with obscure markings. After another few minutes the Feathered Ear *Pachetra sagittigera* (Hufn.), *Lacanobia aliena, Agrotis simplonia* (Geyer), *Lygephila viciae* (Hbn.) and the Dew Moth *Setina irrorella* (L.) arrived in quick succession at this light-trapping equipment. The Feathered Ear can vary greatly in wing markings, even within a single site, as it is known to do at this locality. This individual was strongly variegated on the forewings. Others can be uniformly pale or dark. The moth was last seen in Britain in 1963 but formerly had breeding populations in south-east England (Waring *et al*, 2003). Its sward preferences in the UK are poorly documented but the decline and disappearance coincides with the decrease in rabbit-grazing brought

about by the introduction of myxomatosis in the 1950s. The sparsely vegetated slopes at Taufers can be very hot, parched places in the summer and the Feathered Ear has been recorded here in some numbers. There were flowering grass tussocks, scattered shrubs and much exposed rock. *Agrotis simplonia* is generally known as a xerophilic alpine species which has been recorded up to 3000m above sea level in the Alps. It is named after the Simplon Pass in Switzerland.

Manfred Strohle had a most interesting mothing set-up involving two triangular vertical sheets in different orientations, a mv bulb and a black mv bulb in tandem and a string of about a dozen pheromone lures tied like sausages along the length of a lady's stocking. He did not appear to be obtaining noticeably more moths than Axel but he was in a location with more trees and shrubs and PW noted a number of species on the sheet which he had not yet seen during the evening. These included a slightly worn Cream-spot Tiger *Arctia villica* (L.), the Mottled Beauty *Alcis repandata* (L.), Barred Yellow *Cidaria fulvata* (Forst.), Swallow-tailed Moth *Ourapteryx sambucaria* (L.), Large Emerald *Geometra papilionaria* (L.) , Scalloped Hazel *Odontopera bidentata* (Clerck), Netted Pug *Eupithecia venosata* (Fab.) and a *Euphyia frustata* (Treit.).

Axel shared with PW a tip which keeps moths relaxed for about a week after killing. This involves injecting a small amount of ammonia into the thorax after the moth has been removed from the cyanide bottle. Apparently the ammonia does not interfere with the wing colours provided it is injected. Using this tip moths can be set immediately on returning from a short trip without the need for special and time-consuming relaxing procedures.

At midnight rain started and the light-trappers began to pack up the gear. PW helped Peter carry his two actinic lights which he set up within a 2m tall white netting shroud to obtain his moths and was grateful to him for providing a lift back to Burgeis.

**11 July – Conclusions and departure**

On 11 July we were ready for collection by Stefan Heim at 10.00hrs, having added only the Grey Pine Carpet *Thera obeliscata* (Hbn.) and the Clay *Mythimna ferrago* (Fab.) to the list from the balcony trap during the night. Over the four nights this small trap had recorded only about forty species of macro-moths, which was a small fraction of the species we recorded in our exploration of the region. The balcony trap

was evidently picking up mainly species closely associated with the altered habitats in the village; many of these are also numerous in gardens in Britain. From the numbers of Bordered Gothic seen (at least half a dozen each night), this species must also have been breeding around the village, probably in the flowery roadside verges and the edges of field, as well as in the higher semi-natural habitats where we also trapped it in numbers.

It was cloudy as we left Burgeis and we saw much fresh snow had fallen on the mountain-tops and upper slopes. We had a hot lunch including schnitzel at Innsbruck Airport and by late afternoon the trains between Gatwick and Peterborough had delivered us home. The approximate cost of the trip for the three of us was £720 including flights £320, rail fares £117, accommodation £140 and SEL fees and organised meals £110. The weather could have been hotter and drier but our reception, companions and accommodation were warm, the scenery spectacular, an interesting selection of Lepidoptera, light-traps and lepidopterists was seen and for PW the opportunity to study the Bordered Gothic was timely and most welcome.

**Acknowledgements**

We would like to thank all those named above for their help and company which made this 1st SEL Field Congress a great success as far as we were concerned. In particular, we thank Sylvia Mader, Stefan Heim and Gerhard Tarmann for all their organisational work before, during and after the event. PW would also like to thank Writtle College for support in compiling this report as Reader in the Centre for Environment and Rural Affairs.

**Further information**

See the SEL website at www.soceurlep.org for information about SEL, its journal and forthcoming events. The 14th indoor SEL Congress consisting of lectures on a wide range of topics from taxonomic issues to biogeography and conservation will be 12-17 September 2005 at the Museum Civico di Zoologia. Via U. Aldrovandi 18, I-00197, Roma, Italy. Details for the 14th indoor Congress and other activities will be posted on the website. To join SEL and pay in sterling (£25.00p.a.) contact Dr David Agassiz SEL(UK), 23 St James's Rd, Gravesend, Kent, DA11 OHF e-mail: david@agassiz.worldonline.co.uk

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# ANNOUNCEMENTS, REQUESTS AND REPLIES

## The Hammond Award

We are pleased to announce that the Hammond Award for the best article in the *Bulletin* has been awarded to Lisa Webb. This is for her article 'The Dung Beetles of Ayrshire, Scotland.' (Vol 63, No 456, pp131-5). The article was particularly praised for its inclusion of techniques that can be used by anyone to study this group.

## The Cribb Award

The Cribb Award is presented for outstanding contributions to insect conservation. It was awarded at the AGM in April to Duncan Fraser for his work at Old Stores Meadows private nature reserve, Capel, Surrey. Hopefully further details will appear in a later edition of the *Bulletin*.

**AES Field Meeting**

As mentioned in the February 2005 *Bulletin*, we are holding a field meeting in Suffolk for AES members in August. The date has been set for the late August Bank Holiday weekend, ie Saturday 27th August.

The site is at Little Blakenham near Ipswich, just off the A14. It is small (2-3 acres) enough to have a friendly meeting. However it is very varied. We will be looking at a wide range of insects in various habitats, from dry sandy grassland to wet fen and reedbed. There are some mature trees to explore and even cow dung (without invermectins) to search for beetles and the like! The site we are meeting at has numerous insect species including butterflies, dragonflies and bees. In August there should be good numbers of Orthoptera.

The plan is to meet at about 10.30am on Saturday. Ipswich railway station is convenient, so you can be picked up from here. Beginners can learn techniques and the more experienced can explore. If there is demand, we will try to have a talk over lunch (please bring sandwiches). The AES Archive can also be viewed on the day. We hope to have a barbecue and moth trapping (in conjunction with the Suffolk Moth Group).

Pair of mating Common Blues *Polyommatus icarus* in one of the main fields of the Field Meeting site

Adult Great Green Bush Cricket *Tettigonia viridissima*.

There should be simple indoor facilities with at least one microscope, to help with studying fauna discovered (and in case of bad weather). There is a cheapish hotel nearby and possibly facilities to camp on site (very basic). This means that we can study the contents of the moth trap and possibly have a group or individual trips to local nature reserves on the Sunday.

Anyone with interest please contact Phil Wilkins (phil@bombus.freeserve.co.uk or 01473 831571). We need to have a rough idea of numbers and plan the event in more detail, so if you are interested please phone or email – thanks!

**AES Field Trip near Bognor Regis**

Members are asked to note that a field trip is to take place on Saturday 13th August at The Brooks Open Space, Rowan Way, Bognor Regis, West Sussex (SU939014). There is a small car park at the entrance to the site which is on the northern side of Rowan Way, with alternative parking in the superstores (Halfords, Matalan, etc) car park on the southern side of Rowan Way. Please meet in the car park on the site from 11.00 a.m. It is hoped that some Bug Club members will also attend to obtain advice and experience from our adult membership.

The purpose of the trip is to obtain details of the invertebrates of the site in order that advice can be given to the Friends of The Brooks as to appropriate management of the site with regards to the invertebrate fauna. This is obviously an excellent opportunity to influence the management plan and it is therefore hoped that as many members covering as many orders as possible will be able to attend. Please call 01243 265537 if you need any further details.

**Do butterflies smell of cigars?**

*Adrian Smith*

*Leeds University Library*

During the summer I was able to answer this improbable enquiry ... In July a British entomologist, Leonard Winokur [*New Scientist* "The Last Word"], mentioned that "males of many species [of butterfly] have special scales that release scent ... They may smell of flowers, cigars and even chocolate".

Marc Abrahams asked, do they really smell of cigars?

One early reference (C.G. Barrett: *The Lepidoptera of the British Isles*, 1892) records that the Pale Clouded Yellow *Colias hyale* has the scent of pineapple – an observation attributed to "Mr Farren". E.B. "Henry" Ford in his widely read *New Naturalist* volume "Butterflies" (1945) tabulates the scents of a few British butterflies and includes two which smell of old cigar boxes. He derived his table from work by F.A. Dixey (*Proceedings of the Entomological Society of London* pp.lvi-lx, 1904) and G.B. Longstaff (*Entomologist's Monthly Magazine* 41: 112-114, 1905). These gentlemen also identified male butterflies smelling of chocolate sweetmeats. This was in some cases confirmed by two ladies, maybe Mrs Dixey and Mrs Longstaff, presumably owners of more educated noses.

Up-to-date information on male butterfly scents comes from Johan Andersson of Stockholm, who told Jennifer Viegas (Discovery News, March 3, 2004) that methyl salicylate, produced by the Green-veined White *Pieris napi* puts rival males off mating. http://dsc.discovery.com/news/briefs/20040301/antisex_print.html

My thanks to Johan Andersson for pointing out some earlier papers (Bergstrom, 1973; Tinbergen, 1942 and others). He tells me the scale odour of *P. napi* is citral, a blend of neral and geranial, "a common flower smell".

There is a list of sex pheromones of Lepidoptera, http://www-pherolist.slu.se The Pherolist. See also http://www.phero.net. No cigars, only sandalwood, or "old cigar boxes". Now I wonder, what do cigars smell of, if not old butterflies?

## Macrolabic earwigs

*David Keen (3309)*

*Calle Casto Bancalero 11,41650 El Saucejo, Sevilla, Spain.*

I found the article written by Richard Jones in the February 2005 issue of the *Bulletin* most interesting. This took me back to a holiday I spent in Bournemouth in August 1976 with my wife and two children. Our good friend, the late Laurie Christie, came down from London, to join us on 18 August, and the two of us spent a few hours on the coast at Pokesdown, Dorset. Laurie was well known for his view that insects were still to be found in their original locations if time was spent looking for them. Thus, the idea that day was to seek out the Giant Earwig *Labidura riparia* (Pallas), which was known to occur there until the 1930s. Needless to say, we failed in this bid but we did find the

Common Earwig *Forficula auricularia* Linnaeus to be present in good numbers. All the males were of the macrolabic form.

On 20 May 1978 I spent the day in Alum Chine, Bournemouth and found a macrolabic male. Although the majority of the males that I have come across on Esher Common in Surrey have been of the normal

**Hummingbird Hawk Moth Hibernation – a reply from Germany**

Dr Ulf Eitschberger (9126) has responded to Ian Herbert's note in the February 2005 *Bulletin* (Vol 64, No 458, p 25). He comments that the number of hibernating specimens of *Macroglossum stellatarum* has been increasing for several years in Germany. So it would not be a surprise for this species to do so successfully in Britain in the future. More information can be found at http://www.s2you.com.form, I did find two macrolabics on 25 July 1976.

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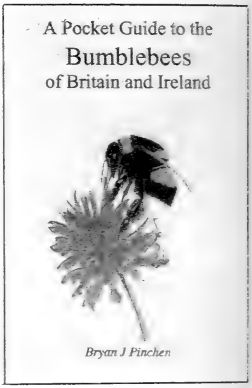
# Book Review

## *A Pocket Guide to the Bumblebees of Britain and Ireland*




by Bryan J. Pinchen, published by Forficula Books 2004, 59 pp., 22 species illustrated in colour. Price £5.00p. ISBN 0-9549349-0-3. The Guide is available direct from the author at a cost of £5.50p (which includes post and packing): B.J.Pinchen, 7 Brookland Close, Pennington, Lymington, Hampshire SO41 8JE.

For anyone who has ever tried to identify a bumblebee in the field, or had trouble locating a field guide with a representative set of comparative illustrations of our bumblebee fauna, or has been put off by long and difficult keys for this group, or indeed, struggled to find any literature that attempts to make sense of bumblebee identification, this very useful pocket guide is for you.

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Verdict: Packed with useful information and illustrations, a true 'pocket' guide for easy use in the field, and for the price, an absolute bargain!

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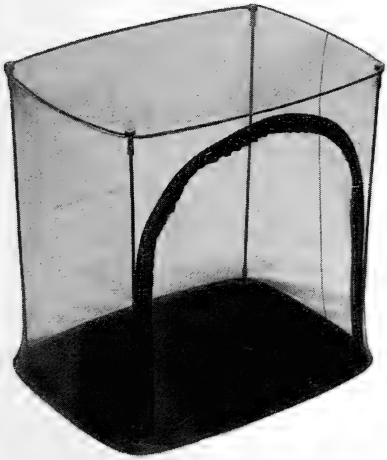

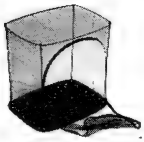

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# The Bulletin

## of the Amateur Entomologists' Society



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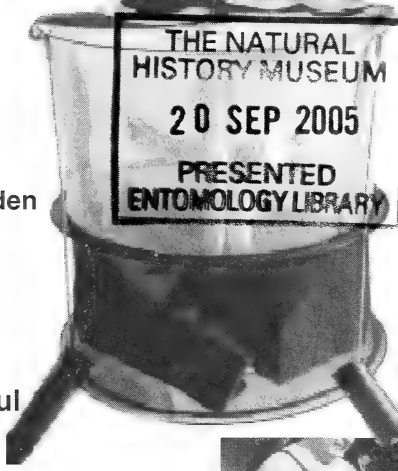


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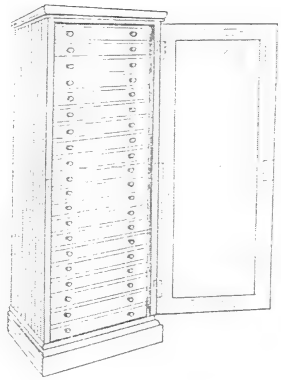

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### Bulletin Cover

The cover picture for this issue of the *Bulletin* shows a specimen of the nationally scarce ground beetle, *Carabus nitens*, which is the smallest *Carabus* species to be found in Britain. This pretty species is a jewel among our coleopteran fauna, and has distinctly bifocal distribution in Britain. It is primarily an upland species found in northern England and Scotland, which can be found in wet heaths with *Sphagnum*, but this highly localised species is also present in the wetter boggy areas of the lowland heaths of the Poole Basin in Hampshire and Dorset, including Studland Heath NNR (see article in this issue: pp. 129-164).

The Bulletin
of the Amateur Entomologists' Society

Volume 64 • Number 461 August 2005

# Editorial

As I approach the twilight of my editorship of the AES *Bulletin*, I am very pleased to announce that, after something of a quiescent period regarding contributions to the *Bulletin* (which indeed, fuelled Phil's and my desire to grab things by the scruff of the neck), we are *beginning* to accumulate the sort of copy required to maintain a healthy state of affairs. I hope that this continues, particularly with regard to the provision of some of the splendid and high quality colour photographs and original artwork that I know some members have produced (hint, hint.)

One of my remedies during that quiescent period was to write a series of articles on *Classic Entomological Sites*, and this issue contains a contribution on the South Haven Peninsula, which, I'm afraid, is not unlike the shoe rack that my wife bought recently: as soon as anything of mine was put onto it, it was full up!

Speaking of which, I have taken a fair amount of ribbing regarding the picture that I produced for Figure 1 of that article, and have had to put up with the printers making pirate-based comments, and my wife chipping in with, "Hey, where's the treasure buried?"

On more serious matters, I have to say that I have had the privilege of having a preview of the forthcoming AES publication, the *Coleopterist's Handbook* by Jonathon Cooter and Max Barclay, which is *stunningly* good. We look foward to seeing this publication when it becomes available later this year.

I first met Dr Keith Alexander during a field trip to the New Forest (Figure 1) as part of a symposium on the conservation of saproxylic beetles in ancient trees (see *Bulletin* #**443**, pp. 153-160). At the time, he was busy identifying a specimen of the nationally scarce melandryid beetle, *Phloiotrya vaudoueri*, from its remains in a spider's web. I was immediately struck by the willingness with which he imparted his expertise to me and other members of the party, even taking time to spell scientific names to those of us who were busy completing field notes. As a result, I learnt more about saproxylic invertebrates, fungi, and the importance of decaying timber habitats during that field trip

**Figure 1.** Dr Keith Alexander (standing next to tree) examining wood for saproxylic invertebrates.

than I had learnt at any time previously, and left the symposium with an understanding of the need to conserve trees colonised with fungi for the benefit of our most threatened invertebrate fauna (an understanding which left me cringing at the wholesale destruction of valuable decaying timber habitat at Kew gardens recently... to make compost!).

I was very pleased to read that Dr Alexander has received the annual Marsh Award for Insect Conservation from the Royal Entomological Society. Dr Alexander has made an exceptional contribution to our knowledge of the invertebrates associated with living and decaying timber, and has been instrumental in conveying the importance and role of fungi with regard to the presence of rare insect assemblages in decaying timber habitats. Further details of Dr Alexander's vast contribution to the conservation of invertebrates and their habitats can be found in the latest edition of *Antenna, Bulletin of the Royal Entomological Society*, (2005), **29** (No.3).

The AES should like to sincerely congratulate Dr Alexander on this outstanding achievement, and thank him for his considerable contribution to the field of invertebrate conservation.

**Peter Sutton**

# An aquatic escape strategy of the Slender Ground-hopper *Tetrix subulata*

*by Gary Farmer*

9, Clent Avenue, Headless Cross, Redditch, Worcestershire, B97 5HH.

During a visit in May, to my local Nature Reserve (Ipsley Alders Marsh) I was searching for invertebrates when a Slender Ground-hopper *Tetrix subulata* jumped to avoid me. It landed in a small pond and proceeded to swim a short distance across the surface of the water. I have observed this behaviour many times over the years and so was not surprised to see it again. But the ground-hopper then disappeared under the water and I watched for several seconds but it stayed down. Presuming it to be in trouble, I reached in and fished it out on my finger. Rather than sit still on my finger it jumped back into the pond, swam further out towards the middle and "dived" again. It was quite obviously using this technique to avoid capture.

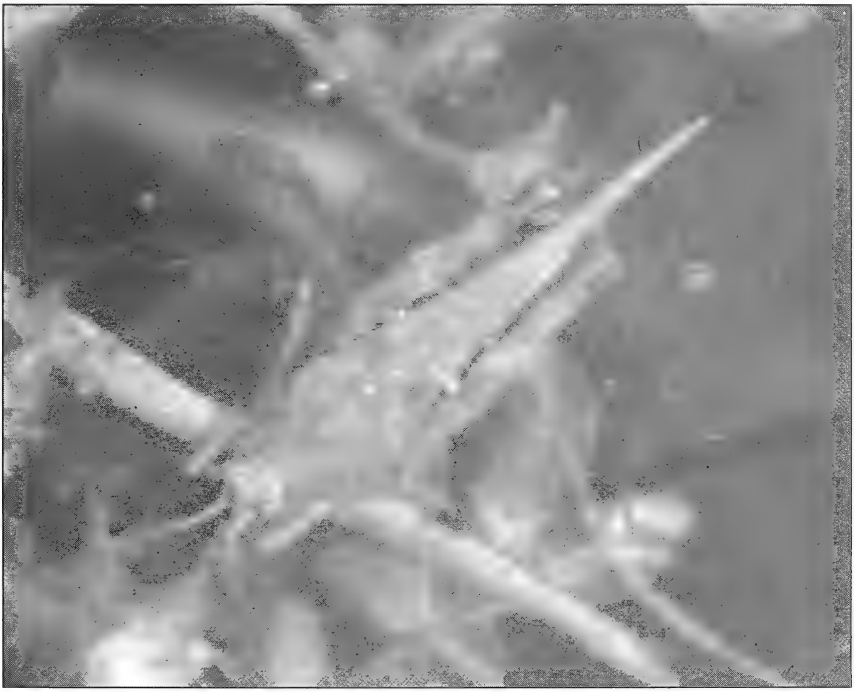

**Figure 1.** A Slender Ground-hopper taking refuge under the surface of a pond. The aquatic abilities of all three species of British ground-hopper are well-known.

# The 'Uninvited Guest Ant' *Formicoxenus nitidulus* (Nylander) in North West England

*by Neil A. Robinson (10002)*

*3 Abbey Drive, Natland, Kendal LA9 7QN.*

I enjoyed reading Peter Sutton's article *Classic Entomological Sites: Arnside Knott, Cumbria* in *Bulletin* No. 455, as this is one of my local happy hunting grounds for my particular interest, which is bees, wasps and ants, though, as the article showed, it is best known for its butterflies. It is nice to be reminded that not all 'classic entomological sites' are in the south of England. I was pleased to see that his account included the Red Wood Ant *Formica rufa* L., of which I have to admit to being a great fan. I can confirm that it is at its northern limit in Britain on Arnside Knott (though it does share this position with Grubbins Wood and Underlaid Wood at about the same latitude in the Arnside-Silverdale Area of Outstanding Natural Beauty), as it is no longer to be found in the Lake District (Robinson, 2001). The wood ant which occurs there, in Borrowdale and in the Duddon Valley, is the upland species, the Northern or Hairy Wood Ant *Formica lugubris* Zetterstedt. I keep a record of the condition of about 30 wood ant nests on Arnside Knott as part of a long-term study of Red Wood Ant populations which I am making there and at Gait Barrows National Nature Reserve. I made a survey for the National Trust in 1998 of the bees on Heathwaite on the lower slopes of the Knott, recording 42 social and solitary species, which demonstrated the importance for bees of this flower-rich limestone grassland.

Arnside Knott is also the first place where I found, in 1996, the so-called 'Guest Ant' *Formicoxenus nitidulus* in a Wood Ant nest (Plate 1). Actually, the English name is a singularly inappropriate because it is certainly not a welcome guest and its relationship to the Wood Ants is much the same as that of the House Mouse to us. Therefore I prefer to call it the Uninvited Guest Ant! Latin names are not always helpful, but this one, which might be translated as 'Little Shining Ant Stranger', is quite apt. It is a tiny (*c.* 3 mm) ant which is only found living in Wood Ant nests. It makes its own nests in small colonies in hollow twigs inside the host's nest, so it is difficult to detect, except on occasions when workers, males or winged females emerge onto the surface of the mound. Males have a shining black abdomen and reddish head and thorax (occasionally pale yellow). They are wingless and closely resemble workers but have 12 segments in their antennae whereas

**Figure 1.**

workers and queens have 11. This distinction is difficult to see, even with a microscope, but the males have lyre-shaped antennae which is more recognisable. (Figure 1) As *Formicoxenus* is rarely seen outside Wood ant nests, it is assumed that it is dependent upon stealing food from its hosts, but there is no evidence that it does any other harm. Certainly the Wood Ant workers do not like them; when they see one they pounce on it (Plate 1), but instantly drop it. I have never seen a *Formicoxenus* injured in any of these attacks; evidently their cuticle is too hard, or they are distasteful, or both.

On account of their habits, it is not surprising that not much has been seen of these ants, but once I had found them on Arnside Knott I began to see them on more nests there and at Gait Barrows NNR ,and was able to make a lot of observations (Robinson, 1998). The next year I saw them also on nests of *F. lugubris* in the Duddon Valley in the Lake District (Robinson, 1999). I discovered that the best time for finding them on Red Wood Ant nests is September and October, when the males, which have come out in a mating emergence, run about on the surface of the nest. Males of *Formicoxenus* are unusual in not having wings; most male ants have wings and fly off from the nest to mate with the winged queens. I have only seen queens, which are larger than the males and more uniformly red in colour, on a few occasions. When they emerge they are winged, but I have only seen them after they have shed their wings. It is thought that after mating they either return inside to found new nests, or fly off in search of other host nests. The wingless males seem to continue to run around on the surface of the nest (presumably in the vain hope of finding more queens) until the end of the season - even into the beginning of November if the weather is mild. Workers, as they have no reason to leave the interior of the host nest, are very rarely seen.

After finding *Formicoxenus* at Arnside Knott and Gait Barrows, I started looking for it on nests in other places. I have found it on most of the sites in the Arnside-Silverdale AONB which have Red Wood Ants, but there are still one or two places where, in spite of frequent searching, I have not been able to find it. Similarly, I found it easily on nests of the Northern Wood Ant in the Duddon Valley, but I have been completely unable to find it in Borrowdale, in spite of the fact that specimens were collected there in the early 20th century. Also, one cannot generally rely on seeing it on the same nest from year to year; presumably it depends on whether there has been a mating emergence or not. There is only one nest where I can rely on seeing them and this

is on Gait Barrows NNR, where a slab of limestone projects from the side of a nest (Plate 1). Males (not workers) can be spotted running out onto the slab (Plate 1). The earliest I have seen them is April, which shows that they are present in the nest long before the autumn mating emergence. Another interesting feature of these ants is that they move house with their hosts. In several cases where a nest which I knew contained *Formicoxenus* moved to another location, I found *Formicoxenus* on the new nest.

Nationally, records of *Formicoxenus* are sparse and scattered, covering most of the areas of England and Scotland from which its hosts have been recorded, but as yet it is unknown in Wales and Ireland (Edwards & Telfer, 2002). Obviously its survival is dependent upon its hosts. To pursue the analogy with the House Mouse: when the human population left the island of St. Kilda, the House Mouse soon died out. Fortunately, although there has been some indication of a contraction in range of the Red Wood Ant (Edwards, 1997) none of the hosts of *Formicoxenus* are thought to be under threat at present. However the Bees, Wasps and Ants Recording Society, of which I am a member, would like to obtain more information about its distribution. So if you know of Wood Ant nests, and can visit them in September or October, look out for these intriguing little ants and if you find them let me know, with location, grid reference and date. They are admittedly small, but that helps to distinguish them. There is great variation in size of wood ant workers; the smallest are only half the size of the largest, but *Formicoxenus* is only half the size of the smallest! Another useful feature is their behaviour; wood ants move in a characteristically jerky fashion, whereas *Formicoxenus* cruises along steadily like a little car. Good hunting!

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**ERRATA**: Please note in Plate 1, Gate Burrows should be Gate Barrows.

# Classic Entomological Sites: South Haven Peninsula, Dorset

*Dr Peter G. Sutton (7388)*

*AES Habitat Conservation Officer, 2 Fir Tree Close, Flitwick, Beds. MK45 1NZ.*

## Introduction

Studland Heath and Godlingstone Heath represent one of the largest remaining tracts of lowland heathland in Britain, and form part of an area of Dorset to the south of Poole Harbour known as the South Haven Peninsula (Figure 1). Together with Studland's coastal sand dune system, this 633 hectare area constitutes the Studland Heath National Nature Reserve, which was designated as a NNR in 1962 (Dorset Wildlife Trust, 1997).


**Figure 1.** The South Haven Peninsula.

Specific information describing the diverse invertebrate fauna of the South Haven Peninsula is surprisingly hard to come by, but general details of a number of typical dune and heathland species can be found in relevant natural history books, including county guides by Mahon

(1990), and the Dorset Wildlife Trust (1997). Specialist publications can occasionally provide a more focussed analysis of certain invertebrate groups (*e.g.* butterflies, water beetles), and Invertebrate Site Registers held by English Nature also provide a useful (but dated) baseline describing species of conservation concern. This article attempts to provide a more up-to-date analysis of the exceptional invertebrate fauna to be found on the South Haven Peninsula.

## The formation of the dune system

The South Haven Peninsula is protected from the full force of the sea and prevailing weather systems by the chalk cliff headland that forms Old Harry Rock's to the south-west of Studland. The peninsula may appear to be a longstanding geological feature, with its dune system, heathland and inland lake (the Little Sea) but it has been formed very recently in geological terms.

Maps dating back to the 16th century show that the peninsula was nothing more than a narrow strip of heathland adjoining the sea cliff. Successive ridges of sand began to build up against this strip of land over the course of the next two centuries, forming a wide inlet which became progressively enclosed as the dune system built up on each side of the tidal lagoon. Eventually, by 1886, the lagoon had become completely enclosed by the developing dune system, a process that had taken approximately 300 years to complete. As the dune system continued to grow, another, smaller body of water was cut off from the sea, and by 1900, the Eastern Lake had been completely enclosed. Both water bodies, which are fed by freshwater streams, became progressively desalinated to become the slightly acidic freshwater lakes that we know today.

## The acidic nature of the dune system and heathland

An important aspect of the dune and heathland habitats found on the South Haven Peninsula is the acidity of the substrate and its corresponding effect on the flora and fauna of the site. Unlike certain other important dune systems in Britain, which have significant proportions of calcium carbonate (*e.g.* the Sefton Coast dunes in Lancashire contain approximately 6% calcium carbonate), the sand dunes of Studland have very little calcium carbonate (less than 0.02%) because they are formed from the quartz sand of the Bagshot Beds which is virtually carbonate-free. In the absence of carbonate, the dunes and their developing soils take on a slightly acidic character and are colonised by acidophilus (acid-loving) plants. The corresponding

dune heath, (which is the only large example of this habitat in the south and south-west of Britain; JNCC), and lowland heathland habitats that have developed on the South Haven Peninsula, together with the flora and fauna that they support are recognised as areas of national and international importance. In this context it has become increasingly apparent that Britain, which has a significant proportion of Europe's remaining Lusitanian (Atlantic) heathland, has corresponding populations of certain species that are important in a global context, and a number of these species can be found on the South Haven Peninsula.

In addition to these habitats there are areas of woodland, bog, and bodies of freshwater that support a wealth of scarce and threatened invertebrates, and the peninsula provides vital habitat for some of our rarest vertebrates including: the Sand Lizard, *Lacerta agilis*; Smooth Snake, *Coronella austriaca*; Nightjar, *Caprimulgus europaeus*; and Dartford Warbler, *Sylvia undata*.

Many invertebrates can be observed in the various habitats found on the peninsula, from the dry heathland paths that are home to burrowing aculeates such as the impressive red and black sand wasp, *Ammophila sabulosa*, to the wetter humid areas of heathland which host Bog Bush-crickets, *Metrioptera brachyptera* (Plate 3) and, arguably, our most beautiful species of ground beetle, *Carabus nitens* (see cover picture.) Among the damp dune slacks, another of our scarce orthopterans, Cepero's Ground-hopper, *Tetrix ceperoi* (Plate 3) can also be found, and in the vicinity of the Little Sea, dragonflies and damselflies such as the Downy Emerald, *Cordulia aenea* (Figure 2), and the attractive Small Red Damselfly, *Ceriagrion tenellum* (Plate 4), are present.

**Figure 2.** The Downy Emerald, a nationally scarce dragonfly which breeds in the mildly acidic waters of the Little Sea, can be seen patrolling the margins of this freshwater lake in early summer.

### A conflict of interests?

Studland NNR is partly owned and managed by the National Trust, which has the unenviable task of performing a finely balanced juggling act in its efforts to conserve the habitats and species of the Studland region, while at the same time accommodating the needs of up to one million visitors to Studland's four miles of beaches every year.

Tourism is hugely important to the Purbeck region and Studland's beaches, which are among Britain's best loved holiday destinations, play a major role in the health of the local and regional economy.

It is also clear that vital conservation projects undertaken by the National Trust rely heavily on revenue received by the Purbeck Estate from Studland's beaches. Nevertheless, with those visitors comes the heavy price tag of dune erosion and damage to the mosaic of habitats present on Studland NNR, together with other related environmental problems.

The eutrophication of sites (unnatural input of nutrients), for instance, which can change the nature of flora and fauna present at a site, comes obviously from the thousands of dogs that visit the site each year, and to some extent, from the approximately 14 tonnes of litter that are collected from the beaches every week during the peak holiday season. It also, perhaps less obviously but equally significantly, comes from the exhaust of vehicles that pass through the peninsula (about 5,000 every day in July and August; National Trust), which may detrimentally alter the nature of heathland habitat in the vicinity.

### Should seaweed be removed from Studland's beaches during the holiday season?

The complaints that the National Trust has received from the public regarding the accumulation of seaweed and other strandline debris on Studland's beaches have resulted in the decision to remove seaweed (up to 300 tonnes per night) during the holiday season (National Trust website).

Unfortunately, this decision, which is clearly at odds with conservation policy, neglects the fact that: seaweed plays a very important role in the ecology of the beach; can stabilise sand and prevent erosion; and is the precursor to the formation of new dunes. Moreover, research has shown that the seasonal removal of seaweed as part of beach-cleaning operations has a significant and detrimental impact on strandline invertebrates and their dependents, notably waders and other birds. Amphipods and other species with univoltine

reproductive cycles are particularly at risk and populations can quickly be decimated by this seasonal activity (Llewellyn and Shackley, 1996).

However, this is not an easy problem to resolve. Local authorities are required to ensure that bathing beaches are cleaned to the mandatory standard of Bathing Water Directive 76/160/EC, and efforts by those authorities to achieve a 'Blue Flag' seaside award (a particularly useful asset when attempting to attract tourists) will inevitably require them to comply with criterion No. 4 to ensure that, "no algal or other vegetative materials should be allowed to accumulate or decay". Since this debris may also be inextricably contaminated with seaborne rubbish and even tainted with sewage from the numerous outlets around the British coastline, it is not difficult to see how this valuable strandline habitat may be viewed as something of a distasteful health hazard, particularly with regard to the health of inquisitive young children on beaches.

It will take a strong-minded conservation manager to take a stance on this matter and inform the public that, distasteful though it may appear to be for holidaymakers, the retention of a seaweed strandline is of vital importance in order to maintain the ecological processes of the beach for the benefit of its invertebrate and vertebrate fauna, and to ensure the continuity of ongoing dune processes.

## Conservation management

The National Trust has introduced a number of measures to protect the dune system, dune heath and heathland from the full brunt of human pressures by: providing walkways to protect dunes from further erosion and damage; urging walkers to keep to paths; and fencing off areas of dune and dune heath to allow the recovery of damaged areas and their inhabitants.

Of the heathlands that were present in Dorset and the Poole Basin in 1750, only 15% remains today (Dorset AONB), a significant proportion of which is present on Studland NNR.

Heathland requires continuous management and this entails the use of a suitable grazing regime to maintain a diversity of structure, from the bare ground habitats that are so important for ground-nesting invertebrates, through various stages of heather growth, to mature stands of heather. Grazing is also required to prevent the spread of Purple Moor Grass, *Molinea caerulea*, (which can reduce biodiversity by dominating unmanaged areas, particularly after heathland fires), and prevent scrub and tree encroachment. Bracken control (usually by spraying regime) is also a necessary component of any heathland

management plan. Without this management, heathland habitats would quickly deteriorate to an unacceptable condition with a corresponding loss of flora and fauna.

Achieving this habitat mosaic occasionally requires the judicious use of fire as a tool, to encourage new growth and regenerate areas of heathland that have become over-mature. Conversely, uncontrolled fires, some of which have been deliberately started, are a significant problem, (notably where urban areas encroach onto heathland to the north of Poole Harbour), and have destroyed many important populations of scarce and threatened heathland species. Fire-breaks between tracts of heathland are used to minimise the devastating damage that heathland fires can occasionally cause.

Another significant threat comes from scrub encroachment, particularly when it involves the invasive alien species, *Rhododendron*. In addition to the role of grazing mentioned above, the physical removal of scrub and tree cover, including secondary birch and conifer woodland which can quickly replace heather (and even large-scale restoration of heathland by removal of conifer plantations) has been a major factor in the successful regeneration of heathland.

**Did oil save the South Haven Peninsula from development?**

In the late 1970s, it was discovered that sandstone beneath the South Haven Peninsula contained a substantial reservoir of oil and the Wytch Farm Oilfield was established. A combination of public pressure, which demanded minimum environmental damage to the region, together with modern deviated drilling techniques, has ensured that the whole operation is highly concealed, and BP (who have been involved in heathland restoration, and, "created a 26 hectare conservation area on the Goathorn Peninsula, where they have felled conifers, seeded bare ground with cuttings and planted heather turves", Dorset Wildlife Trust, 1997), have won awards for their excellent environmental record.

It has been argued that without the intense pressure of public opinion, and their environmental concerns regarding the protection of the peninsula, the region would have suffered the same fate as the dune and heathland that was lost to sprawling conurbation and leisure industry development to the north of Poole Harbour.

(It is also interesting to speculate, to what extent the South Haven Peninsula would have become a complex of housing estates and yachting marinas if a road bridge had been built across the mouth of Poole harbour prior to the discovery of oil in the region.)

## The insect fauna of the South Haven Peninsula

**Status Key: RDB1** = Endangered; **RDB2** = Vulnerable; **RDB3** = Rare; **Na** = Nationally Scarce A (found in 30 or fewer 10 km squares); **Nb** = Nationally Scarce B (found in 31 – 100 10km squares); **Local**.

### Butterflies (Lepidoptera)

An unpublished register of Dorset butterflies (Warren, 1987) recorded the following butterflies on Studland Heath NNR, all of which are still present:

**Status: Nb**

There is a healthy population of Silver-studded Blue, *Plebeius (Plebejus) argus* (Figure 3) on the heathland, which has many breeding centres.

**Figure 3.** Heathland specialist: the Silver-studded Blue.

**Status: Local**

The Dingy Skipper, *Erynnis tages*, a species which once bred in the Knoll House car park, was apparently absent from the Studland peninsula according to Thomas *et al.*, (1998), although the work of Asher *et al.* (2001), confirms its continuing presence in the relevant 10 km squares. A large colony of Green Hairstreak, *Callophrys rubi*, is still

present. Other species include the Brown Argus, *Aricia agestis*; the White Admiral, *Limenitis (Ladoga) camilla* (Figure 4); Silver-washed Fritillary, *Argynnis paphia*; Marbled White, *Melanargia galathea*; and a large colony of Grayling, *Hipparchia semele* (Plate 6).

**Figure 4.** The White Admiral can be found feeding at bramble in the small areas of woodland habitat that exist on the peninsula (Photograph: Dave Browne).

The commoner butterflies such as the Common Blue, *Polyommatus icarus*, and the three 'whites' are present and among those which can frequently be seen at the *Buddleia* bushes near the Knoll car park (which is graced annually by a handful of Bee Orchids *Ophrys apifera*) are: Peacock, *Inachis io*; Red Admiral, *Vanessa atalanta*; Painted Lady, *Vanessa (Cynthia) cardui*; Small Tortoiseshell, *Aglais urticae*; and Comma, *Polygonia c-album*. Occasionally Clouded Yellow's, *Colias croceus*, are also seen.

## Moths (Lepidoptera)

The work of Hadley (1984a) revealed a number of nationally scarce and local moths on the South Haven Peninsula:

### Status: Na

Grass Eggar, *Lasiocampa trifolii*; Small Grass Emerald, *Chlorissa viridata*; and the pyralids, *Pempelia genistella* and *Gymnancyla canella*.

**Status: Nb**

Sallow Clearwing, *Synanthedon flaviventris*; Red-tipped Clearwing, *Synanthedon formicaeformis*; Dotted Border Wave, *Idaea sylvestraria*; Horse Chestnut, *Pachycnemia hippocastanaria*; Broad-bordered Bee Hawk, *Hemaris fuciformis*; Small Chocolate-tip *Chlostera pigra*; Kent Black Arches, *Meganola albula*; Square-spot Dart, *Euxoa obelisca grisea*; Light Feathered Rustic, *Agrotis cinerea*; Portland Moth, *Actebia praecox*; Shore Wainscot, *Mythimna litoralis*; Webb's Wainscot, *Archanara sparganii*; Silky Wainscot, *Chilodes maritimus*; Cream-bordered Green Pea, *Earias clorana*; the pyralids, *Crambus hamella*; *Pediasia contaminella*; *Pediasia aridella*; *Anania verbascalis*; *Synaphe punctalis*; *Apomyelois bistriatella neophanes*; and the plume moth, *Capperia britanniodactyla*.

**Status: Local**

Dark Tussock, *Dicallomera fascelina*; Twin-spotted Wainscot, *Archanara geminipuncta*; Brown-veined Wainscot, *Archanara dissoluta*; Silver Hook, *Deltote uncula*; and the pyralids, *Agriphila latistria* and *Eudonia pallida*

There are many more species of moth present on Studland NNR including a number of the more eye-catching species such as the Poplar Hawk Moth, *Laothoe populi*, and the Cream-spot Tiger Moth, *Arctia villica* (Plate 6), which was photographed among the dunes near the National Trust café (29.vi.98).

**Dragonflies and Damselflies (Odonata)**

Hill and Twist (1998), who provide a very useful site guide for the observation of *Butterflies and Dragonflies*, lists a solitary species of interest at Studland NNR: Ruddy Darter, *Sympetrum sanguineum*. In fact, Studland NNR is an outstanding place for the observation of British Odonata and the following species are present at the site:

**Status: Nb**

Variable Damselfly, *Coenagrion pulchellum*; Small Red Damselfly, *Ceriagrion tenellum* (Plate 4); Hairy Dragonfly, *Brachytron pratense* (Figure 5); Downy Emerald, *Cordulia aenea*; and Ruddy Darter, *Sympetrum sanguineum* (Figure 6).

**Status: Local**

Black-tailed Skimmer, *Orthetrum cancellatum*; Keeled Skimmer, *Orthetrum coerulescens* (Plate 3 and Figure 7)

**Figure 5.** The Hairy Dragonfly is an early species that can be found on the wing in May and June

**Figure 6.** Ruddy Darter dragonfly

**Figure 7.** The Keeled Skimmer, like the Black-tailed Skimmer, can be observed basking on heathland paths (Photograph: Dave Browne).

**Figure 8.** Golden-ringed Dragonfly at rest on heather (Photograph: Dave Browne)

Other species of Odonata that have been recorded include the beautiful Golden-ringed Dragonfly, *Cordulegaster boltonii* (Figure 8); Southern Hawker, *Aeshna cyanea*; Migrant Hawker, *Aeshna mixta*; Common Hawker, *Aeshna juncea*; Emperor Dragonfly, *Anax imperator*; Broad-bodied Chaser, *Libellula depressa*; Four-spotted Chaser, *Libellula quadrimaculata*; Common Darter, *Sympetrum striolatum*; Black Darter, *Sympetrum danae* (Plate 4); Emerald Damselfly, *Lestes sponsa* (Plate 4); Common Blue Damselfly, *Enallagma cyathigerum*; Azure Damselfly, *Coenagrion puella*; Large Red Damselfly, *Pyrrhosoma nymphula*; and the Blue-tailed Damselfly, *Ischnura elegans*.

### Grasshoppers and allied species (Orthoptera)

Studland Heath NNR has an outstanding assemblage of Orthoptera and provides habitat for the majority of our native British species.

#### Status: RDB2

The Large Marsh Grasshopper, *Stethophyma grossum*, was formerly recorded from suitable bog habitat on the South Haven Peninsula but has not been recorded since 1966 (Harding *et al.*, 1985).

**Figure 9.** The Heath Grasshopper (above) is similar to the Field Grasshopper, but can be separated using the black wedge marks on the top of the pronotum which extend to the hind edge only in the Heath Grasshopper.

#### Status: RDB3

The Heath Grasshopper, *Chorthippus vagans* (Plate 2, Figure 9), is restricted to the heaths of Dorset and Hampshire in Britain. It can be

found without too much difficulty on Studland and Godlingstone heaths, and can be separated from the similar Field Grasshopper, *Chorthippus brunneus*, and female Mottled Grasshopper, *Myrmeleotettix maculatus* (Figure 10) with practice.

**Figure 10.** Female specimens of the Mottled Grasshopper (above) can sometimes be confused with Heath Grasshoppers, but the side-keels of the Mottled Grasshopper (on top of the pronotum) are so strongly indented that they almost join to make a cross.

**Figure 11**. The Slender Ground-hopper is a more robust insect than its rarer cousin, Cepero's Ground-hopper (Plate 3).

**Status: Na**

Cepero's Ground-hopper, *Tetrix ceperoi* (Plate 3), is more delicately built than the very similar Slender Ground-hopper, (Figure 11), and is the only ground-hopper to be found in areas (*e.g.* Harbour Shore, Studland) occasionally covered by high tides.

**Status: Nb**

The Bog Bush-cricket, *Metrioptera brachyptera* (Plate 3) is abundant over the whole heath; Grey Bush-cricket, *Platycleis albopunctata*; Woodland Grasshopper, *Omocestus rufipes.*

All three native cockroaches have been recorded from the region: Lesser Cockroach, *Ectobius panzeri*; Tawny Cockroach, *Ectobius pallidus*; Dusky Cockroach, *Ectobius lapponicus*; and Lesne's Earwig, *Forficula lesnei.*

**Status: Local**

Short-winged Cone-heads, *Conocephalus dorsalis* (Figure 12) frequent the reed beds of the Little Sea and can also be found where suitable wetter habitat exists on the dune and heathland; Figure 13 shows an extra-macropterous migratory form of the Long-winged Cone-head, *Conocephalus discolor*, that was encountered in a damp slack behind the dunes in Studland Bay.

**Figure 12.** The Short-winged Cone-head can be abundant in the reed beds around the Little Sea.

**Plate 1. The Uninvited Guest Ant**. Main picture: Arnside Knott represents the northern limit of the Red Wood Ant *Formica rufa* in Britain. Top left: Wood Ant nest next to a limestone slab. Gait Burrows; Top right and bottom left: Wood Ant workers immediately pounce on *Formicoxenus* ants, but then instantly drop them; bottom right: a *Formicoxenus* male (circled) is dwarfed by its Wood Ant hosts.
Photos: Neil Robinson

**Plate 2. Plate 2. Heathland insects.** Main picture: Studland Heath. Clockwise from top right: Heath Grasshopper *Chorthippus vagans*; *Geotrupes mutator*; *Carabus arvensis*; Heath Tiger Beetle *Cicindela sylvatica*. Photos: Peter Sutton

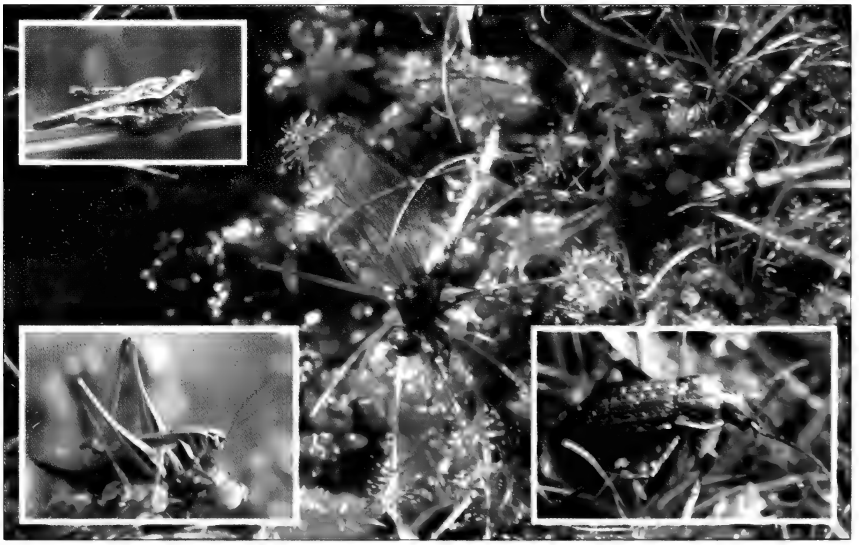

**Plate 3. Plate 3. Wetter habitats.** Main picture: A Keeled Skimmer *Orthetrum coerulescens* comes to a sticky end on an insectivorous Sundew plant. Clockwise from bottom right: *Carabus granulatus*; Bog Bush-cricket *Metrioptera brachyptera*; Cepero's Ground-hopper *Tetrix ceperoi*. Photos: Peter Sutton

**Plate 4. Odonata**. Main picture: The Little Sea, Studland. Clockwise from top left: Emerald Damselfly *Lestes sponsa*; Black Darter Dragonfly *Sympetrum danae*; Small Red Damselfly *Ceriagrion tenellum*. Photos: Peter Sutton

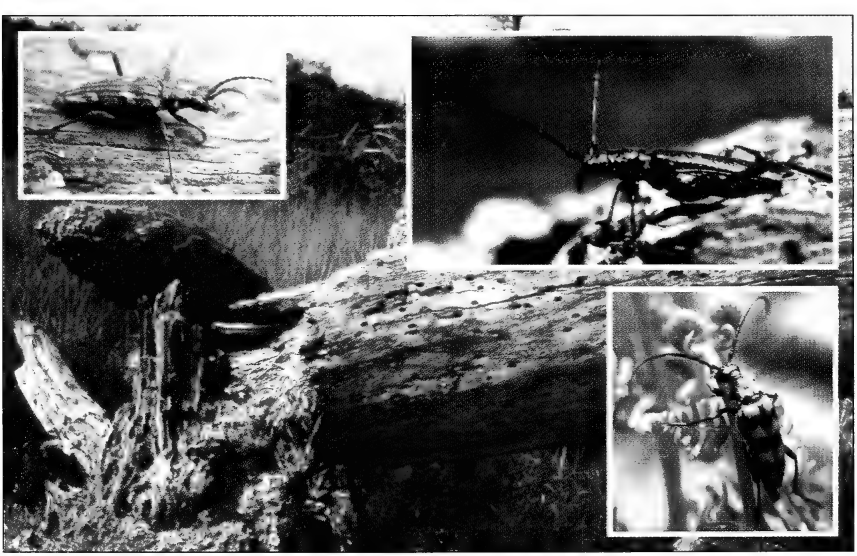

**Plate 5. Longhorn beetles**. Main picture: Dead wood habitat, well-used by cerambycids on Studland Heath. Clockwise from top left: *Rhagium bifasciatum*; the Musk Beetle *Aromia moschata*; Four-banded Longhorn *Leptura quadrifasciata*. Photos: Peter Sutton

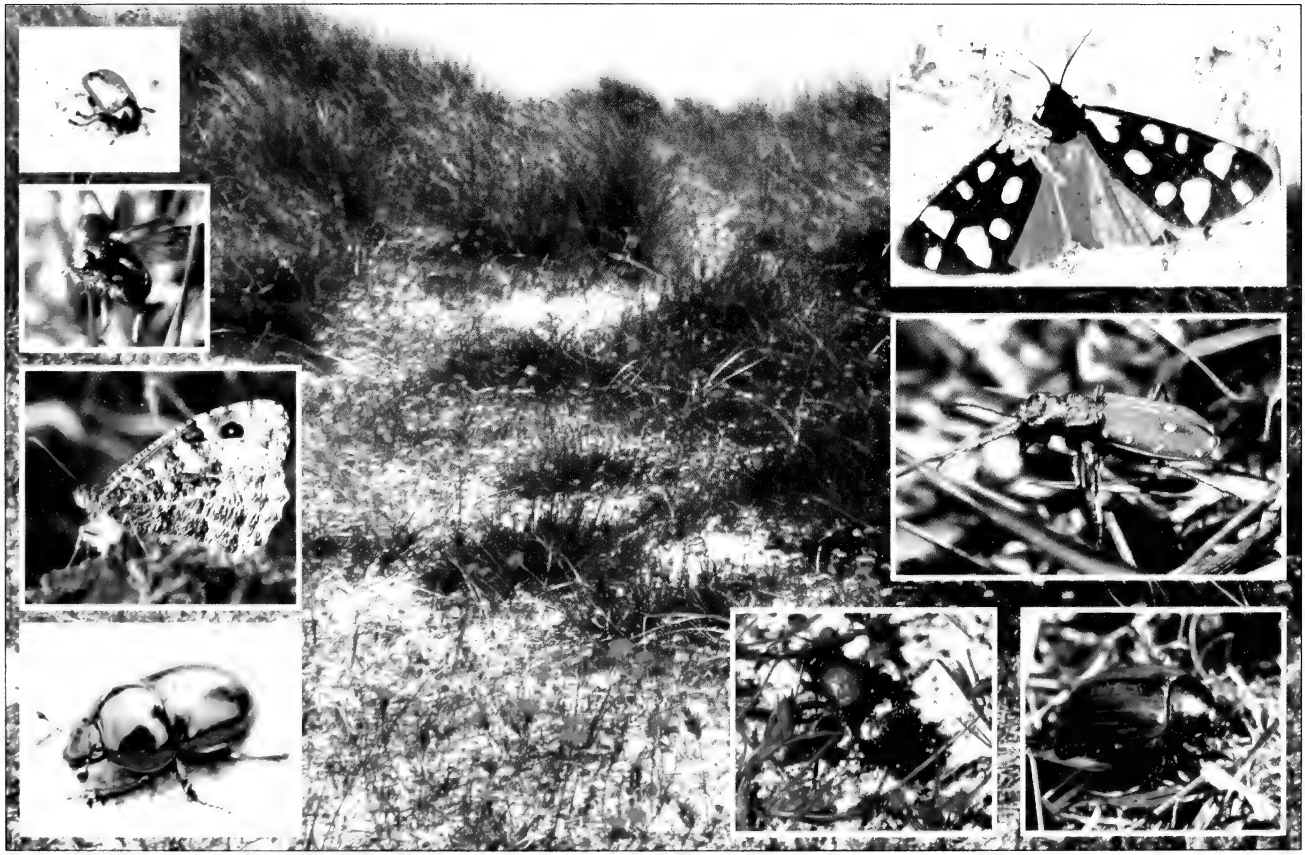

**Plate 6. Dune life.** Main picture: Studland sand dune habitat. Clockwise from top right: Cream-spot Tiger Moth *Arctia villica*; Green Tiger Beetle *Cicindela campestris*; *Anomala dubia*; Velvet Ant *Mutilla europaea*; *Geotrupes pyrenaeus*; Grayling *Hipparchia semele*; *Hoplia philanthus* in flight; Rock-rose Beetle *Cryptocephalus bipunctatus* var. *sanguinolentus*.
Photos: Peter Sutton

**Figure 13.** An extra-macropterous form of the Long-winged Cone-head.

Other species found in suitable habitat include: Dark Bush-cricket, *Pholidoptera griseoaptera*; Great Green Bush-cricket, *Tettigonia viridissima*; Oak Bush-cricket, *Meconema thalassinum*; Speckled Bush-cricket, *Leptophyes punctatissima*; Stripe-winged Grasshopper, *Stenobothrus lineatus*; Common Green Grasshopper, *Omocestus viridulus*; Field Grasshopper, *Chorthippus brunneus*; Mottled Grasshopper, *Myrmeleotettix maculatus* (Figure 10); Meadow Grasshopper, *Chorthippus parallelus*; Common Ground-hopper, *Tetrix undulata*; Slender Ground-hopper, *Tetrix subulata* (Figure 11); and Common Earwig, *Forficula auricularia.*

## Beetles (Coleoptera)

### Status: RDB1

The RDB1 flea beetle, *Longitarsus nigerrimus*, was last recorded from the South Haven Peninsula in 1926 (Hadley, 1984), and has not been recorded in Britain since 1933. It was known only from bogs and ponds in Dorset and South Hampshire where it was presumed to be associated with Greater Bladderwort, *Utricularia vulgaris* (Hyman and Parsons, 1992).

**Status: RDB2**

The RDB2 weevil, *Strophosoma fulvicorne*, is known only from a small area of heathland and dune heath in Purbeck (Hyman and Parsons, 1992). Mahon and Pearman (1993) state that, "Studland is a well-known locality." This species has been recorded in small numbers at the Knoll.

The click beetle, *Dichronychus equiseti*, and the rove beetle, *Stenus kiesenwetteri*, have been recorded from Studland but dates are unknown (South Haven Peninsula ISR).

**Status: RDB3**

The weevil, *Coniocleonus nebulosus*, was last recorded from Studland in 1989 (Studland ISR) and the ground beetle, *Dromius vectensis*, was recorded in 1964 (South Haven Peninsula ISR).

**Status: Na**

The Heath Tiger Beetle, *Cicindela sylvatica* (Plate 2), (formerly known as the Wood Tiger Beetle), can be found in a few isolated colonies on Studland NNR where suitable areas of bare ground exist on heathland.

There is a post-1950 record for the click beetle, *Ampedus sanguinolentus*, in SZ08 (Mendel, 1990) and this species (which is not recorded in the ISR data) can be found on the dune heath from May onwards (personal observations.)

The dor beetle, *Geotrupes pyrenaeus*, was recorded from "Studland" in 198- (South Haven Peninsula ISR). The specimen shown in Plate 6 was found in 2000 on dune heath, and on May 15th this year, a number of fresh adults were seen at various locations on heathland paths near the Little Sea.

There is also an old record (1939) for the rove beetle, *Zyras haworthi*.

**Status: Nb**

The ground beetle, *Carabus nitens* (cover picture), has been recorded from the South Haven Peninsula 10 km square SZ08 but appears, according to Luff (1998) to have no post-19-0 records for adjacent squares on Dorset Heathland. However, recent recording effort has shown that it is still present in SZ89, SY89 and SY99 (Keith Alexander Peter Brash John Bratton, pers. comm.)

This is also likely to be the case for *Carabus arvensis* (Plate 2), which, according to Luff, has no post-19-0 records for the South Haven Peninsula, but should still be present. This species frequents drier

heathland habitat where it occurs in southern Britain and is "found regularly in southern heaths such as those in Dorset and Hampshire".

The Dune Tiger Beetle, *Cicindela maritima*, was formerly found on the South Haven Peninsula but has not been recorded since 1964 (South Haven Peninsula ISR).

There appear to be no records (either ISR, or BRC data from Twinn and Harding, 1999) for at least three longhorn beetles (Plate 5) that are present on Studland: the Musk Beetle, *Aromia moschata* (which was photographed near the Little Sea in June 1998: Sutton and Cooper, 2000); the Four-banded Longhorn, *Leptura quadrifasciata* (formerly Nb, now Local), which is regularly present on heathland between the Little Sea and the Knoll car park; and the widespread timberman, *Rhagium bifasciatum*, which is commonly present in scattered remnants of dead pine.

Other nationally scarce species include the ground beetles, *Pterostichus lepidus* (sandy heathland habitat) and *Agonum nigrum* (heathland); click beetle, *Cardiophorus asellus* (heathland); the leaf beetle *Cryptocephalus bipunctatus*, (the specimen in Plate 6 was found in 2000 near the Knoll car park, where it had been previously recorded in 1989 (Cooter, 1989); *Aphodius plagiatus* (heathland); the rove beetles, *Gabrius keysianus* and *Gabrius velox*; pill beetle, *Porcinolus murinus* (dune slacks); jewel beetle, *Aphanisticus pusillus* (sand dunes); darkling beetle, *Crypticus quisquilius* (heathland); and the weevils, *Pseudaplemonus limonii* (the first Dorset record of this species was taken from saltmarsh near the Sandbanks Ferry in 1989; Cooter, 1989), *Rhynchaenus iota* and *Polydrusus confluens*.

**Status: Local**

The ground beetle, *Carabus granulatus* (Plate 2) is a hygrophilous species found in wetter habitats, although the specimen found on Studland in 1980 by a reputable coleopterist was on sandy heath SZ 020 830 (South Haven Peninsula ISR.) Other Local ground beetles include: *Notiophilus substriatus*, *Agonum obscurum*, *Agonum thoreyi*, *Harpalus anxius*, *Harpalus neglectus*, *Harpalus rufitarsis*, *Acupalpus dorsalis* and *Acupalpus dubius*.

The following have also been recorded from Studland: malachite beetles, *Anthocomus rufus* and *Psilothrix viridicoeruleus*; Red Poplar Leaf Beetle, *Chrysomela populi*; the ladybirds, *Chilocorus bipustulatus* and *Coccinella undecimpunctata*; the Minotaur Beetle, *Typhaeus typhoeus** (Figure 14); the rove beetles, *Paederus riparius*, *Ocypus*

* **ERRATA**: Please note, the species described as *Geotrupes mutator* in Plate 2 is a female Minotaur Beetle *Typhaeus typhoeus*!

*compressus* and *Gymnusa brevicollis*; the darkling beetles, *Phylan gibbus* and *Melanimon tibialis*; and the weevils *Otiorhynchus atroapterus* and *Philopedon plagiatus*.

**Figure 14.** The male Minotaur Beetle, a coleopteran *Triceratops*, showing its impressive horns. This species has presumably benefited from increasing rabbit populations on heathland.

## Other species

There are many other species of beetle to be found on the South Haven Peninsula including some pleasant surprises. The chafers, for instance, are well represented and include the colourful *Anomala dubia* (Plate 6) which can be found flying among the dunes in June, as well as *Serica brunnea* and *Hoplia philanthus* (Plate 6). The Green Tiger Beetle, *Cicindela campestris* (Plate 6), is a common sight on sandy paths where it takes flight readily in a blaze of burnished metallic green when approached. The impressive black ground beetle, *Broscus cephalotes*, with its huge jaws and dull waxy complexion can be found waiting to ambush prey from its burrow on the dunes, and of course the enchanting Glow-worm, *Lampyris noctiluca*, the highlight of one nocturnal nature trail at a hotel near the village of Studland, lights up the paths around the Knoll area in June and July.

**Water Beetles**

The water beetles merit special attention and have been studied well for over a century in the freshwater habitats of the peninsula. Table 1 provides a summary of current knowledge.

**Table 1. The water beetles of Studland NNR**

Status Key: RDB1 = Endangered; RDB2 = Vulnerable; RDB3 = Rare; Na = Nationally Scarce A (found in 30 or fewer 10 km squares); Nb = Nationally Scarce B (found in 31 – 100 10km squares)

| Dytiscidae | Status | Date recorded in Balfour-Browne (1949) | Date recorded in Foster (1985) | Date of last record and recorder of post-1980 BRC record (Foster, pers. comm..) |
|---|---|---|---|---|
| *Bidessus unistriatus* | RDB1 | Disappeared by 1918, possibly much earlier. | - | (Presumed extinct on Studland NNR) |
| *Graptodytes flavipes* | RDB2 | 1930-1939 possibly eliminated by 1939 war manoeuvres | - | (Presumed extinct on Studland NNR) |
| *Hydroporus necopinatus* (formerly *cantabricus*) | RDB3 | 1947-1949 | - | Dr D. Bilton, 2004 (pers. comm.) |
| *Graphoderus cinereus* | RDB3 | - | 1984 | Dr R.B.Angus, 1993 |
| *Rhantus frontalis* | Na | Recorded before 1929 | - | (Presumed extinct on Studland NNR) |
| *Coelambus parallelogrammus* | Na | Recorded before 1929 | - | (Presumed extinct on Studland NNR) |
| *Hydrovatus clypealis* | Na | 1947 - 1949 | 1984 | Mr. G. Nobes, 2002 |
| *Hydroporus ferrugineus* | Nb | 1930-1939 | - | - |
| *Hydroporus longulus* | Nb | Recorded before 1929 | - | - |
| *Hydroporus neglectus* | Nb | 1947 - 1949 | - | Mr. G. Nobes, 2002 |
| *Stictonectes lepidus* | Nb | 1947 - 1949 | - | Dr R.B.Angus, 1993 |
| *Graptodytes granularis* | Nb | 1930-1939 | - | Dr R.B.Angus, 1985 |
| *Agabus labiatus* | Nb | 1930-1939 | - | (Presumed extinct on Studland NNR) |
| *Ilybius aenescens* | Nb | 1947 - 1949 | 1984 | Dr R.B.Angus, 1985 |
| *Ilybius guttiger* | Nb | 1947 - 1949 | 1984 | Mr. G. Nobes, 2002 |
| *Rhantus grapii* | Nb | 1947 - 1949 | - | Dr R.B.Angus, 1985 |
| *Rhantus suturalis* | Nb | 1947 - 1949 | - | Dr R.B.Angus, 1985 |
| *Hydaticus seminiger* | Nb | 1947 - 1949 | - | Dr R.B.Angus, 1985 |
| *Dytiscus circumflexus* | Nb | 1930 - 1939 | - | - |
| *Laccophilus minutus* | Local | 1947 - 1949 | - | Mr. G. Nobes, 2002 |
| *Coelambus impressopunctatus* | Local | 1947 - 1949 | - | - |
| *Hydroporus incognitus* | Local | 1947 - 1949 | - | Dr R.B.Angus, 1989 |
| *Hydroporus obscurus* | Local | 1947 - 1949 | - | Mr. G. Nobes, 2002 |

| Dytiscidae continued | Status | Date recorded in Balfour-Browne (1949) | Date recorded in Foster (1985) | Date of last record and recorder of post-1980 BRC record (Foster, pers. comm..) |
|---|---|---|---|---|
| *Hydroporus striola* | Local | 1947 - 1949 | - | Dr R.B.Angus, 1993 |
| *Hydroporus umbrosus* | Local | 1947 - 1949 | - | Dr R.B.Angus, 1993 |
| *Graptodytes pictus* | Local | 1947 - 1949 | - | Dr R.B.Angus, 1989 |
| *Porhydrus lineatus* | Local | 1947 - 1949 | - | Dr R.B.Angus, 1989 |
| *Copelatus haemorrhoidalis* | Local | 1947 - 1949 | - | Mr. G. Nobes, 2002 |
| *Agabus affinis* | Local | 1947 - 1949 | - | Dr R.B.Angus, 1988 |
| *Rhantus suturellus* | Local | 1947 - 1949 | - | Mr. G. Nobes, 2002 |
| *Rhantus exsoletus* | Local | 1947 - 1949 | - | Dr R.B.Angus, 1993 |
| *Dytiscus semisulcatus* | Local | 1947 - 1949 | - | Dr R.B.Angus, 1993 |
| *Acilius sulcatus* | Not given | 1947 - 1949 | - | Mr. G. Nobes, 2002 |
| *Agabus bipustulatus* | Not given | 1947 - 1949 | - | Mr. G. Nobes, 2002 |
| *Agabus nebulosus* | Not given | 1930-1939 | - | - |
| *Agabus sturmii* | Not given | 1947 - 1949 | - | Dr R.G.Booth, 1998 |
| *Colymbetes fuscus* | Not given | 1947 - 1949 | - | Mr. G. Nobes, 2002 |
| *Dytiscus marginalis* | Not given | 1947 - 1949 | - | Mr. G. Nobes, 2002 |
| *Hydroglyphus pusillus* | Not given | - | - | Mr. G. Nobes, 2002 |
| *Hydroporus angustatus* | Not given | 1947 - 1949 | - | Mr. G. Nobes, 2002 |
| *Hydroporus erythrocephalus* | Not given | 1947 - 1949 | - | Mr. G. Nobes, 2002 |
| *Hydroporus gyllenhalii* | Not given | 1947 - 1949 | - | Mr. G. Nobes, 2002 |
| *Hydroporus memnonius* | Not given | 1947 - 1949 | - | Mr. G. Nobes, 2002 |
| *Hydroporus palustris* | Not given | 1947 - 1949 | - | Dr R.B.Angus, 1989 |
| *Hydroporus planus* | Not given | 1947 - 1949 | - | Mr. G. Nobes, 2002 |
| *Hydroporus pubescens* | Not given | 1947 - 1949 | - | Dr R.B.Angus, 1993 |
| *Hydroporus tesselatus* | Not given | 1947 - 1949 | - | Mr. G. Nobes, 2002 |
| *Hydroporus tristis* | Not given | 1947 - 1949 | - | Mr. G. Nobes, 2002 |
| *Hygrotus impressopunctas* | Not given | - | - | Mr. G. Nobes, 2002 |
| *Hygrotus inequalis* | Not given | 1947 - 1949 | - | Mr. G. Nobes, 2002 |
| *Hyphydrus ovatus* | Not given | 1947 - 1949 | - | Mr. G. Nobes, 2002 |
| *Ilybius fuliginosus* | Not given | 1947 - 1949 | - | - |
| *Ilybius montanus* | Not given | - | - | Mr. G. Nobes, 2002 |
| *Ilybius quadriguttatus* | Not given | 1947 - 1949 | - | - |
| *Rhantus bistriatus* | Not given | 1947 - 1949 | - | - |

| Hydrophilidae | Status | Date recorded in Balfour-Browne (1949) | Date recorded in Foster (1985) | Date of last record and recorder of post-1980 BRC record (Foster, pers. comm..) |
|---|---|---|---|---|
| *Helophorus alternans* | Na | 1930-1939 | - | (Presumed extinct on Studland NNR) |
| *Hydrochus angustatus* | Nb | 1930 – 1939 | - | Mr. G. Nobes, 2002 |
| *Helophorus fulgidicollis* | Nb | 1947 – 1949 | - | - |
| *Cercyon convexiusculus* | Nb | 1947 – 1949 | - | Mr. G. Nobes, 2002 |
| *Laccobius atratus* | Nb | 1947 – 1949 | - | - |
| *Helochares punctatus* | Nb | 1947 – 1949 | - | Mr. G. Nobes, 2002 |
| *Enochrus affinis* | Nb | 1947 – 1949 | - | Mr. G. Nobes, 2002 |
| *Enochrus bicolor* | Nb | 1930 – 1939 | - | - |
| *Enochrus ochropterus* | Nb | 1947 – 1949 | - | Mr. G. Nobes, 2002 |
| *Enochrus quadripunctatus* | Nb | 1930 – 1939 | - | - |
| *Chaetarthria seminulum* | Nb | 1929 | - | Dr R.G.Booth, 1997 |
| *Berosus luridus* | Nb | 1930-1939 | - | - |
| *Berosus signaticollis* | Nb | 1930-1939 | - | Mr. G. Nobes, 2002 |
| *Helophorus nubilus* | Local | 1930 – 1939 | - | - |
| *Enochrus coarctatus* | Local | 1947 – 1949 | - | Mr. G. Nobes, 2002 |
| *Enochrus testaceus* | Local | 1947 – 1949 | - | - |
| *Cymbiodyta marginellus* | Local | 1947 – 1949 | - | Mr. G. Nobes, 2002 |
| *Ochthebius dilatatus* | Local | 1930 – 1939 | - | - |
| *Anacaena globulus* | Not given | 1947 – 1949 | - | - |
| *Anacaena limbata* | Not given | 1947 – 1949 | - | - |
| *Anacaena lutescens* | Not given | - | - | Dr R.B.Angus, 1989 |
| *Helophorus brevipalpis* | Not given | 1947 – 1949 | - | Dr R.B.Angus, 1988 |
| *Helophorus aequalis* | Not given | 1947 – 1949 | - | Mr. G. Nobes, 2002 |
| *Helophorus flavipes* | Not given | 1947 – 1949 | - | Mr. G. Nobes, 2002 |
| *Helophorus minutus* | Not given | 1947 – 1949 | - | Mr. G. Nobes, 2002 |
| *Hydrobius fuscipes* | Not given | 1947 – 1949 | - | Mr. G. Nobes, 2002 |
| *Coelostoma orbiculare* | Not given | - | - | Dr R.G.Booth, 1997 |
| *Cercyon littoralis* | Not given | 1947 – 1949 | - | - |

| Hydraenidae | Status | Date recorded in Balfour-Browne (1949) | Date recorded in Foster (1985) | Date of last record and recorder of post-1980 BRC record (Foster, pers. comm..) |
|---|---|---|---|---|
| *Ochthebius marinus* | Nb | 1947 - 1949 | - | - |
| *Ochthebius punctatus* | Nb | 1930 - 1939 | - | Dr R.B.Angus, 1988 |
| *Ochthebius viridis* | Nb | 1930 - 1939 | - | Dr R.G.Booth, 1998 |
| *Ochthebius minimus* | Not given | 1947 – 1949 | - | Mr. G. Nobes, 2002 |

| Haliplidae | Status | Date recorded in Balfour-Browne (1949) | Date recorded in Foster (1985) | Date of last record and recorder of post-1980 BRC record (Foster, pers. comm..) |
|---|---|---|---|---|
| *Haliplus immaculatus* (Presumed extinct on Studland NNR) | Local | 1930 – 1939 | - | - |
| *Haliplus fulvus* | Local | 1947 – 1949 | - | Mr. G. Nobes, 2002 |
| *Haliplus ruficollis* | Not given | 1947 – 1949 | - | Mr. G. Nobes, 2002 |

| Noteridae | Status | Date recorded in Balfour-Browne (1949) | Date recorded in Foster (1985) | Date of last record and recorder of post-1980 BRC record (Foster, pers. comm..) |
|---|---|---|---|---|
| *Noterus clavicornis* | Local | 1947 - 1949 | - | Mr. G. Nobes, 2002 |

| Gyrinidae | Status | Date recorded in Balfour-Browne (1949) | Date recorded in Foster (1985) | Date of last record and recorder of post-1980 BRC record (Foster, pers. comm..) |
|---|---|---|---|---|
| *Gyrinus minutus* | Nb | - | 1984 | - |
| *Gyrinus caspius* | Not given | 1947 – 1949 | - | Mr. G. Nobes, 2002 |
| *Gyrinus marinis* | Not given | 1947 – 1949 | - | Mr. G. Nobes, 2002 |
| *Gyrinus substriatus* | Not given | 1947 – 1949 | - | Dr R.B.Angus, 1989 |

| Dryopidae | Status | Date recorded in Balfour-Browne (1949) | Date recorded in Foster (1985) | Date of last record and recorder of post-1980 BRC record (Foster, pers. comm..) |
|---|---|---|---|---|
| *Dryops striatellus* | Not given | - | - | Mr. G. Nobes, 2002 |

| Scirtidae | Status | Date recorded in Balfour-Browne (1949) | Date recorded in Foster (1985) | Date of last record and recorder of post-1980 BRC record (Foster, pers. comm..) |
|---|---|---|---|---|
| *Cyphon hilaris* | Not given | - | - | Dr R.G.Booth, 1997 |
| *Cyphon ochraceus* | Not given | - | - | Mr S.A.Williams, 1990 |
| *Cyphon padi* | Not given | - | - | Dr R.G.Booth, 1997 |
| *Cyphon variabilis* | Not given | - | - | Dr R.G.Booth, 1997 |
| *Scirtes hemisphaericus* | Not given | - | - | Dr R.G.Booth, 1998 |

**Bugs (Hemiptera)**

**Status: RDB2**

The last record of the shorebug, *Saldula setulosa*, was made in 1964 (South Haven Peninsula ISR).

**Status: RDB3**

The only British record for the ground bug, *Nysius graminicola*, is from a single male specimen found under a heather clump between Little Sea and the Dunes in 1977. Other RDB3 species are the ground bugs, *Ortholomus punctipennis* and *Pachybrachius luridus*.

**Status: Na**

Shorebug, *Micracanthia marginalis*.

**Status: Nb**

Nationally scarce species that have been recorded include the plantbugs, *Strongylocoris luridus* and *Adelphocoris ticinensis*, and the water-cricket, *Microvelia pygmaea*; the lacehopper, *Oliarus leporinus*; the planthopper, *Struebingianella dalei*; and the ground bug, *Rhyparochromus pini*.

**Status: Local**

Local species that have been recorded include the shorebug, *Chartoscirta elegantula*; the Tree Hopper, *Centrotus cornutus*; the leafhoppers, *Deltocephalus maculiceps*, *Sonronius dahlbomi* and *Sardius argus*; the planthopper, *Gravesteiniella boldi*; and the ground bugs, *Henestaris laticeps* and *Ischnocoris angustulus*.

**Flies (Diptera)**

The Diptera of the South Haven Peninsula have been well studied historically, but there is a paucity of data regarding recent records for many scarce and threatened species. In the absence of a modern record, the date of the last record for each species, according to the ISR data held by English Nature at Peterborough, (much of which has been retrieved from Brown and Searle (1974), Hadley (1984b) and Levy, Levy and Dean (1989)) is provided for each species.

**Status: RDB1**

The endangered (RDB1) horse fly, the Black Deerfly, *Chrysops sepulchralis*, was found on Studland when an entomologist was bitten by several females in the vicinity of a boggy area in 1989 (Studland ISR)

and also by Bryan Pinchen (10.viii.01) on Godlingstone Heath. Bog pools with a floating mat of *Sphagnum* appear to be the preferred habitat of this species (Stubbs and Drake, 2001).

The hoverfly, *Chrysotoxum vernale*, was recorded from the South Haven Peninsula in 1968, and the provisional atlas of British hoverflies shows that there is a post-1980 record for this species in SZ08 (Ball and Morris, 2000).

**Status: RDB2**

There are records for the hoverfly, *Chrysotoxum octomaculatum*, from 1933-1938 although these are problematic because this species was subsequently separated from *C. verrali* in 1940 (Ball and Morris, 2000). However, this species has since been refound by Bryan Pinchen (10.viii.01) in Godlingstone Heath (pers. comm.). *Sphaerophoria loewi* (1930 – 1939) and *Eristalis cryptarum* (1933 – 1938) have not been refound since the 1930's, but *Parhelophilus consimilis* (1934 – 1938) is still present on the peninsula. The record for the Striped Horsefly, *Hybomitra expollicata* (1909) was believed to be erroneous (Drake, 1991), although a subsequent publication (Stubbs and Drake, 2001) appears to recognise its validity.

The Godlingstone and Studland Heath NNR complex provides heathland habitat of vital importance for the RDB2 species, the Heath Bee-fly, *Bombylius minor*, and is the stronghold for this species in Britain. This species, which is now known from only a few sites in Dorset, is a parasitoid of solitary bees of the genus *Colletes*, and is strongly associated with *Colletes daviesianus* (Species Action Plan).

**Status: RDB3**

There are old records for: the dance fly, *Chersodromia cursitans* (1904); and *Physocephala nigra* (1930).

The rare Mottled Bee-fly, *Thyridanthrax fenestratus*, is still present on Studland and can be seen on the sandy paths (Figure 15) in the vicinity of its host, the large sand wasp, *Ammophila pubescens* (see Figures 19, 20 and 21).

**Figure 15.** Recent research (Edwards, 1994) has shown that the Mottled Bee-fly is parasitic on the large sand wasp, *Ammophila pubescens*.

**Status: Nb**

There are old records for: the hoverflies, *Chrysogaster macquarti* (1959) and *Neoascia geniculata* (1933 – 1938); and more recent records for the hoverflies, *Microdon mutabilis* (post-1980); *Xanthandrus comtus* (post-1980); *Metasyrphus latilunulatus* (1988); *Eumerus sabulonum* (post-1980); and *Criorhina ranunculi* (1992).

**Status: Local**

There are old records for: the dance fly, *Stilpon nubilus* (1906); the hoverflies, *Platycheirus tarsalis* (1933); *Chrysotoxum verralli* (1930 – 1939); and *Microdon eggeri* (1935); and more recent records for: the conopid *Conops quadrifasciata* (post-1980); the hoverflies, *Trichopsomyia flavitarsis* (post-1980); *Chalcosyrphus nemorum* (post-1980); *Neocnemodon vitripennis* (post-1980); *Dasysyrphus lunulatus* (1989); *Anasimyia transfuga* (post-1980); *Chalcosyrphus nemorum* (1989); and *Parhelophilus frutetorum* (post-1980); the robberflies, *Dysmachus trigonus* (post-1980); *Neoitamus cyanurus* (1974); *Philonicus albiceps* (1978); *Dioctria baumhaueri* (1974); and the stiletto flies, *Thereva annulata* (1992); and *Thereva bipunctata* (1974).

Many commoner species are also present, *e.g.* the hoverflies *Chrysotoxum festivum*, *Epistrophe grossulariae* and *Dasysyrphus albostriatus* were all recorded from Godlingstone Heath in 2002 (Bryan Pinchen, pers. comm.)

**Bees Wasps and Ants (Hymenoptera)**

The heathland, dune heath and dune habitats of the South Haven Peninsula provide habitat for an outstanding assemblage of aculeates, which have been studied by entomologists since Victorian times. However, as with the Diptera, much of the data is old and modern surveys have been required to assess the status of species in this region.

**Status: RDB1**

*Homonotus sanguinolentus* was refound on Godlingstone Heath by Mark Pavett this year (Mike Edwards, pers. comm.)

The Purbeck Mason Wasp, *Pseudepipona herrichii* (RBD1), was the subject of an extensive survey between 1995 and 1997 (Roberts and Else, 1997), which confirmed the presence of a number of nesting colonies on Godlingstone Heath. This species is now doing well here and at other newly discovered sites in Dorset.

There are old records for the spider-hunting wasp, *Ceropales variegata* (1935), which was last recorded at Parley, Dorset in 1953

(S.J. Falk in: Edwards, 199⁻), and the solitary bee, *Anthophora retusa*. Regarding this latter species (which is listed as RDB3 in Shirt, 198⁻), Roberts (Roberts, S.P.M. in: Mahon and Pearman, 1993) states that it was, "Formerly widespread and not uncommon. There are many records from a variety of habitats up until the late 1940's, since when it has not been seen anywhere in the country."

**Status: RDB3**

There are historical records for the large and spectacular jewel wasp, *Hedychrum niemelai*** (1959) and post-19⁻0 records for this species from SZ08 and surrounding 10 km squares on Dorset heathland (Archer, M.E. and Roberts, S.P.M. in: Edwards and Telfer, 2002).

The ant, *Strongylognathus testaceus*, was recorded in 1952 (Spooner, G.M.), and Roberts (in: Mahon and Pearman, 1993) states that it is recorded in Dorset from Studland, Hartland Moor, Stoborough Heath and nearby heathland, and so is probably genuinely rare."

The solitary wasp, *Psen spooneri*, is reported to be "widespread but not at all common on Dorset heathlands", with recent records from "Studland Heath...and Godlingstone Heath".

Roberts (in Mahon and Pearman, 1993) describes the solitary wasp, *Diodontus insidiosus*, as being "recently recorded only from Holt Heath and Godlingstone Heath", although the recent provisional distribution map (Allen, G.W. and Roberts, S.P.M. in Edwards and Telfer, 2002), according to the post-19⁻0 records provided, suggests that this species is now somewhat more prosperous in the region.

The solitary wasp, *Cerceris quinquefasciata*, had apparently disappeared from Dorset (Else, G.R. and Field, J.P. in: Edwards, 199⁻) but this species has since been rediscovered at one of its original sites, Old Harry Rocks to the south of the peninsula (Mike Edwards, pers. comm.)

There appear to be no recent records for: the solitary bee, *Halictus confusus* (since 1939); and the nomad bees, *Nomada fulvicornis* (since 1939) and *Nomada robertjeotiana* (since 1938).

There are post-19⁻0 records for the solitary bee, *Lasioglossum brevicorne* on Studland NNR and the Dorset heaths (Edwards, M. and Roberts, S.P.M in: Edwards and Telfer, 2002).

There is a record for the solitary bee, *Coelioxys quadridentata*, from Godlingstone Heath in 1984 (S.P.M. Roberts in: Mahon and Pearman, *loc. cit.*).

** This species is shown, together with other members of the Chrysididae (jewel wasps) in the colour section of Bulletin #451: The Aculeate Hymenopteran Fauna of Bushy Park, Middlesex (Sutton and Baldock, 2003).

**Status: Na**

There appear to be no recent records for: the solitary wasp, *Psen bruxellensis* (since 1962); the solitary bees *Colletes marginatus* (since 1939); *Andrena falsifica*, and *Andrena minutuloides* (both since 1970); *Sphecodes longulus*, which was sparingly recorded from Poole Basin Heaths, last record from Holt Heath in 1992 (Roberts in: Mahon and Pearman, *loc. cit.*); and the bumble bee *Bombus subterraneus* (since 1949).

The spider-hunting wasp, *Arachnospila wesmaeli*, which had not been recorded since 1938, was recorded on Godlingstone Heath by Bryan Pinchen (pers. comm.) in 2002.

According to Roberts (in Mahon and Pearman, *loc. cit.*), the spider-hunting wasp, *Aporus unicolor* , is "Widespread in southern Dorset and on the heathlands, but never common. Associated with the Purse-web Spider, *Atypus affinis*. There have been many records of the wasp from Durlston Head and a few from St. Oswalds's Bay since 1970." There appear to be no post-1970 records for SZ08 (Falk, S.J. and Roberts, S.P.M. in: Edwards, 1997).

Species for which (according to the provisional distribution atlases, *loc. cit.*; and Mahon and Pearman, 1993) there are modern records include: the potter wasp, *Eumenes coarctatus*; the solitary wasps, *Crabro scutellatus*, *Oxybelus argentatus* and *Oxybelus mandibularis*; the solitary bees *Andrena argentata* (plentiful at Studland); and *Sphecodes reticulatus* (recorded from Godlingstone Heath in 1985); and the nomad bee *Eucera longicornis*.

**Status: Nb**

There appear to be no recent records for: the solitary wasp, *Ectemnius sexcinctus* (although it may still be present); the solitary bees, *Andrena trimmerana*, (recently recorded from Durlston Head but not Studland); *Andrena bimaculata* and *Andrena humilis*, which are both widespread but uncommon on Dorset heaths, with the only recent records from Holt Heath, in 1987 and 1988 respectively; *Andrena ocreata*; *Stelis punctulatissima* (since 1938); the nomad bee, *Nomada flavopicta* (no specific information regarding Studland, but found at Holt Heath and Durlston Head in 1992); the bumble bees, *Bombus rupestris* (since 1927) and *Bombus distinguendus* (since 1939).

Species for which (according to provisional atlases, *loc. cit.*, and Mahon and Pearman, 1993) there are modern records include: the Large Velvet Ant, *Mutilla europaea* (Plate 6); the Small Velvet Ant,

*Smicromyrme rufipes*; *Methocha ichneumonides* (which is parasitic on the Green Tiger Beetle); the Erratic Ant, *Tapinoma erraticum*; the solitary wasps, *Arachnospila minutula*, *Evagetes dubius*, *Podalonia hirsuta* and *Nysson trimaculatus*; the solitary bees, *Andrena nigriceps* (very rare, possibly still present on Studland) and *Dasypoda altercator*; and the leaf-cutter bee, *Megachile leachella*.

**Status: Local**

The solitary bee, *Andrena praecox*, and the nomad bee, *Melecta albifrons*, are both southern species with widespread distributions that should still be present on the peninsula. The solitary bee, *Andrena coitana*, has not been recorded recently. This species, which is local and uncommonly found, has been proposed as new BAP species (Mike Edwards, pers. comm.)

Many other species, which are not regarded as scarce or threatened, are present on the South Haven Peninsula and their presence (*e.g. Lasius fuliginosus*, *Odynerus spinipes*, *Symmorphus gracilis*, the Hornet, *Vespa crabro*, the digger wasps *Crabro cribrarius*, *Crabro peltarius*, *Oxybelus uniglumis* and the bumble bee *Bombus humilis*) is indicated by post-1970 records in the provisional atlases (*loc. cit.*).

Among these are familiar species such as Red Wood Ants, *Formica rufa*, that are present in great numbers in some areas; the tiny but aggressive ant, *Tetramorium caespitum* (which stings readily); large and colourful species such as the Bee Wolf, *Philanthus triangulum*, and the sand wasp, *Ammophila sabulosa*; and the remarkable leaf-cutter bee, *Megachile maritima*.

There are also species, particularly those with habitat specialisms, which should now be afforded some degree of status and protection. Among these are included the jewel wasp, *Hedychridium roseum*; its host, *Astata boops*; and the large sand wasp, *Ammophila pubescens*.

**Diary Notes**

I can well remember my first encounter with the wildlife of Studland when, having finished our exams, a friend and I decided to walk the length and breadth of Dorset during the hot summer of 1984. Stepping from the Sandbanks Ferry that took us the short distance across the mouth of Poole Harbour, I was stunned by the sheer quantity and diversity of life that could be found on the dunes and heathland, particularly the colourful orthopteran and odonatan fauna. The entire day was spent wandering the dune heath in the blistering heat of the sun, completely immersed in the observation of all that surrounded us.

That, coupled with the fact that we were so heavily laden with food, meant that it took us until dusk to reach our intended pitch site on Ballard Down near Old Harry Rocks, at which point we did the sensible thing and had an extremely large fry-up. From that time on, Studland has been a special place, the magic of which has not diminished with time.

**Cream-spot Tigers and Graylings (29.vi.98)**

A cool start to the day began with close observation of a Grayling, *Hipparchia semele*, and a Cream-spot Tiger Moth, *Arctia villica*, that flew lethargically among the dunes near the National Trust café (SZ 035 835). As the day warmed up, a single specimen of the dor beetle, *Geotrupes pyrenaeus*, as highly polished as any army officer's boot was observed crawling over the white sand. On the dune heath near the Little Sea, the sparsely vegetated ground yielded a Large Velvet Ant, *Mutilla europaea*, (which, apparently, has an excruciatingly painful sting) and the small chafer, *Hoplia philanthus*, which was seen flying among the congregation of lilac and yellow dune flowers (all Plate 6).

The highlight of the day was undoubtedly the discovery of a huge longhorn beetle, whose exposed abdomen blazed metallic blue in the sunlight as it held sparkling green elytra aloft and whirred noisily above the heather. It was the Musk Beetle, *Aromia moschata*, this being apparently only the second recorded locality for Dorset (Twinn and Harding, 1999), which was photographed on a pine log (Plate 5).

**Heath Tigers and Sand Lizards (18.vi.00)**

On arriving at 9 am, several spikes of the Bee Orchid, *Ophrys apifera*, were observed flowering in the National Trust car park. At the back of the top stage of the car park by the picnic bench, I heard the familiar sound of a snake disappear into the undergrowth as I photographed an interesting variation (var. *sanguinolentus*) of the leaf beetle, *Cryptocephalus bipunctatus* (Plate 6).

Walking towards the Little Sea, a number of male Black-tailed Skimmers, *Orthetrum cancellatum*, were seen basking on the path in the strong morning sunlight, and several large sand wasps, *Ammophila* sp., were active on the banks of the path. The occasional metallic green flash appeared and disappeared as Green Tiger Beetles, *Cicindela campestris* (Plate 6) flew in short bursts ahead of us, and on the bracken, an unusually pale specimen of the 4-Banded Longhorn, *Leptura quadrifasciata*, had settled.

As we approached a lone pine tree on the dune heath, the glinting blue flash of another tiger beetle was observed, but this was from a much darker, coppery specimen, and closer inspection revealed that it was the rare Heath Tiger Beetle, *Cicindela sylvatica* (Plate 2). In all, four specimens were observed in this small localised colony, flying between patches of bare ground in the heather and on the sandy path (Figure 16).

**Figure 16.** Tiger beetles and dragonflies are a familiar sight on the bare sandy paths of Studland's dune heath.

I began to search the dune heath for one of its most magnificent inhabitants, the Sand Lizard, *Lacerta agilis*, and left Sara to sketch the scenery from the top of a small dune hillock, away from the marauding wood ants that were out in force everywhere on the less exposed areas of heath. Several more flying jewels in the form of the chafer, *Anomala dubia* (Plate 6), graced the scene, and a specimen of the click beetle, *Ampedus sanguinolentus*, was coaxed from the air with a guiding hand. I returned to the hillock, and as I explained my lack of success regarding the Sand Lizard, Sara said, "What, like this one here?", pointing to a large female, an absolute beauty, preoccupied with excavating a burrow for her eggs at the side of the path. Soon after, a

large male was observed, resplendent in dazzling citrus green courtship attire, and was carefully approached and captured on film***.

Returning back along a path between the sand dunes of Studland Bay and the dune heath, the RDB3 Bee-fly, *Thyridanthrax fenestratus*, was seen at rest on the path (Figure 15).

**Cone-heads and Warblers (6.viii.00)**

Studland was visited briefly on the returning leg of a visit to observe the Scaly Cricket, *Pseudomogoplistes vicentae*, at Branscombe Beach in Devon. Heath Tiger Beetles were still present in the usual localised colony and the orthopteran fauna, which was in full song, included the Grey Bush-cricket; Long-winged Cone-head (including extra-macropterous specimen, Figure 13); Field, Meadow and Mottled Grasshoppers; and Common and Cepero's Ground-hoppers. The Lesser Cockroach, *Ectobius panzeri*, was also commonly encountered at the edge of heather stands. The Ruddy Darter was on the wing and in addition to eight sand lizards observed at various locations on the dune heath; a pair of Dartford Warblers could be seen, each standing proud at the pinnacle of their respective gorse bushes.

**Sand Wasps and Sika Deer (03.vi.04)**

A large Poplar Hawk Moth, *Laothoe populi*, was observed on a wooden post as we entered the usual path from the car park. In a clearing on our left as we proceeded, as usual, towards the Little Sea, we disturbed a young deer (Figure 17), which I took to be a Fallow Deer, but I was subsequently told by a fellow naturalist that it was a Sika Deer, *Cervus nippon*.

The gentleman had been looking for the Royal Fern, *Osmunda regalis*, a widespread but local species of acid soils which was becoming increasingly uncommon. Studland was once a well-known locality for this species but, according to my friend, who believed that the increasing population of Sika Deer had played a role in its disappearance, it was now very difficult to find.

Cepero's Ground-hopper was present along the damper areas of the track and a specimen of the distinctive Wasp Beetle, *Clytus arietus*, with its jerky waspish movements, had flown onto my rucksack. The huge

*** Please note: a Disturbance Licence is required from English Nature to photograph Sand Lizards in the wild. This matter, from lengthy discussions with all concerned, is unfortunately, uncompromisingly draconian. It may be that you are a naturalist and conservationist with more regard for species and their habitats than most. It may even be that an army of careful naturalists will surely do less damage than a single Dorset cat (re: Sand Lizard predation; Haskins, 2000). The fact remains that by attempting to capture this wonderful aspect of our British fauna on film in the absence of that licence, you are liable to receive a £5000- fine or a prison term.

**Figure 17.** A young Sika Deer in a dune heath clearing.

and robust red and black solitary wasp, *Podalonia hirsuta* (Figure 18) was seen frenetically searching for equally large day-burrowing noctuid larvae, which it locates and digs up prior to excavating a nest, 6-7 cm long, to contain the paralysed victim for its offspring to consume (Archer, M.E. and Roberts, S.P.M. in: Edwards, 1997).

A mating pair of 4-Banded Longhorn Beetles, *Leptura quadrifasciata*, was seen on bracken (see Plate 3, *Bulletin* 1455) and many Mottled Grasshoppers were singing on the short turf and heather next to the path. A profusion of Common Ground-hoppers was found in a small shaded gully and on an adjacent path, the large sand wasp, *Ammophila pubescens*, was excavating a burrow. Unlike *P. hirsuta* (and in common with the majority of species), this species excavates a burrow before capturing items of prey to provision it. Figures 19, 20 and 21 show the wasp excavating its burrow in sequence.

**Figure 18.** The large solitary wasp, *Podalonia hirsuta*.

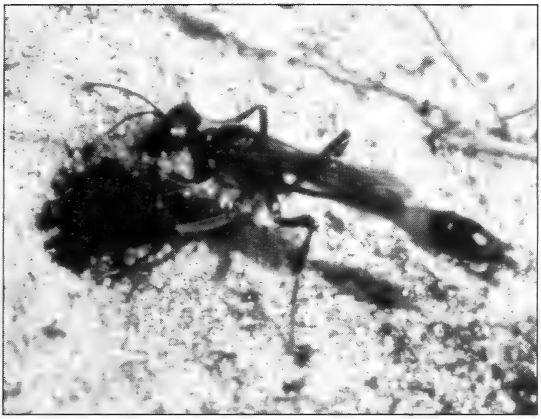

**Figure 19**. Entering the burrow.

**Figure 20**. 'Singing' while excavating the burrow.

**Figure 21**. Reversing from the burrow with a pellet of sand.

In Figure 20, in which the abdomen of the sand wasp is protruding vertically from the burrow, the wasp is 'singing', *i.e.* producing a high-pitched hum, prior to reversing from the burrow with a large quantity of sand in its mandibles. Step (1932) describes this 'singing' as a means of warning other wasps that the burrow was taken, although it appeared, to me at least, that the vibrations may somehow aid the extraction of sand from the burrow (in the same way that some species of bees vibrate their wings to deliberately shake the pollen from flowers.) I was amazed to see that the large jawfuls of sand did not simply fall apart. How did the sand particles stay together without falling through its huge mandibles? They must have been slightly damp. I did not stay to observe the final moments of nest construction, where the sand wasp apparently uses its head to tap down the sand and debris used to conceal the burrow entrance. The Mottled Bee-fly (Figure 15), a parasite of the observed sand wasp, was again seen on the paths (SZ 033 838) in the vicinity of this activity.

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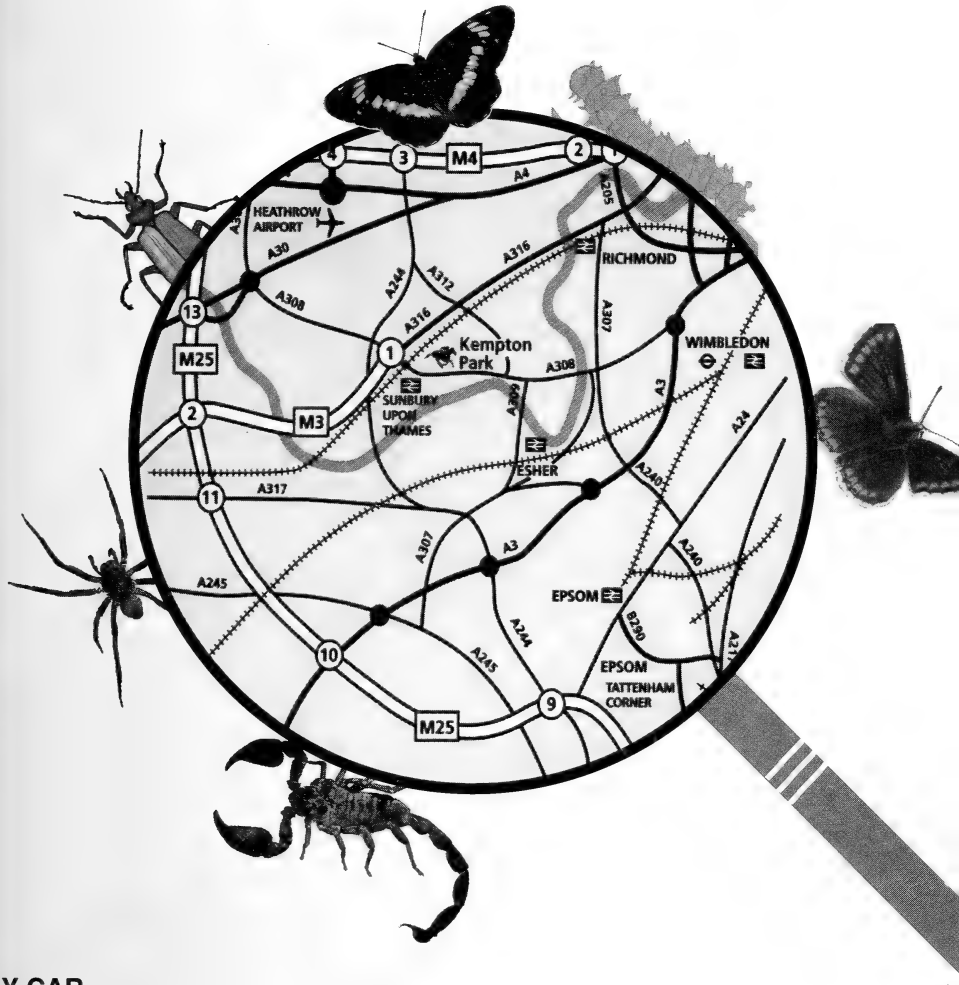


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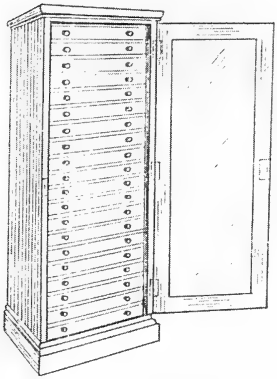

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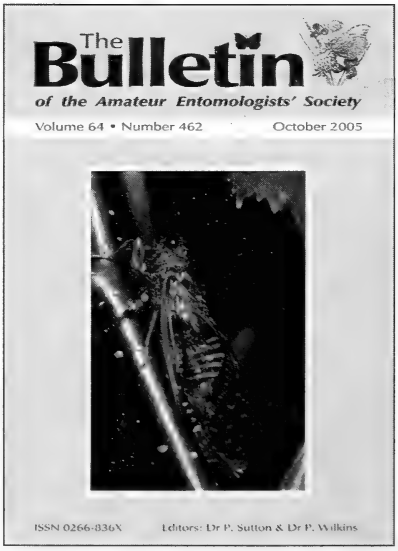


## Bulletin Cover

The cover picture for this edition of the *Bulletin* shows a specimen of the New Forest Cicada *Cicadetta montana* Scopoli taken by the late Jim Grant. As per the excellent illustrated article by Bryan Pinchen in *Bulletin* 459, this species, which was first discovered in Britain in 1812, "has been recorded from 26 localities in the New Forest" to date, "with proof of breeding from only one modern locality", from which it was last recorded in 1993.

Photograph: Jim Grant (with kind permission from Lena K. Ward.)

The Bulletin
of the Amateur Entomologists' Society



Volume 64 • Number 462 October 2005

# Editorial

Although the summer is fading (though October seems to be warmer than August was!), I hope that the eclectic mix of articles in this *Bulletin* conjure up feelings of happy days insect hunting. I am particularly pleased that one article (by Maria Fremlin) was inspired by an article in Volume 63 of the *Bulletin*. It is always a pleasure that members find ideas within these pages and adapt them for their own needs. If you have carried out similar studies, please write about it, so we can publish your findings.

I would also like to make a plea to all the skilled photographers who are members of the AES. Recently, cover pictures for the *Bulletin* have been predominantly provided by Council members. We would like to include more members' photographs over the next year. So, if you have an eye-catching or unusual photograph of an insect contact the editors via the PO Box or email phil@bombus.freeserve.co.uk.

Please read the Registrar's note on the Northern Exhibition. This is worthy of support and relies on volunteer help to make it a success.

**Phil Wilkins**

**Errata**

Well done to all those who spotted that the start of Graham Foggitt and Anna Powell's piece 'Hilltopping' was incomplete in the last Bulletin. The full article appears in this issue.

David Keen has pointed out an error in the June 2005 *Bulletin* (Vol 64, No 460). On p121, the piece on Hummingbird Hibernation somehow became inserted in the middle of his article on macrolabic earwigs. His item should end:

Although the majority of males that I have come across on Esher Common in Surrey have been of the normal form, I did find two macrolabics on 25 July 1976.

The references apply to David Keen's article.

# Isle of Wight – May 2004

*by Tony Steele (4106)*

*57 Westfield Road, Barnehurst, Kent DA7 6LR.*

Arrived on the Island on Monday 10th May, on what was to be a very busy five-day visit, as this time a generator was taken along to enable me to carry out some moth trapping for the Forestry Commission. First stop was Combley Great Wood at Havenstreet where a suitable trapping site was found. From there I visited Monkham Copse to check on what possibly could be the last Island colony of the Duke of Burgundy *Hamearis lucina*. After much searching, I managed to locate just four individuals. After departing Monkham, I drove into the very large Brighstone Forest, again to find another trapping site. As I wandered round the wide rides many Small Copper *Lycaena phlaeas* were noted. Also seen were Peacock *Inachis io* and Orange Tip *Anthocharis cardamines*, and the day flying moth *Adela reaumurella*. I returned to Combley Great Wood in the evening and started trapping at 21.05 hrs. Conditions were ideal, being cloudy and mild. First species to arrive was Speckled Yellow *Pseudopanthera macularia*, which was followed by Small White Wave *Asthena albulata* and Brindled Pug *Eupithecia abbreviata*. Some of the other species noted were Lunar Marbled Brown *Drymonia ruficornis*, Great Prominent *Peridea anceps*, Pale Prominent *Pterostoma palpina* and Frosted Green *Polyploca ridens*. Trapping ended at 23.15 hrs, and just before the light was turned off an example of The Mocha *Cyclophora annularia*, a Notable B species, came gliding down from a nearby tree, a perfect end to the night in which I recorded 19 species.

The following day a visit was made to the cliff path between Niton and Blackgang to view the extent of coastal erosion. Several large areas had slumped seaward, taking with it existing Glanville Fritillary *Melitaea cinxia* habitat, but also creating new. Due to the rather windy conditions, the only butterflies seen were singletons of Large White *Pieris brassicae* and Peacock. Next I went to Wheelers Bay, a much more sheltered site. The terrain between the esplanade and cliff base is ideal, and several Glanville's were seen along with many larvae. Also seen was Small White *P. rapae*, Common Blue *Polyommatus icarus* and three Clouded Yellow *Colias croceus*. The evening saw me running the moth trap in a friend's garden, and upon inspecting it next morning there was just 22 moths of seven species.

On the Wednesday a visit was made to another Forestry Commission location, Firestone Copse, to determine a trapping position. Pearl

Bordered Fritillary *Boloria euphrosyne* used to occur here, but owing to lack of management in recent years, they have since disappeared. I next went to Mount Joy, located just outside Newport and overlooking Carisbrooke Castle. Several day flying moths were noted, such as *Crambus lathoniellus, Scoparia subfusca, Pyrausta aurata* and the interesting chalk downland Pyrale, *Opsibotys fuscalis*. The only butterflies seen were Small Heath *Coenonympha pamphilus* and Small Copper *Lycaena phlaeas*. The evening was spent trapping in Brighstone Forest, starting at 21.10hrs. First species to arrive were Nut-tree Tussock *Colocasia coryli*, Red Twin-spot Carpet *Xanthorhoe spadicearia*, Shuttle-shaped Dart *Agrotis puta* and Clouded Drab *Orthosia incerta*. I finished at 23.10, by which time 21 species were recorded, including another Notable B species, the Orange Footman *Eilema sororcula*.

On the Thursday I visited Binnel Bay. my favourite site for the Glanville Fritillary. Even though it was sunny and warm, not a single adult Glanville was to be seen, although there were larvae all around. This is a very exposed site, so larval development here must be somewhat slower. I next went to Bonchurch Down just outside of Ventnor. This chalk downland site is being managed most sympathetically by the National Trust using goats. Butterflies seen were Brown Argus *Aricia agestis*, Dingy Skipper *Erynnis tages*, Small Copper, Adonis Blue *Polyommatus bellargus*, Common Blue, Wall *Lasiommata megera* and Speckled Wood *Pararge aegeria*. My last evening on the island was spent "mothing" in Firestone Copse. The trap was turned on at 21.10 hrs. First arrivals were Small White Wave, Brimstone Moth *Opisthograptis luteolata*, Small Phoenix *Ecliptopera silaceata* and Red-green Carpet *Chloroclysta siterata*. The evening ended at 23.10hrs, with 23 species being recorded, including Square Spot *Paradarisa consonaria*, Dwarf Pug *E. tantillaria*, Scalloped Hook-tip *Falcaria lacertinaria*, Mottled Beauty *Alcis repandata* and two examples of The Mocha.

The next morning, just before leaving Shanklin for the ferry and home, took a short walk along the nearby cliff path where I saw Small Tortoiseshell *Aglais urticae*, Wall and Large White. Arrived at the ferry terminal to find that there was a two hour delay in boarding so decided to pass the time recording in nearby Firestone Copse and Combley Great Wood, where Green-veined White *P. napi*, Brimstone *Gonepteryx rhamni* and Orange Tip were noted. Thus ended a most successful five day visit in which 21 species of butterfly were seen, and a respectable 50 species of moth, most of the moths being new tetrad records. A full site/species list is available upon receipt of a SAE.

# Reduviidae the Assassin Bugs

*by Keith C. Lewis*

*Top Flat, 108 Park View Road, Welling, Kent DA16 1SJ.*

The Reduviidae or Assassin bugs are a large family of over 4000 species worldwide; all are predatory and possess a stout curved rostrum with which to pierce their insect or human prey so as to extract the insect's body fluids or human blood. There is usually a distinct neck between the head and pronotum, the head being more or less elongated. Ocelli when found are usually placed behind the eyes. The antennae are often elbowed after the first joint while the tarsi are three-jointed. The Elytra can be made up of three sections. The family of Reduviidae is one of the largest found in the Hemiptera and consists of many bizarre and colourful bugs, all of which are very predaceous and range in size from 10-25mm. Some front legs are specially adapted for seizing their prey and holding it, not unlike the Praying Mantis. During Charles Darwin's round the world voyage he visited the town of Mendosa in South America where he recorded the following. "25th March 1835 I experienced an attack of the Benchuca, a species of *Reduvius* found in the Pampas, it being about an inch long and black. The insect when found was quite thin before it inserted its rostrum in my skin, the bite being quite painless, but soon after the insect became round and bloated with my blood." He also found Benchuca in Chile and Peru and placing one of them on a table one day watched it suck blood from a man's finger for ten minutes. This man, it is said, kept the bug as a pet for several months allowing it to feed on his blood. Darwin may have been somewhat rash in allowing the bug to draw blood with a risk of possible infection although the people in the village doubtless informed him that the insect caused only an irritation similar to a bed bug. This would not have been the case if he had been attacked by *Conorhinus sanguisuga*, a species found in Arizona. If bitten by this insect he would have experienced great pain, inflammation and possible discharge of pus.

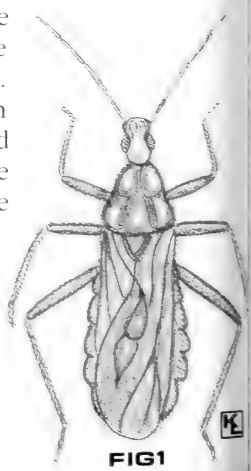

FIG1

## British and European species.

*Reduvius personatus* (Fig. 1). The common name being the Fly Bug, it is common in Europe but more local in the British Isles. The bug is usually found in

houses although I have found it in the open countryside deep inside old Cerambycidaegalleries. The adult's body has a flattened appearance and it has a length of about three-quarters of an inch. Its coloration is blackish-brown with the usual bug-like crossover wings. I have never seen this insect fly but is has fully developed wings. There is a pronounced neck between the pronotum and head which has two large and two simple eyes. Its vision must be good as the bug hunts small invertebrates including the bed bug usually at night. I have found a small number of *personatus* in my house, always on curtains in a head down position; these undoubtedly originated from an old Starling's nest located in my attic that contained beetle larvae. Once the nest was removed their appearance ceased. *Reduvius* is noted for its stealthy approach when attacking its potential prey by walking and waving its antennae in a series of jerky movements. The curved beak or rostrum is constructed in three parts and is about 3mm long being composed of four stiff lancets. Caution is advised when collecting this bug; it should not be picked up with the fingers as the bite is said to be more painful than that of a bee sting due to injected venom. Death is said to be almost instantaneous when injected into flies or other insects. Immature *personatus* can camouflage themselves with dust or any small pieces of detritus found in the vicinity. When dead this shroud of dust can be gently brushed off to reveal the true body shape.

*Coranus subapterus* or The Heath Assassin (Fig 2), can be found on sand dunes, heaths or in any suitable habitat throughout the British Isles usually on bare patches of ground. The wings of this insect barely reach halfway down the body although fully winged individuals may be found more usually in the north of England. Both species stridulate.

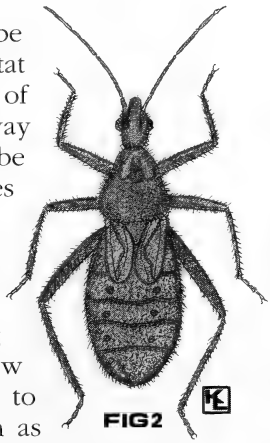

FIG2

**Foreign species**

Some foreign Assassin Bugs have very bright warning coloration: brilliant red, black, or black and yellow markings. And some species can also emit an odour to deter would be predators. *Melanolestes picipes* known as the Kissing Bug, a name derived from its habit of biting the human face usually around the mouthparts of man; *picipes* is a black insect about 12mm long. *Triatoma* is also known as the Kissing Bug or Mexican Bedbug. It is a large insect about 25mm long, black with six red spots on each side of abdomen.

*Triatoma sanguisuga* sometimes feeds on human blood and its bite can cause vomiting and faintness.

*Triatoma megista* and the related pest *Rhodnius prolixus* are bugs that are found in South America. Their bite can transmit Chagus' or Schizotrypanosomiasis disease, a condition due to an infection that attacks the brain tissue and muscles of the heart in man.

*Triatoma rubofasciata* is a South Asian insect that can be found amongst the debris and rubbish on the floors of primitive huts. This bug may transmit Kala-azae or black fever, a disease that is characterised by the enlargement of the liver and spleen in man.

**Reduviidae mimics**

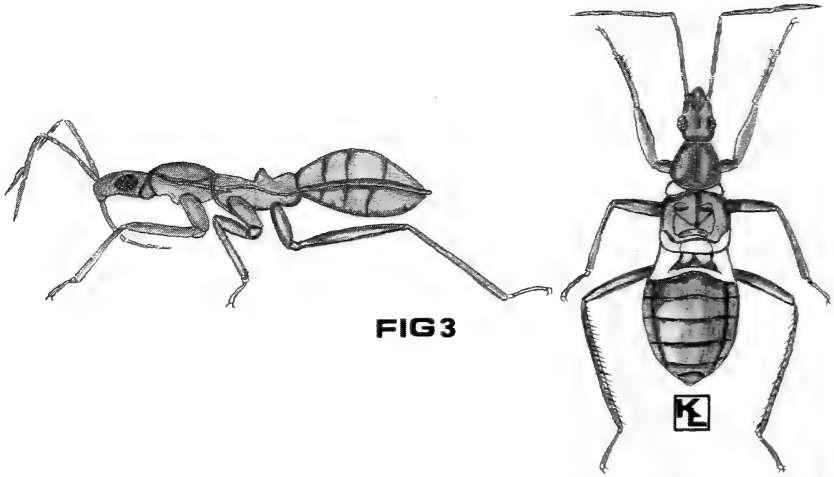

FIG3

One other small Reduviidae of interest is *Nabis lativentris* (Fig. 3); this insect is small and has the appearance of an ant. The bug only mimics the ant in its early instars, the adult being quite unlike the former stages. This ant-like appearance is due to the sides of the bug being somewhat pale in colour except for a dark raised mark between the middle body segments. This mark is like the pedicel of an ant and the abdomen is very ant-like in shape when viewed in profile (Fig. 3, left). The insect is said to be not uncommon and can be found running about on plants and flowers in the company of ants. I could find reference to it being an ant predator. But it no doubt gains a degree of protection in its early stages, as in size and appearance it is not unlike the Wood Ant *Formica rufa* that is said to be distasteful to birds due to the formic acid its body contains.

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# Minotaur beetles *Typhaeus typhoeus* in Colchester, Essex


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*http://maria.fremlin.de*


Inspired by Lisa Webb's article 'The Dung Beetles of Ayrshire, Scotland.' (AES, Vol **63**, No 456, pp 131-5) we decided to set up some traps to have a good look at that elusive nocturnal beetle *Typhaeus typhoeus*. Given that they feed on rabbit droppings Lisa's buckets were scaled down, and we used polystyrene drinking cups and 7.5 cm flower pots instead.

Four of these were sunk to ground level in a small area. The bait, rabbit droppings, was placed on a little plastic dish tied to a plastic garden trellis, 5 cm square, secured on top of the traps. However we soon found that we could easily trap the beetles if we cleared the rabbit droppings in the vicinity and simply placed them in the pots. This way the whole set up was simpler and much less eye catching. This was important because the area being monitored (approximately 8m x 12m in the Spinney, Hilly Fields, Colchester) is a popular public park.

This was done in late March 2005, when minotaur beetles were still active.

These beetles dig 1.5 metre deep tunnels, sometimes with a branch at the top, so that one can see two holes – approximately 1.6 cm – close

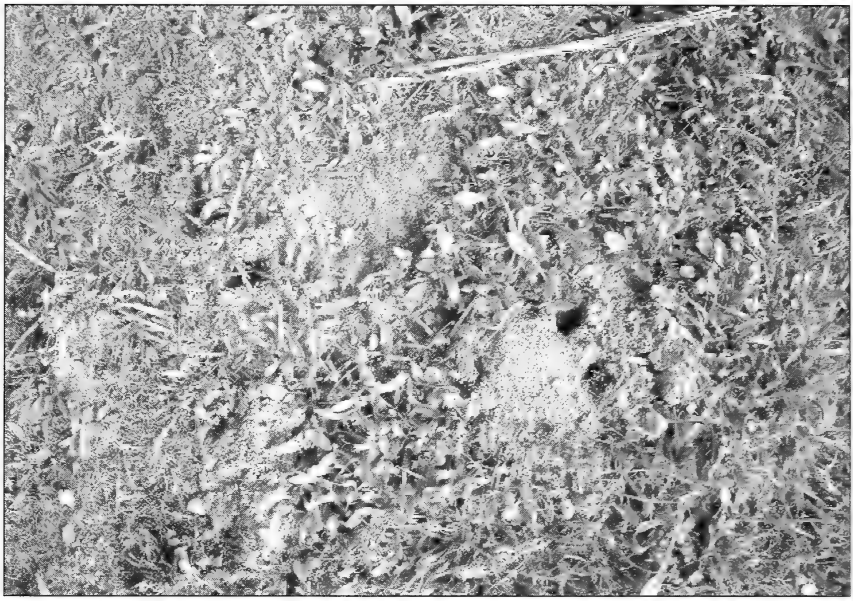

Photo 1. Minotaur beetle burrows.

together (see photo 1). They take the dung down to three or four side-tunnels, lay an egg in each and leave them; unlike some dung beetles their offspring get no parental care. The interesting thing about minotaur beetles is that they are active in the evenings and when it gets very hot or dry they aestivate, ie, they enter a period of no activity at all, and then become active again in the autumn. In mild winters they emerge in February which is when we first saw signs of activity in the area, and by the end of April they had quietened down.

They prefer grassy sunny places with good drainage and the area that we have studied had a nice sandy loamy soil. In it we found 12 fresh holes. In one trap we caught three females plus two males (see photo 2), and a female in another trap. All were released as soon as found. The trapping confirmed the existence of these beetles in that area. The males have some horns and are smaller than the females – 15 to 24 mm (see photos 3 and 4). I am not sure how long is their lifecycle, though. Do they lay eggs twice a year? I would also love to see the male rolling the rabbit pellets backwards with his hind legs. I understand that Minotaur beetles are the only "roller" species in the British Isles; the female does most of the digging though (http://www.earthlife.net/insects/dung.html – In Praise of Dung Beetles).

Photo 2. Trap contents.

Photo 3. Male and female *Typhaeus typhoeus*.

Photo 4. Male *Typhaeus typhoeus*.

By the way, did you know that the Egyptians imagined that their god, Khepri, a sacred dung beetle, rolled the sun across the sky from east to west each day (http://www.minotaur-websites.com/minomyth.htm – The myth of the Minotaur)?

On the topic of gods, Minotaur in Greek mythology, was a creature half man half bull confined in a labyrinth who was eventually slain by Theseus (http://members.aol.com/egyptold/osiris.html – The Gods Osiris and Khepri). As for their scientific name, *Typhaeus* is the Latin name of a giant who was struck with lightning by Jupiter, also a mythological figure.

Do get in touch, I would love to know the answers to my questions, please.

# The Harlequin ladybird arrives in Britain: A threat to our native species?

*by Remy L. Ware[1], Michael E.N. Majerus[1] (4027), Helen E. Roy[2] and Flo Symington[3]*

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## Introduction

The harlequin ladybird, *Harmonia axyridis* (Coleoptera: Coccinellidae) (Plate 1), is native to central and eastern Asia and has had a long history of use in biological control in other countries. It has been released repeatedly in North America since 1916 to control pest insects, including aphids and coccids (scale insects). Following establishment there in the 1980s (Chapin & Brou, 1991), the harlequin has spread rapidly across the United States and into Canada (Koch, 2003) and is now the predominant ladybird over much of North America. Various European countries have also recently become home to this ladybird as a result of intentional release, including France, Belgium, Germany, Luxembourg and the Netherlands (Iperti and Bertand, 2001; Adriaens *et al.*, 2003). On the 19th September 2004, Ian Wright, a member of staff in the Department of Genetics, University of Cambridge, spotted an unusual ladybird in a pub garden in Essex. This was the first identified sighting of the harlequin ladybird in Britain (Majerus *et al.* in press a).

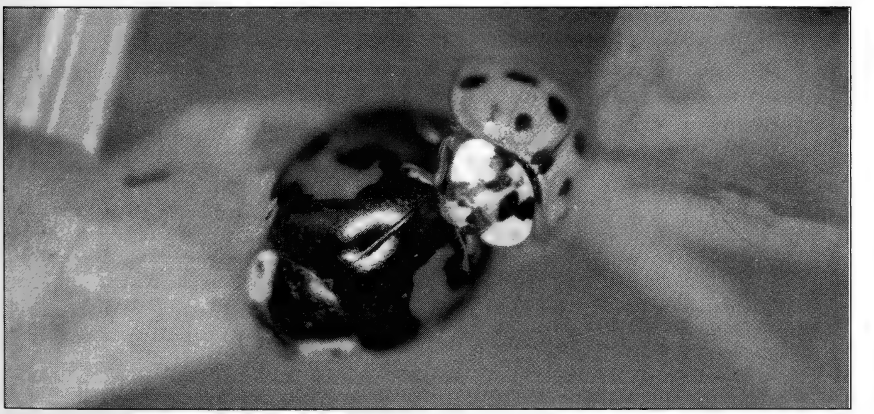


Plate 1. A mating pair of the harlequin ladybird, involving an f. *succinea* male and an f. *conspicua* female (Battersea, London).

Since the first record of the harlequin in Essex, many others have been reported from SE England (Hants, Sussex, Surrey, Kent, Essex, Suffolk, Norfolk, Cambs, Berks, Bucks, Beds, Oxon, and Greater London, including Middlesex), with solitary records from North Derby, Burnley, Devon and the Isle of Wight. It is unlikely that the establishment of this ladybird in Britain has been the result of an intentional release. Given the close proximity of SE England to the French, Belgian and Dutch coasts, some probably simply flew across the English Channel from Europe. Others are known to have been imported on flowers and vegetables from Europe, and in packing cases from Canada (Roy *et al.*, in press; Majerus & Roy, in press).

The first record of the harlequin in Britain received extensive media coverage. Newspaper headlines included phrases such as 'the killer ladybird' and 'the deadly invader'. But why the negative response if this species has a track record as a successful controller of aphids, one of the most damaging pests of crops? In fact, many of the favourable attributes of the halequin ladybird, in terms of biological control, are potentially very detrimental from an ecological perspective. In addition some behavioural characteristics of the harlequin have unfavourable consequences for humans (see Majerus *et al.*, in press b for anthropogenic impacts).

**The harlequin as a biological control agent**

The harlequin ladybird has successfully controlled aphids in a variety of crops, including sweet corn, pecan nuts, red pines, strawberries, apples, citrus fruits, alfalfa, soybeans, maize, cotton and tobacco (Koch, 2003; Roy *et al.*, in press). A number of features of this ladybird have contributed to its success in biological control. The harlequin is a generalist predator, preying on a wide range of insects such as aphids, psyllids, coccids and adelgids (Koch, 2003). This wide dietary range means that it has the potential not only to limit aphid numbers but also to aid in the control of other pest species e.g. adelgids in conifer plantations, and coccids (Roy *et al.*, in press). Unlike many other ladybirds, harlequin populations are highly responsive to fluctuations in aphid densities as adult females lack the need for a period of winter dormancy (overwintering) before laying their eggs. This reduces the time lag between early season aphid outbreaks and the response of the control agent. Indeed, eggs are usually laid just before or at the peak of aphid population density (Hironori & Katsuhiro, 1997).

The presence of the harlequin ladybird in Britain may therefore reduce chemical pesticide use in the control of aphids. This has

certainly been the case in parts of the US where it has come to dominate the coccinellid fauna (Brown & Miller, 1998; Lucas *et al.*, 2002). In agricultural systems using integrated pest management schemes, the harlequin seems an appropriate choice for biocontrol, due to its compatibility with many of the new target specific pesticides being used. However, the potential agricultural benefits of the harlequin ladybird in Britain may come at the expense of native biodiversity.

The generalist diet of the harlequin ladybird puts non-target species at risk from predation. Recent risk assessments of biological control identify high risk agents as those lacking host specificity and which subsist on a wide range of diets (van Lenteren *et al.*, 2003). Whilst preferring aphid and coccid prey, the harlequin will also accept psyllids, adelgids and the immature stages of many insects, including butterflies and other ladybirds. Indeed, a recent study has shown that eggs and larvae of the monarch butterfly, *Danaus plexippus*, make a tasty meal (Koch *et al.*, 2003). As the harlequin ladybird is an accidental introduction into Britain, and as such lacks specific target prey species, it seems likely that many non-pest insects will suffer from its arrival. This will have knock-on effects on the ecosystem of predators, parasitoids and parasites that surrounds these prey.

## The harlequin as a threat to British coccinellids

*As a competitor*

As well as impacting negatively on non-target prey insects, it seems likely that the harlequin ladybird will come to threaten native species that also feed on aphids. Resource competition with native species is a common occurrence when an invasive colonises a new habitat (e.g. the introduced grey squirrel from North America competes for food with the native European red squirrel). In the case of the harlequin, species at risk from resource competition include aphid-eating lacewings, hoverfly larvae and ladybirds.

Various life-history traits of the harlequin ladybird provide it with a competitive edge over many British ladybirds, with the result that it may come to dominate at the expense of our native species. This has already occurred in parts of North America. Within four years of its arrival in Michigan, the harlequin had taken over from *Coleomegilla maculata* as the dominant aphid predator (Colunga-Garcia & Gage, 1998), and in West Virginian apple orchards it rapidly replaced the 7-spot ladybird, *Coccinella 7-punctata*, as the most abundant ladybird in this habitat (Brown & Miller, 1998).

The harlequin is a particularly voracious aphid predator, killing and eating up to 65 aphids per day during adulthood. Larvae also eat aphids (Plate 2). The harlequin is also highly efficient at tracking aphid populations in space and time, due to its high reproductive capacity, generalist diet, wide habitat and climatic range and high dispersal ability (Osawa, 2000). Adult females can lay up to 4000 eggs and up to five generations can be completed in one year, although two is more commonly observed in most of Asia (Majerus *et al.*, in press b). Meanwhile, most British species, such as the 7-spot and the eyed ladybird, *Anatis ocellata*, only produce one generation a year, requiring a period of true diapause before becoming reproductively mature (Majerus and Kearns, 1989) (Figure 1). The harlequin does not have such a requirement (Figure 2). Furthermore, the length of the breeding season of the harlequin ladybird in Britain may exceed that of many native species: in 2004, larvae, pupae and newly emerged adults could still be found in October and November, when most British ladybirds had moved to their winter shelters. The potential for the harlequin to out-compete other ladybirds due to its higher voracity and reproductive output was demonstrated in citrus groves in Florida, where an increase in the harlequin was correlated to a decline in the native species *Cycloneda sanguinea* (Michaud, 2002b).

The invasive nature and adaptability of the harlequin ladybird is enhanced by its generalist diet. As well as the range of insect prey already mentioned, this species is also known to feed on pollen, nectar, honeydew, plant sap and the juice of ripe fruit (Roy *et al.*, in press). Such a wide choice of possible food sources allows the harlequin to survive at times when aphids are less abundant, adding to its competitive advantage over more specialised predators of aphids. The wide dietary

Plate 2. A fourth instar larva of the harlequin ladybird feeding on a pea aphid.

Figure 1. The life-cycle of the 7-spot ladybird in southern England.

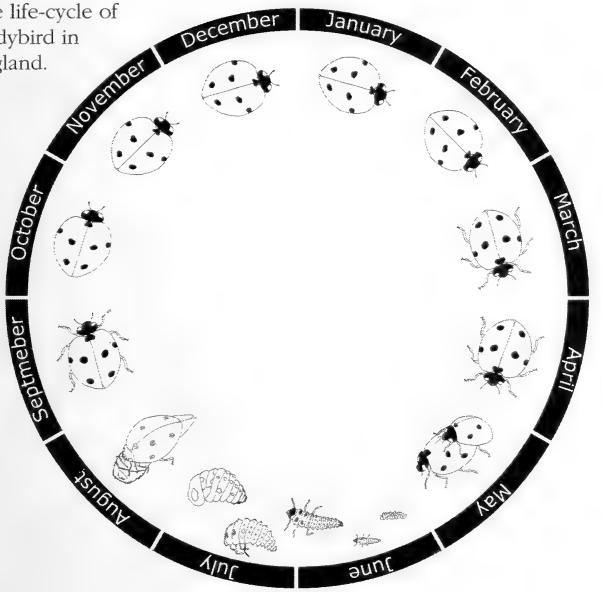
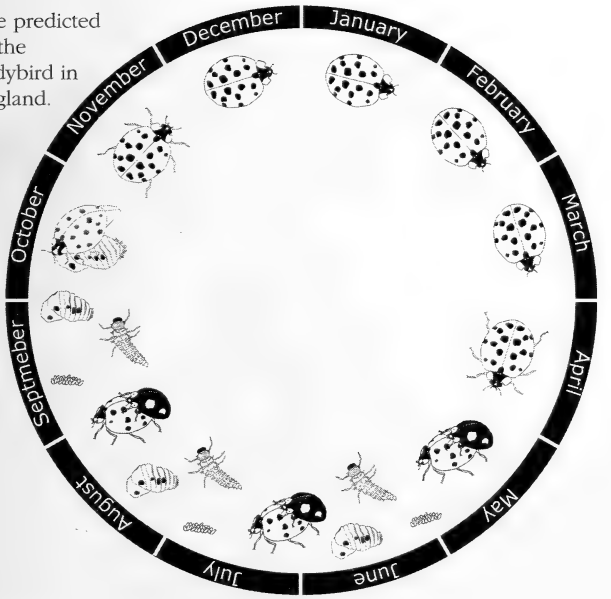



Figure 2. The predicted life-cycle of the harlequin ladybird in southern England.



range of the harlequin is matched by its wide habitat range. Harlequin ladybirds will colonise and reproduce in deciduous and coniferous woodlands, lowland meadows and reed-beds, as well as a wide array of crops (Roy *et al.*, in press). This habitat diversity will bring the harlequin into direct competition with some of the more specialist British ladybirds, such as the water ladybird, *Anisosticta 19-punctata*, in reed-beds and the striped ladybird, *Mysia oblongoguttata*, on Scots pine. The harlequin is also a highly dispersive species. During breeding periods it flies between host plants seeking high-density aphid populations, and in both Asia and America it indulges in long migratory flights to and from dormancy sites. The harlequin ladybird is thus capable of achieving a wide distribution within a relatively short space of time.

The harlequin ladybird also has a broad climatic tolerance. Its native distribution in Asia covers a wide latitudinal and longitudinal range where it faces winter temperatures far below freezing and summer temperatures of above 30°C (Roy *et al.*, in press). Since the British climate is well within these extremes it is unlikely that temperature will pose a barrier to widespread establishment, and sightings of the harlequin in England in Spring 2005 show that it can survive a British winter.

Dietary and habitat generalism demonstrate the potential for the harlequin to become the dominant coccinellid over a large region, since more specialised ladybirds will be unable to shift their range following the encroachment of this more voracious competitor. The rise to dominance of the harlequin ladybird over *C. maculata* in North America (Colunga-Garcia & Gage, 1998) is surprising considering this species also has a somewhat generalist diet. However, more work is needed to attribute the causes for the changes in abundance of *C. maculata*, and Hoogendoorn & Heimpel (2004) found no direct negative impacts on this species from interaction with harlequins. If further evidence does suggest that species with generalist diets and habitats such as *C. maculata* are at risk from the arrival of the harlequin, it seems likely that British species with an increased degree of specialism will be at even greater risk.

*As a predator*

The risk posed by the harlequin to British ladybirds does not end with competition for food, however, for harlequins may also become predators of native ladybirds (Plates 3 and 4). Once again, this is due to the wide dietary range of this species, which extends to members of its own family, the Coccinellidae. Predation within the aphidophagous ladybird fauna is an example of intra-guild predation, and here the

harlequin may be the top invertebrate predator within the guild. In Japan the harlequin arrives in alfalfa fields a short time after a number of other ladybirds, allowing it to feed on their prepupae and pupae (Takahashi, 1989). Lucas *et al.* (1998) suggested that the predatory dominance of the harlequin might be due to its more aggressive nature and the shape of its mouthparts. Majerus (1994) reports that in predatory interactions between coccinellid larvae it is generally the larger that eats the smaller, as long as both are mobile. Given that harlequin is one of the largest ladybirds in Britain many of the smaller British species will be at risk.

Plate 3. A harlequin ladybird larva eating eggs of the 7-spot ladybird.

Larvae and adults of the harlequin will prey on immature stages of three of the most common British ladybirds, 7-spots (Hironori & Katsuhiro, 1997), 2-spots, *Adalia 2-punctata* (Burgio *et al.*, 2002), and 14-spots, *Propylea 14-punctata* (Lynch *et al.*, 2001). However this is an asymmetric relationship, since immature stages of the harlequin are rarely eaten by other ladybirds (Cottrell & Yeargan, 1998; Hironori & Katsuhiro, 1997). This is in part attributable to the defensive chemistry of the harlequin, which renders it unpalatable to other species (Roy *et al.*, in press). In interactions between harlequin and 7-spot larvae, Yasuda *et al.* (2001) attributed the greater success of the former to its higher attack rates and greater escape ability.

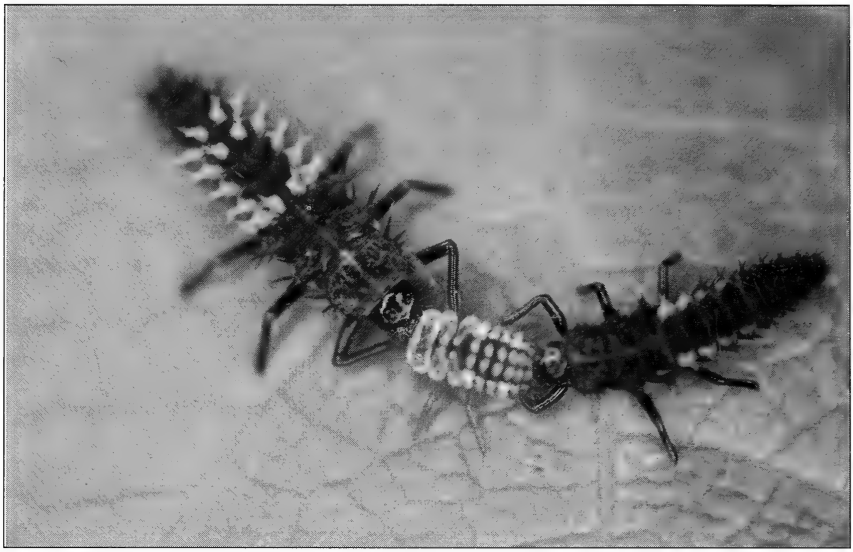


Plate 4. Two harlequin ladybird larvae eating a newly ecdysed 7-spot ladybird larva.

## So what can we do?

*The Harlequin Ladybird Survey & the UK Ladybird Survey*

Following the initial sighting of the harlequin ladybird in September 2004, the Harlequin Ladybird Survey (www.harlequin-survey.org) was launched to monitor the spread of this new invasive species across Britain. The survey allows on-line recording of sightings by members of the public, verified by the survey's experts. Since September, the harlequin has been shown to be well established in the SE of Britain but is largely limited to this region. This means we have the unique opportunity to follow the spread and impact of a new invasive species from a very early stage after its initial establishment.

In conjunction with the Harlequin Survey, the UK Ladybird Survey (www.ladybird-survey.org) has been initiated to monitor native coccinellids and allows assessment of the impact of the harlequin's arrival on their populations. The survey will record all UK ladybirds, but will particularly target ten carefully chosen species (Table 1).

Survey data and experimental studies will be used to investigate the competitive and predatory interactions discussed above between the harlequin and British ladybirds. The likelihood of displacement through resource competition will depend on the diets of these species and whether their geographic and habitat ranges overlaps with that of the

| Ladybird species | Diet | Preferred habitats | Host plant | Length | Risk from competition with harlequin ladybird | Risk from predation by harlequin ladybird |
|---|---|---|---|---|---|---|
| **Harlequin *Harmonia axyridis* Pallas** | **Generalist** | **Diverse** | **Diverse** | **5-8 mm** | | |
| 7-spot *Coccinella 7-punctata* L. | Aphids | Diverse | Diverse | 5-8 mm | Likely considering aphidophagous diet and overlapping habitat range | Despite fairly large size, predation by harlequins has been demonstrated (Hironori & Katsuhiro, 1997) (Plates 3 and 4) |
| 2-spot *Adalia 2-punctata* (L.) | Aphids | Diverse | Diverse | 4-5 mm | Likely considering aphidophagous diet and coincident habitat range | Likely due to smaller size. Habitat diversity may mean encounters are likely. Existing evidence (Burgio *et al.*, 2002) |
| 14-spot *Propylea 14-punctata* (L.) | Aphids | Diverse | Diverse | 3.5-4.5 mm | Likely considering aphidophagous diet and coincident habitat range | Likely due to smaller size and diverse habitat. Existing evidence (Lynch *et al.*, 2001) |
| 10-spot *Adalia 10-punctata* (L.) | Aphids | Hedgerows, woodland | Various trees | 3.5-4.5 mm | Likely considering aphidophagous diet and overlapping habitat range | Likely due to smaller size and fairly diverse habitat |
| Eyed *Anatis ocellata* (L.) | Aphids | Needled conifer woodland, | Needled conifers, esp. mature Scots pines | 7-8.5 mm | Will occur if harlequins invade Scots pine woodland | Unlikely due to large(r) size. Habitat specificity may make encounters less likely anyway |
| Water *Anisosticta 19-punctata* (L.) | Aphids | Reed beds, marshlands | Reeds and rushes | 4 mm | Will occur if harlequins invade *Typha* and *Phragmites* reed-beds | Likely due to smaller size, but only if encountered in this habitat |
| 5-spot *Coccinella 5-punctata* L. | Aphids | Unstable river shingle | Various | 4-5 mm | Likely if harlequins invade unstable river shingles. Could be disastrous for this rare species | Likely due to smaller size, but only if encountered in this habitat |
| Kidney-spot *Chilocorus renipustulatus* (Scriba) | Coccids | Deciduous woodlands | Various deciduous trees, particularly sallows | 4-5 mm | Likely competition for coccids on deciduous trees | Likely due to smaller size, if encountered in this habitat |
| Orange *Halyzia 16-guttata* (L.) | Mildews | Deciduous woodland | Deciduous trees, esp. sycamore and ash | 4.5-6 mm | Unlikely due to specific diet not utilized by the harlequin | Likely due to smaller size, if encountered in this habitat |
| 22-spot *Thea 22-punctata* (L.) | Mildews | Grassland, meadowland | Various, esp. hogweed | 3-4 mm | Unlikely due to specific diet not utilized by the harlequin | Likely due to smaller size, if encountered in this habitat |

**Table 1**: An assessment of the relative risks that may be experienced by 10 British ladybirds due to the harlequin ladybird. Risks estimated according to diet specificity, habitat specificity and size. The relative palatabilities of the species have not been considered in the assessment of predation risk. *Diet, habitat and size information from the UK Ladybird Survey website (www.ladybird-survey.org) and Majerus & Kearns (1989).*

harlequin ladybird. In order to assess the threat of these species from intra-guild predation, research is needed into the relative palatabilities of their various life stages. For intra-guild predation to be a significant risk, there must be a high chance of encounters between larvae upon host plants, so again habitat range is important in this assessment.

*Species most at risk*

The reported impacts of the harlequin on North American ladybird fauna, and details of the diet, including prey density requirements,

habitat specificity and size range of British ladybirds, allow us to make inferences about which species might be most at risk from this recent invasion. Table 1 gives an estimate of the relative risks experienced by the 10 targeted British species following the encroachment of the harlequin. Species that may be expected to be most at risk from competition seem to be the 7-spot, the 2-spot, 14-spot, and the 10-spot, *Adalia 10-punctata*, since these species are all primarily aphid feeders and occupy diverse habitat ranges upon which the harlequin is likely to encroach. Other, more habitat-specific ladybirds, such as the eyed, water, and 5-spot ladybird, *Coccinella 5-punctata*, are only likely to be affected if the harlequin comes to occupy their specific habitats or host plants. The orange ladybird, *Halyzia 16-guttata*, and the 22-spot ladybird, *Thea 22-punctata*, both feed on mildews and so are unlikely to be involved in competition for food with the harlequin. Competition for coccids between the harlequin and the kidney-spot ladybird, *Chilocorus renipustulatus*, may occur where they coinhabit deciduous woodland.

Assuming all species are equally palatable to the harlequin ladybird (relative palatabilities have not yet been assessed for most species), we may expect those ladybirds with the smallest body size and coincident host plant range to be most likely to succumb to intra-guild predation. These include the 2-spot, the 14-spot and the 10-spot. North American evidence supports this suggestion (Burgio *et al.*, 2002; Lynch *et al.*, 2001). Previous studies also suggest that we should expect the 7-spot to be at risk despite its large size (Hironori & Katsuhiro, 1997). The water, 5-spot, kidney-spot, orange and 22-spot ladybirds are also of relatively small body size but their more specific host plant or habitat requirements may make predatory interactions less likely than for the aforementioned species. The eyed ladybird is perhaps least likely to become prey to the harlequin, due to its large size and specific host plant requirements.

Considering the combined relative risks from competition and predation, it seems that the most theoretically vulnerable British species are:

1. 2-spot ladybird, *Adalia 2-punctata*
2. 14-spot ladybird, *Propylea 14-punctata*
3. 10-spot ladybird, *Adalia 10-punctata*
4. 7-spot ladybird, *Coccinella 7-punctata*

Simultaneous monitoring of these populations and that of the harlequin is therefore very important in determining whether the negative impacts discussed here are realised.

## Conclusion

The arrival of the harlequin ladybird is not to be welcomed, but as it is now here and has established, it is sensible to make the most of the opportunities that its arrival provides. Members of the Amateur Entomologists' Society, with their enthusiasm for, and knowledge of insects, are ideally placed to help collect data on the spread of the harlequin and changes in the distributions and abundances of our native ladybirds. This data is urgently needed, for little work has been done on the impacts of invasive animal species. Consequently, there is a real chance that if comprehensive data can be collected on the ladybirds in Britain over the next five years, the interpretation of this data will provide lessons on the benefits and risks of introducing biocontrol agents and of alien species generally.

## Acknowledgements

The authors acknowledge funding and help from Defra through the National Biodiversity Network Trust, the Joint Nature Conservation Committee, the National Environment Research Council, the Biological Records Centre, Cambridge University, Anglia Polytechnic University and the Natural History Museum. We are grateful to Francis Rowland (CEH) for designing the survey web-sites and to Peter Brown (Harlequin Survey Project Officer) for discussions and providing UK records.

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# On metamorphosis

*by Leo Lester*

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I was recently asked how it was that complete metamorphosis could ever have evolved. The origin of complete metamorphosis (holometabolism) has indeed struck many as an enigma, but it need not be. In fact, the story of how holometabolism evolved is not something divorced from the rest of insects, but rather the final chapter in the evolution of their development.

The thing to remember about insects is that their growth is saltational. That is, instead of growing continuously (like snails), they grow in stages, or instars. This is because their rigid exoskeleton constrains growth, so they have to shed it periodically and in doing so, enlarge in bounds. In hexapods (the precursors to insects) and the most primitive wingless (apterygote) insects, growth continues in this manner indefinitely. The young emerge from the egg looking like miniature adult and moulting continues periodically until death. In this sense, they are said to exhibit ametaboly: they don't show any of the sophisticated growth cycles, or metamorphosis, of the later insects.

Winged insects (the pterygotes) can be divided into two: those showing incomplete metamorphosis (hemimetabolism) and the more recently evolved ones showing complete metamorphosis (holometabolism). These insects show determinate growth: moulting occurs only in the juvenile form and there is a steady progression (still in stages) towards a final unchanging adult. In the more primitive hemimetabolous insects (such as locusts, termites and cockroaches) the juveniles do not have wings or reproductive organs but still look very similar to the adult. Like almost all animals, they need to grow up, but until they do so, they inhabit a slightly different microhabitat, spend their time feeding and only later develop the tools needed for adulthood (as we do in puberty). Because juvenile hemimetabolous insects look different from adults (and most importantly lack wings) they are called nymphs, to differentiate them from the adult or imago.

If locusts grow from egg to nymph to adult, then holometabolous insects, such as beetles and butterflies, would appear to have an extra stage, for they develop from egg to larvae to pupa to adult. In fact, the nymph stage of a locust can be split into two: the nymph, but also the earlier pronymph. This latter stage exists for only a very short period, and in modern insects is rarely seen outside the egg. But it is from this

pronymphal stage that larvae evolved. It is thought that a pronymph that could feed outside the egg, burrowing away from harm's way and towards food would have been a considerable advantage. As the advantages of this habit were felt, so the pronymphal stage was enlarged and the nymphal stage contracted, until the current larva/pupa time share was achieved. Complete metamorphosis was achieved through changing hormonal control to turn the pronymph stage into a prolonged feeding stage, and the nymph into nothing more than a rapid, reconstruction stage. In both hemi- and holometabolous insects, the adult organs are present in the juvenile, albeit in the form of undeveloped imaginal disks. The pupa is simply a speeded up version of the nymph as far as the development of these disks is concerned.

The question one should be asking, then, is not how a butterfly evolved from a caterpillar but how a caterpillar evolved from a butterfly. It is not the larva that came first, but the adult and it is the route to adulthood that has grown ever more ingenious. This is a fairly recent realisation. Even in the mid-1990s, scientists were arguing for a primitive larva that slowly developed into an adult ever more weird and wonderful until suddenly metamorphic rewiring was needed. With such explanations it is not surprising that metamorphosis has often been considered the black box of evolution.

But it is not a black box. In the beginning, ancestral species had juveniles looking no different from the adult, but, through time, their young became more specialised to their own needs, only developing adult organs (genitals and wings) at the last moment. And they did this by leaving the egg in a more juvenile form, and refusing to grow up until they really had to. Holometabolism is just an example of accelerated change, but the same change can be observed in hemimetabolous insects. This idea of larvae evolving from the pronymph is not especially new, in one form or another it has been around since 1913, but it is a theory with great explanatory power, with little reliance on ad hoc hypotheses or on the *de novo* evolution of new life cycle stages.

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# Hilltopping

*by Graham T. Foggitt and Anna L. Powell (9511)*

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On the 2nd October 2004 in the Algarve, Portugal, ALP and I visited the summit of Picota. This is the second highest peak in the Sierra de Monchique, and the effects of fire were clear to see with many dead pines, eucalyptus and strawberry trees although regeneration was occurring in the latter two species.

The summit itself consists of bare rocks with a 'trig' point; a look-out tower and two stunted oak 'bushes' which had escaped the ravages of fire. It was a very hot, cloudless afternoon when we arrived at approximately 3.00pm; almost immediately we were aware of much bewildering butterfly activity with two or three spiralling up high into the sky before settling again either on the rocks or the dwarf oaks for a short period before the action started all over again.

The three main contenders seemed to be Painted Lady, American Painted Lady and a Red Admiral; the second group consisted of two Swallowtails and three Scarce Swallowtails behaving in a similar manner. From time to time a Wall would join either party and a Long-tailed Blue was in attendance but was not seen joining in the fun.

We watched this behaviour for about an hour before departing. On the lower ground we found two Small Coppers, a Brown Argus, a Speckled Wood, a Tree-grayling and a Geranium Bronze. Small Whites were common.

So fascinating did we find this behaviour that we made a return visit on the 5th October in the late afternoon. The Swallowtails had disappeared but the three Vanessids were still behaving in the same way. The American Painted Lady was still in excellent condition but the other two were beginning to look worse for wear. Photography was extremely difficult due to the activity of the butterflies and after about an hour we left but the behaviour was still continuing, although the temperature was falling.

On the 12th October I made a final mid-afternoon visit alone. The sky was still clear but with a cool north-easterly breeze. Two buzzards soared above the trees and eleven Griffon Vultures flew in singles south-westwards towards Cape St. Vincent.

This time, around the summit and stunted oaks there were two new players – two Two-tailed Pashas, fairly worn but very active especially around each other and the two Swallowtails and two Scarce

Swallowtails which had all put in a repeat performance with all three species spiralling high together.

The American Painted Lady was in excellent condition still, and could be picked out at some distance because of its smaller size compared with the Red Admiral and it's European cousin. The latter two were in a dreadful state – one hindwing almost completely missing on the Painted Lady.

## Further observations and behaviour of the Chamomile Shark in the UK

*by Jan Koryszko (6089)*

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I was most interested in Frank McCann's 'Update on Chamomile Sharks *Cucullia chamomillae* in the Glasgow Area (McCann, 2004). Frank noted partly eaten flower heads and the caterpillar resting on the underside of a chamomile flower. The caterpillar was curled round in a semi-circle below the petals. Frank wondered if this would be to protect the caterpillar against rain, which was frequent in July. This may be possible, but I feel there may be other reasons for this behaviour.

The caterpillars may do this to protect themselves against predators, such as parasitic wasps or flies, or even larger hunters. Until half-grown, the caterpillars live exposed. They are then found lying in a half circle on the crowns of unexpanded flower heads. There is a reference to this behaviour by the late Rev. Miles Moss at Rossall, near Fleetwood, Lancashire in the Moths of the British Isles (South, 1972).

Also of interest, I have found the caterpillars feeding during the day and also at night, many years ago in southern England. This species is scarce here in Staffordshire, recorded in scattered locations.

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# Records of *Arhopalus rusticus* Linnaeus 1758 in Norfolk and Suffolk Part 3

*by Keith C. Lewis (3680)*

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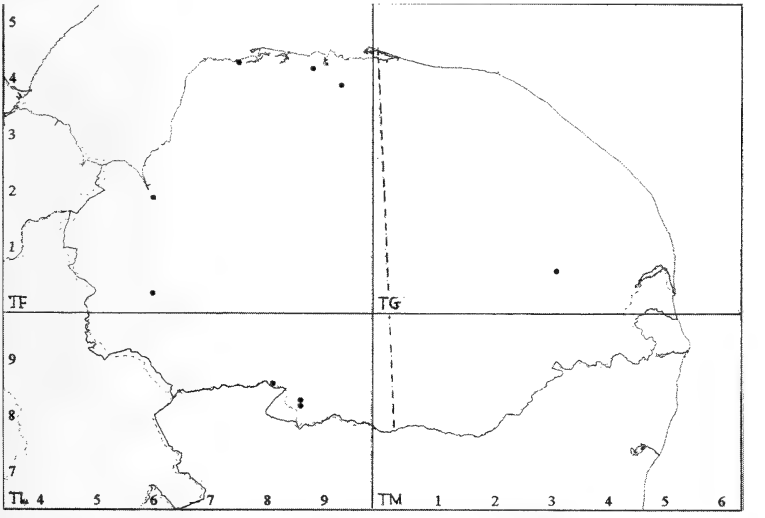
Please note that a convention is used for the following records. Whenever only a year was recorded, it is written as 00.00 year. For example, the year 1980 is written as 00.00.1980.

## Norfolk

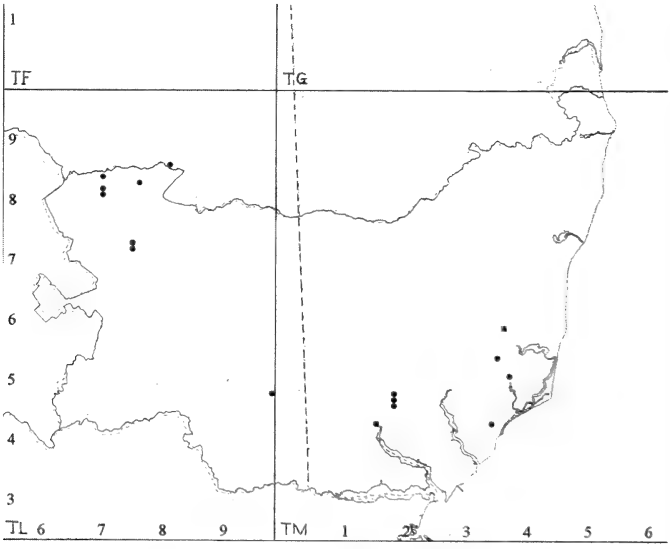
| Date | Location | Site | Habitat | Recorder |
|---|---|---|---|---|
| 12. 09. 1960 | Thetford | TL8783 | Not recorded | Twinn P. F. G. Dr. |
| 16. 08. 1971 | Kings Lynn near | TF6120 | Not recorded | Twinn P. F. G. Dr. |
| 00. 00. 1980 | Serlingham | TG3207 | Not recorded | Collier M. |
| 20. 07. 1982 | Titchwell | TF7645 | Pine stumps on dunes | Drane T. |
| 00. 00. 1985 | Warham Camp | TF9440 | Not recorded | Harding P. T. |
| 13. 10. 1985 | Warham | TF9441 | Not recorded | Twinn P. F. G. Dr. |
| 00. 09. 1987 | Thetford | TL8784 | Not recorded | Twinn P. F. G. Dr. |
| 04. 07. 1989 | Downham Market | TF6103 | Not recorded | Twinn P. F. G. Dr. |
| 28. 07. 1990 | Boughton | TF7002 | Not recorded | Twinn P. F. G. Dr. |
| 16. 08. 1995 | Wells-Next-The-Sea | TF8943 | In pine log | Bowdrey J. |




**Arhopalus rusticus in Norfolk.**

## Suffolk Larvae*

| No date | Tunstall Forestry Comm | TM3655 | Not recorded | Twinn P. F. G. Dr. |
|---|---|---|---|---|
| 02. 08. 1969 | Friday Street | TM3760 | Not recorded | Twinn P. F. G. Dr. |
| 31. 07. 1971 | Chillesford | TM3852 | Under pine bark | Twinn P. F. G. Dr. |
| 26. 03. 1972 | Hollesley | TM3544 | Not recorded | Twinn P. F. G. Dr. |
| 09. 06. 1973 | Tuddenham near | TM1949 | Not recorded | Weal R. D. |
| 27. 05. 1974 | Tuddenham near | TM1948 | Not recorded | Twinn P. F. G. Dr. |
| 23. 06. 1974 | Tuddenham near | TM1947 | Larvae* | Bowdray J. |
| 00. 00. 1978 | Bildeston | TL9949 | Not recorded | Twinn P. F. G. Dr. |
| 26. 08. 1978 | Weather Heath | No grid ref | Scots pine log | Mendel H. |
| 22. 09. 1978 | Ipswich | TM1644 | Not recorded | Twinn P. F. G. Dr. |
| 00. 00. 1981 | Lakenheath | TL7182 | Not recorded | Twinn P. F. G. Dr. |
| 08. 08. 1981 | Lakenheath | TL7183 | Bred from pine log* | Allen A. A. |
| 00. 00. 1985 | Lakenheath | No grid ref | 17 specimens | Kaufmann R. R. Dr. |
| 00. 06. 1985 | Lakenheath | TL7185 | Not recorded | Twinn P. F. G. Dr. |
| 26. 07. 1987 | Santon Downham near | TL8287 | Not recorded | Collier M. |
| 12. 07. 1989 | Icklingham Plains | TL7673 | M. V. light | Foster A. P. |
| 11. 08. 1989 | Tunstall | TM3655 | Wind snapped pine | Winter T. |
| 12. 07. 1990 | near Icklingham | TL7674 | Not recorded | Twinn P. F. G. Dr. |
| 24. 06. 1995 | Brandon Park | TL7784 | Under pine bark | Hunt R. J. |




**Arhopalus rusticus in Suffolk.**

**Acknowledgements**

I wish to thank the many coleopterists and Museums for sending me their records c1997-1998.

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## Butterfly Morning

Woke up to one of those mornings
With the sun, flowing like honey,
Almost sweeping you out of bed,
Through the various functional rooms
To breakfast in the garden
And buddleias already clustered
With Peacocks, Commas and Speckled Woods.

Then a sweet siren voice
Tells you to leave the washing up,
Keep the post for another time
And take a ride on a bus,
One of those long distance buses
That actually welcomes you aboard,
With air conditioning and reclining seats.

So let's go for it now.
I know a cheap little cafe,
Hugging the beach,
There we can look out
For Painted Ladies, Clouded Yellows,
Drifting in on a sky
As blue as Adonis wings.....

And then the phone rings.

*Richard Stewart, 112 Westerfield Road, Ipswich, Suffolk. 1P4 2XW.*

## Northern Exhibition

One of the ideas that arose during the negotiations on affiliation between the AES and the RES was for the setting up of a joint Northern Exhibition along the lines of the AES one at Kempton Park in London. It has taken a while to get a group of volunteers together as a committee to do it. This has been achieved and a provisional date and venue have been arranged. At present, it is hoped to hold it on Saturday 8th April at York Racecourse. The venue will be inspected for suitability in late October. A number of traders from the Kempton event have expressed interest. It is hoped to recruit traders from northern areas who have been unable to get to the Kempton show, primarily because of distance. The AES is very experienced in running this type of event, so traders can have faith that it will be done very professionally.

Any members who know of traders who would be interested in attending are asked to let the AES Registrar know via the PO Box address inside the front cover. Members are asked to check with any trader for their interest before advising the Registrar of their details. Suitable types of trader include:-

1. Specialist book dealers, both new and second-hand.
2. Specialist book and pamphlet producers.
3. Dealers in invertebrate specimens – both living and dead (Note – no vertebrates may be traded).
4. Dealers in entomological equipment, such as collecting materials, microscopes etc.
5. Entomological and natural history crafts, such as greetings cards etc.
6. Clubs, Societies, Wildlife Trusts etc who might be interested in recruitment and in trading.
7. Entomological holidays.

The lifeblood of the northern exhibition will be members' exhibits, so members are asked to prepare exhibits. The exhibits booking form will be circulated in the February 2006 *Bulletin*. The more exhibits, the better.

There will be a members' wants and exchanges table, and members are asked to let the Registrar know if they would be interested in using it. As at Kempton, the table is willing to accept items donated by members for sale for the Society's funds, plus items sold on behalf of members will incur a levy of at least 10% of the selling price.

Also, we would like to hear from any member interested in assisting on the day – it is hard work, but interesting and good fun. **The event is dependent absolutely on having enough volunteers to run it on the day**. No prior experience of such events will be necessary as information and training will be given on the day. It is important to let the Registrar know of your interest as soon as possible. **If we cannot steward it, then it cannot go ahead.**

Finally, this is the first one in the north, so far, and whilst at first the cost will be underwritten by the AES and the RES, it must be self-financing by the third year. Its success depends upon participation. The Kempton show is the biggest one of its kind in Europe and still growing – can the northern show rival it? – of course it can, but only if you, the members, make it the success it deserves to be.

**Nick Holford**
AES Registrar

## The Geranium Bronze in Iberia

*by David Keen (3309)*

*Calle Casto Bancalero 11, 41650 El Saucejo, Sevilla, Spain.*

I was interested to read Don Dunkin's article in the April 2005 issue of the *Bulletin*.

Three summer holidays were spent in the Algarve Region of Southern Portugal – June/July 1994, May 1995 and May 1996. Although geraniums were flowering in the gardens of the villas we stayed in, I never once encountered the butterfly, *Cacyreus marshalli*.

My first encounter with this species, in fact took place here in Spain on 20 September 1997. I was enjoying a drink and a tapa in a bar half way up the Penon Mountain, south west of the village of Algamitas, Seville Province of Andalucia. Pots of flowering geraniums were hung outside the bar and a small brown butterfly with an unusual pattern to the underside was seen to be flitting from one flower to the next. I had never seen anything like it before.

During subsequent holidays in Spain from 1998 until we moved here at the end of 2004, this butterfly was frequently encountered. The small white eggs were often found on the unopened flower buds of

geraniums. My first record for it in my own garden here was on 14 May 2005, since when it was been seen several times.

From Manuel Diaz (1998), I gather that this species has spread rapidly since being introduced and is now recorded throughout the Province of Andalucia, being a real pest of the geranium growers. It's local Spanish name, ìtaladro del geranioî, translates as Geranium Drill – on account of the larva eating its way through the flower buds.

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Dunkin, D (2005). The Geranium Bronze in North Portugal, *Bulletin of the Amateur Entomologists' Society* **64**(459): 58.

## The spread of the Netted Pug in Staffordshire

*by Jan Koryszko (6089)*

*3 Dudley Place, Meir, Stoke-on-Trent, Staffordshire, ST3 7AY.*

The Netted Pug *Eupithecia venosata venosata* Fabricius has always been a scarce species in Staffordshire. In the Victoria County History it was recorded from Ashley, Rugeley and Shobnall. It was later recorded from Leek (John and William Hill, and L. Watson) and Forton (Rev E. S. Lewis). In 1980 it was recorded again at Ashley (Ivan Jones), as well as from Saltwells LNR (Dave Friday) and the Gorge LNR on 24th June 1995 (Ian Lycett).

In June 2003 R. H. Heath took one at light in Meir. On 4th June 2004, I took one again at light in my garden in Meir. These latest records from north Staffordshire are encouraging. Most records have come from south Staffordshire. The larval foodplant is Bladder Campion *Silene vulgaris,* with larvae feeding on seed capsules. It is a very uncommon plant in Staffordshire. This may be the reason for this moth being so scarce. However, I think that other species of *Silene* are possibly used as foodplants.

It will be interesting to see if this species spreads.

# Arnside Knott revisited

*by Dr Peter G. Sutton (7388)*

*AES Habitat Conservation Officer, 2 Fir Tree Close, Flitwick, Beds. MK45 1NZ.*

*and David Browne (11909)*

*4 Skelmersdale Walk, Bewbush, Crawley, West Sussex RH11 6EP.*

In *Bulletin* **455**, Arnside Knott in Cumbria was the subject of an ongoing series of articles describing Classic Entomological Sites (Sutton 2004). Two years ago, during two visits to the site, a few specimens of the Scotch Argus *Erebia aethiops* had been observed but were not captured on film. This article describes a subsequent visit to Arnside Knott on the 11th of August this year to search for the Scotch Argus at one of its two remaining colonies on English soil.

We arrived at Arnside Knott (Grid Ref: SD 453 774) in late morning to overcast skies that had produced occasional light showers. The weather was very humid and what looked to be a somewhat unpromising situation for the observation of butterflies became increasingly favourable as intermittent sunny spells became more frequent.

A walk from the National Trust car park through the woods took us to the Heathwaite section, which, after climbing up a wooded ridge, opened out onto a hillside meadow overlooking Morecambe Bay.

Among the meadow flowers were many of the same species that had been encountered two years ago: a profusion of Common Blues *Polyommatus icarus*; Silver Y Moths *Autographa gamma*; Meadow Browns *Maniola jurtina* (many of which were well-worn and extremely pale); and 6-spot Burnet moths *Zygaena filipendulae*.

Among the brambles could be heard the chirping of Dark Bush-crickets *Pholidoptera griseoaptera*, and also Common Green *Omocestus viridulus* and Field *Chorthippus brunneus* grasshoppers, which were stridulating among the grasses.

A Clouded Yellow *Colias croceus* (Figure 1) was seen flying above the meadow grasses and feeding at the abundance of flowers, which were also tended by many of bumble-bees. A small number of Peacock *Inachis io*, and Wall *Lasiommata megera* butterflies were also seen, together with a solitary Painted Lady *Cynthia cardui*.

**Figure 1.**
Clouded Yellow *Colias croceus*.
(Photograph: Dave Browne)

**Figure 2.** A late season High Brown Fritillary *Argynnis adippe*

In view of the less than perfect weather conditions and the lateness of the season, we were surprised to see that the large Fritillaries, Dark Green *Argynnis aglaja* and High Brown *Argynnis adippe*, were still present and active. One High Brown Fritillary was very obliging and sat for a while on a flower head, revealing some uncharacteristically dark spotting on its underside (Figure 2).

We walked around the side of the hill along a wooded path where we found Hedge Brown *Pyronia tithonus* butterflies and a small Red Wood Ant *Formica rufa* nest (Figure 3). The nest was observed closely (Figure 4) for any evidence of the "uninvited" Guest Ant *Formicoxinus nitidulus* (see the excellent article by Neil Robinson in the August *Bulletin* page 126) but since they typically become evident on the surface of these nests in September and October, it was probably too early for them to be seen. In contrast to some of the huge mounds seen in southern counties, the Red Wood Ant nests observed at Arnside Knott were all very small, typically between 30 and 50 cm in diameter.

**Figure 3.**
A Red Wood Ant *Formica rufa* nest.

The path led us to a hillside with exposed areas of limestone and a south-western view across the heather and the Kent Estuary to the vast expanse of sands in Morecambe Bay (Figure 5). Two years ago many Graylings *Hipparchia semele* made use of these natural "hotspots", but none were seen on this occasion, undoubtedly because the showers and overcast weather had subdued the activity of these thermophiles. (In contrast, the day before had been particularly hot and many Graylings had been observed on the sand dunes at Ainsdale on the Sefton Coast, together with the rare and spectacular Northern Dune Tiger Beetle *Cicindela hybrida*.)

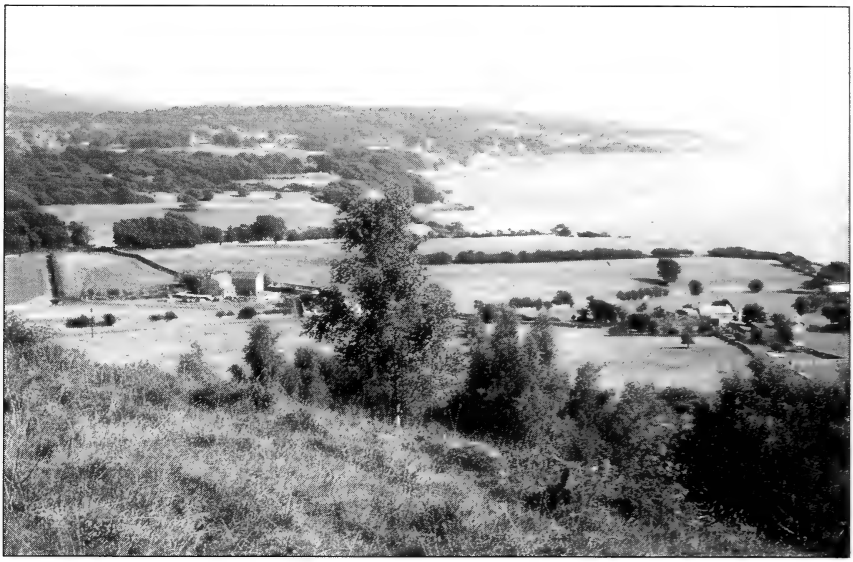

**Figure 5.** View from Arnside Knott.

There was no sign of the Scotch Argus and we continued up over the hill to another meadow, where Common Darter *Sympetrum striolatum* dragonflies were trying to glean what small vestige of warmth had been absorbed by the paths. A Large White *Pieris brassicae* butterfly took to the wing as we searched for our intended quarry and a fine specimen of the Black Darter *Sympetrum danae* dragonfly was also encountered (Figure 6).

**Figure 6.** The Black Darter *Sympetrum danae* (Photograph: Dave Browne)

The large and attractive hoverfly, *Sericomyia silentis*, was observed adorning a frond of bracken (Figure 7) and another hoverfly, *Rhingia campestris* was observed at rest, again on bracken (Figure 8). Both of the British members of the highly distinctive genus, *Rhingia*, have unmistakably large 'snouts', and the presence of a black stripe along the axis of its abdomen immediately distinguished the observed specimen from its close (and scarce) relative, the so-called Heineken fly*, *Rhingia rostrata* (Stubbs and Falk, 1983). This latter species is superbly depicted in the AES Conservation Slide Pack showing the invertebrate fauna of Coastal Habitats and Urban/Brownfield Sites.

**Figure 7.** The attractive hoverfly, *Sericomyia silentis*.

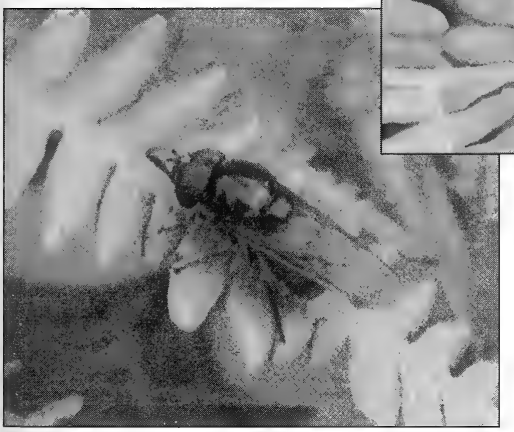

**Figure 8.** The hoverfly, *Rhingia campestris*.

The sun began to shine as we entered another meadow at the back of the Heathwaite section of Arnside Knott, and almost immediately two more High Brown Fritillaries took to the wing. These specimens proved to be far more difficult to photograph, but eventually we managed to get a good view of the upperside (Figure 9), together with a silhouette of the underside (Figure 10).

** So-called, apparently, because it has a snout that can reach the parts that other flies can't.

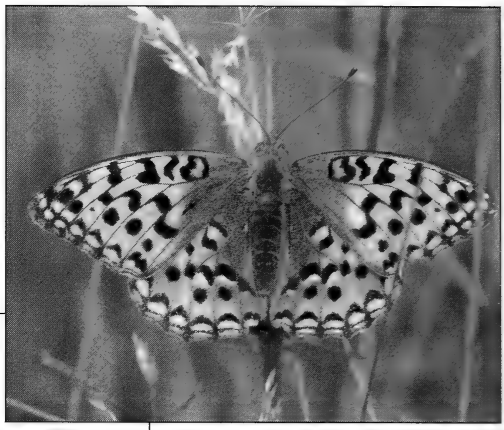

**Figure 9.** High Brown Fritillary upperside. (Photograph: Dave Browne)

**Figure 10.** High Brown Fritillary silhouette.

We had all but given up hope of seeing the elusive Scotch Argus and began making our way back to the car along the back of the reserve. At the edge of the wood a pair of Speckled Wood *Pararge aegeria* butterflies was observed as we left the Heathwaite section. We walked up a path which had a faintly aromatic assemblage of bright green Juniper bushes to the left of us, and suddenly saw a dark butterfly appear among the grasses and disappear into the scrub. As we followed it, and as the sun broke through the cloud once more, we realised that we had stumbled into an area where a highly localised population of 20-30 or so Scotch Argus butterflies were variously sunbathing or harrying each other in rivalry and courtship display. Another Red Wood Ant nest was inadvertently found as we captured the butterflies on film (Figures 11 and 12) and the tenacious ants arched their bodies, clinging on with claw and mandible as they valiantly protected their nest against giant adversary, using caustic spray from their individual reservoirs of formic acid.

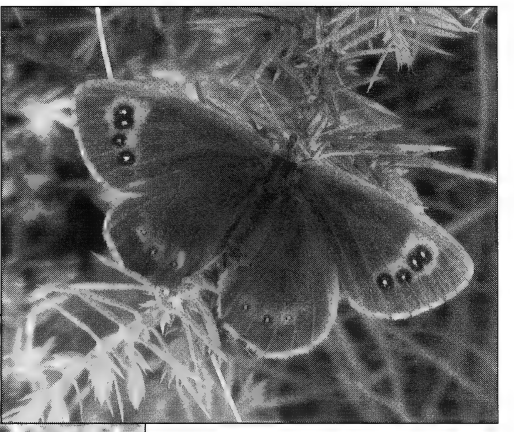

**Figure 11.** Scotch Argus *Erebia aethiops* on Juniper.

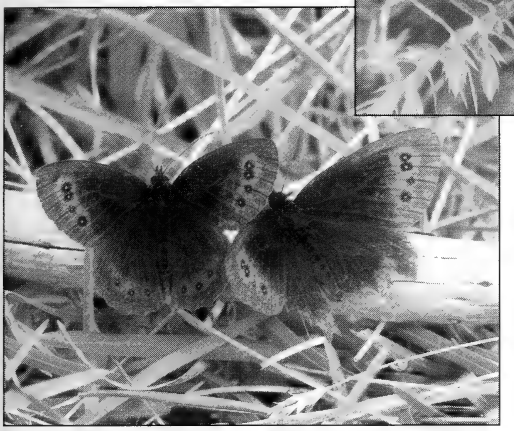

**Figure 12.** A pair of Scotch Argus butterflies.
(Photograph: Dave Browne)

It may be that climate change will eventually decrease the suitability of the habitat at Arnside Knott for the Scotch Argus. We have to accept that the well-being of species such as the White Admiral *Limenitis camilla* and Roesel's Bush-cricket *Metrioptera roeselii* that have been the subject of welcome range expansions, will be at the expense of our northern specialists such as the Scotch Argus and the White-faced Dragonfly *Leucorrhinia dubia.* However, for the time being at least, Arnside Knott remains a superb place to visit and see the Scotch Argus and some of our rarer species of butterfly.

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# Book Reviews

## *Larval foodplants of the butterflies of Great Britain & Ireland*

by Peter R. May. Published by Amateur Entomologists' Society 2003, 62 pp. UK price £5.75. ISBN 0-900054-69-7. Available from AES Publications, 1 Tower Hill, Brentwood, Essex CM14 4TA. Tel: 01277 224610, e-mail: AESPublications@btconnect.com

This slim booklet contains a wealth of information useful to anyone trying to rear indigenous butterflies. The main part consists of a list of the established British butterflies – and foreign introductions – in taxonomic order (75 species in total), with details of the larval food plants recorded in literature. The records have been taken from 17 books on British butterflies published since 1934, and half a dozen articles from *The Bulletin of the Amateur Entomologists' Society* over the past 30 years.

Information included segregates plants preferred in the wild from those accepted in captivity and additional or alternative food plants used by the larvae in mainland Europe. The reliance on earlier literature may mean that, in some cases, inaccuracies from the past have been reproduced here, but the clear distinction between wild and captive stocks will allow readers to make informed decisions related to their aims.

The distribution and abundance of species is covered. Notes of legislation banning the collection of named species are included. Indexes are provided to the English and Latin names for all species – both entomological [according to Emmet & Heath, 1990] – and botanical.

There are also details of suppliers of livestock and wild plants, and ideas for further reading.

At the back of the booklet is a reprint of 'How to encourage butterflies to live in your garden' by the late Peter C. Cribb. This is divided into paragraphs on the major larval feeders of different plant groups: Nettles, Grasses and Crucifers. It also includes a section on nectar sources useful for encouraging the imagines into the garden.

Aimed at people interested in breeding native species of butterfly, this is a concise, easy to follow and inexpensive publication – an ideal starting point for new enthusiasts or a useful aide-memoir for long-standing butterfly breeders.

Jacqueline Ruffle

## *A Field Guide to the Butterflies of Israel*

***(including butterflies of Mount Hermon, Sinai and Jordan)***

Dubi Benyamini, 5th Revised Edition 2002. 248pp., 168 colour plates and 26 B&W figs. 63 larvae of the commonly found species are illustrated in colour. Distribution maps are provided for all species. Hardbound, 215mm x 125mm. ISBN 965 07 020 X. Keter Publishing House Ltd., Jerusalem. Price: approx £31.00 including postage (please check with the distributor before ordering). Available from the European distributor: Apollo Books, Kirkeby Sand 19, DK 5771 Stenstrup, Denmark. Phone: ++45 62263737, Fax: ++45 62263780. E-mail: apollobooks@vip.cybercity.dk Website: www.apollobooks.com

The author is a very highly regarded lepidopterist, who has published extensively on the butterflies of the Middle East region and farther afield, over many years. Indeed, this book contains much information not published elsewhere and reflects the author's experience of more than 50 years spent studying his native fauna. This book was first published in 1990 and is now in its fifth edition, updated to include Jordan. This edition also adds photographs of a further 42 larvae of the more common butterflies, as well as listing additional species such as *Pseudophilotes jordanicus* (Benyamini, 2000) and subspecies *Muschampia proteides stepporum* (Benyamini & Avni, 2001).

The book is presented in a very convenient field guide format, with pages colour coded according to family. Unfortunately the book is not available in an English-language version but, despite being published in Hebrew (scientific names, of course, are also given) the book is an essential requirement for any lepidopterist visiting Israel. Illustrations of male and female, upperside and underside, of all 146 species of butterfly known to have been found in the south-eastern Mediterranean are included. Set butterflies have been used for the plates and in order to obtain the most pristine specimens, 567 of the best were carefully selected from 16 collections – a reflection of the author's dedication to his subject. With the exception of the largest species (which are depicted slightly reduced) all specimens are presented life-size.

As an aside, it is of interest to note that, although far short of the 342 species of butterfly listed for Turkey (Hesselbarth et al. 1995, *Die Tagfalter der Türkei*), butterfly numbers in Israel and the surrounding areas are similar to those found in neighbouring Lebanon (Larsen, 1974, lists 139 species in his book: *Butterflies of Lebanon*, but has since added one or two more to the Lebanon list). Yet, all far exceed those found in the eastern Mediterranean island of Cyprus which, despite being just 70km south of the Turkish coast can only offer 52 recorded species – a clear example of the 'island-effect' (Makris, 2003, *Butterflies of Cyprus*).

In general, two species are shown per page opening – illustrations on the left, text on the right. Distribution is indicated by means of a solid map colour, with a lighter tone indicating periodic range extension or migration. Beneath each map appears a simple calendar showing flight periods. As a pointer to the main behavioural characteristics, many species have a graphic depicting whether the butterfly is associated with, for example, hill-topping, communal roosting or migration.

It is unfortunate that there are no plans for an English translation, but while the Hebrew text will be a hindrance to most (if not all) AES members, the combination of good photographs of set specimens, along with other valuable data as discussed above, helps to offset this disadvantage. Besides, as far as this reviewer is aware, there is no comparable alternative guide available. Indeed, a check of the 49 members of the Lycaenidae family listed in this book shows that as many as 21 are not represented in Tolman & Lewington (1997, *Butterflies of Britain & Europe*), providing ample justification for leaving European butterfly guides on the bookshelf when venturing to the countries bordering the eastern Mediterranean.

Dubi Benyamini's dedication to his subject has provided an invaluable and unique guide to the butterflies of Israel and surrounding areas and is unreservedly recommended to anyone planning to visit this fascinating area.

Eddie John (7937)

## *Schmetterlinge Die Tagfalter Deutschlands*

Settele, J., Steiner, R., Reinhardt, R. & Feldmann, R. 2005. 720 colour photographs (natural and set specimens) and descriptions of all species of butterfly found throughout the whole of Germany (except the higher alpine elevations). 256 pages. Distribution maps and phenology charts. Laminated softcover. 190mm x 130mm. ISBN 3-8001-4167-1. Price within the EU (except Germany, Austria & Switzerland): Euros 14.90 plus Euros 10.00 p&p. Published by Ulmer, Stuttgart. Available from http://shop.ulmer.de (enquiries to: info@ulmer.de).

All four authors are trained biologists, with the principal author, PD Dr. Josef Settele, a Research Scientist working in the Department of Community Ecology at the UFZ Centre for Environmental Research, Leipzig-Halle.

*Schmetterlinge Die Tagfalter Deutschlands*, as the title indicates, is in German throughout, but please do not be put off by this even if, like me, your knowledge of the language is poor. Why, then, should I write a review? Simply because this superbly produced, attractively designed book, makes it an admirable choice for use in the field. Following a short introductory section of fewer than 20 pages (briefly covering subjects such as butterfly characteristics, biotopes, life-cycle, observation etc.) there appears the first of the families – the Hesperiidae. Remaining families follow immediately, so the essential elements required for field observation sequentially occupy 206 of a total of 256 pages, thereby emphasising the book's practical value.

Two species are featured per page opening, with pages divided horizontally: text on the left hand page, photographs on the right. Accompanying each of the photographs are distribution maps, with phenology charts for the two described species separating the illustrations. A horizontal, centrally placed coloured bar (colour coded according to family) provides both the page number and a ready guide to the various families' sections.

Plate references are given on the main species' pages to direct readers to the relevant set specimens which are grouped together to form the next section. Upper

and undersides of certain members of the more 'difficult' families such as the Skippers and Blues are illustrated, with specific distinguishing characteristics helpfully arrowed. It is good to see this approach being taken by more authors.

Colour is used extensively, with all species illustrated as live and set specimens. The quality of photographs, mainly by Roland Steiner, but with additional contributions from names perhaps more familiar to Bulletin readers, is exemplary. In general there is a single photograph of the butterfly with an inset, smaller photograph of the same species depicted in the form of an egg, caterpillar or occasionally presented as a supplementary adult shot. For many of the species there are detailed photographs of the egg, indicating much time spent in field observation. Those who still struggle to tell apart the Small and Essex Skippers will delight in the dramatic close-up head shots of these species, which clearly show the antennal colour differences. Rather than illustrate adults of both of the Wood Whites, *Leptidea sinapis* and *Leptidea reali*, the dissected genitalia are shown in place of a photograph of *L. reali* – demonstrating a thoughtful approach in the preparation of this book, with much attention given to such detail.

Towards the end of the book is a useful list of the butterflies of Germany, together with their associated larval foodplants. These are listed alphabetically by German vernacular name, *for the hostplant*, so for those readers unfamiliar with these names it is difficult (though not impossible) to locate the appropriate scientific name for either hostplant or butterfly. As an example, various members of the *Rumex* (Sorrel, Dock) family are separated by eight pages, necessitating a search in the absence of an intimate knowledge of a plant's German common name. A listing by butterfly *scientific name* would have been more universally acceptable. For location of butterfly species, navigation of the book is straightforward; of course the presentation of the vernacular names only in the German language will be a slight hindrance for some UK readers, but an index of scientific names is also present. However, these are very minor criticisms, and the book is, after all, mainly aimed at the German market.

While there are other well known field guides covering the wider European species, including those listed here, they cannot provide the amount of detail offered by a dedicated guide, so I would urge anyone contemplating a visit to Germany to buy this truly excellent book.

Eddie John (7937)

# AES Publications

Amateur Entomologists' Society

**PRACTICAL HINTS FOR THE FIELD LEPIDOPTERIST**
***by J.W.Tutt***
Written at the turn of the century, this book has been reprinted because it still represents the most comprehensive field guide covering both macro and micro lepidoptera. ..... **£ 22.80**

**AN INDEX TO THE MODERN NAMES FOR USE WITH J W TUTTS PRACTICAL HINTS FOR THE FIELD LEPIDOPTERIST *by B.O.C. Gardiner***
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The Bulletin
of the Amateur Entomologists' Society

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# The Bulletin

## of the Amateur Entomologists' Society

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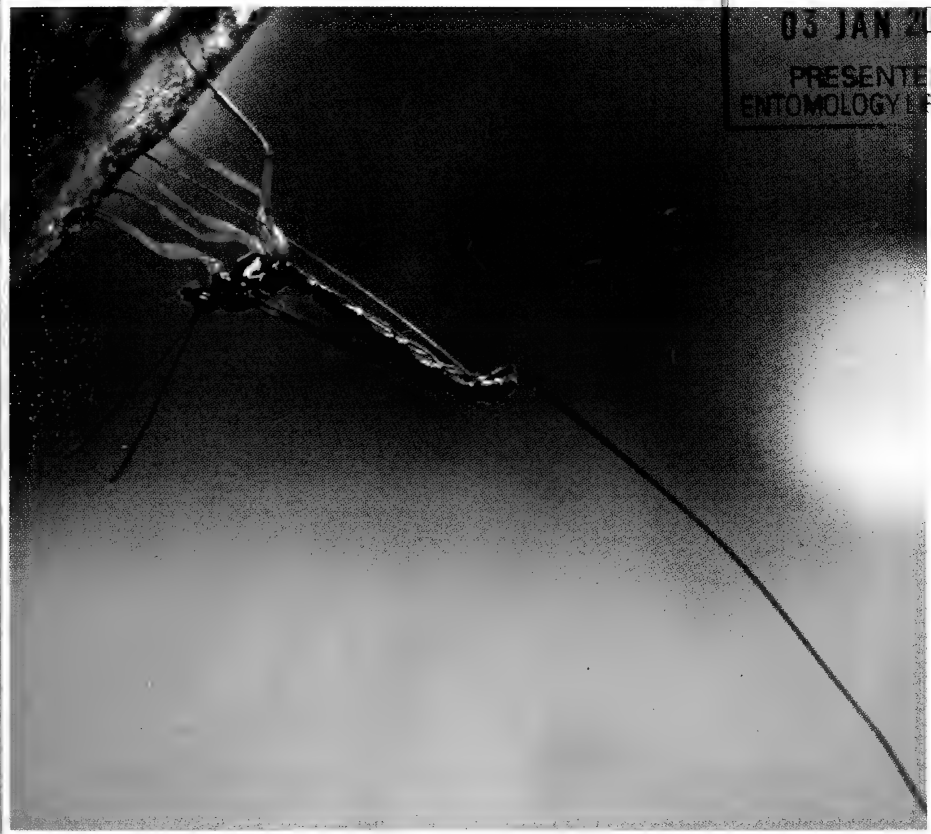

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The Amateur Entomologists' Society

Founded in 1935

**The AES • P.O. Box 8774 • London • SW7 5ZG**

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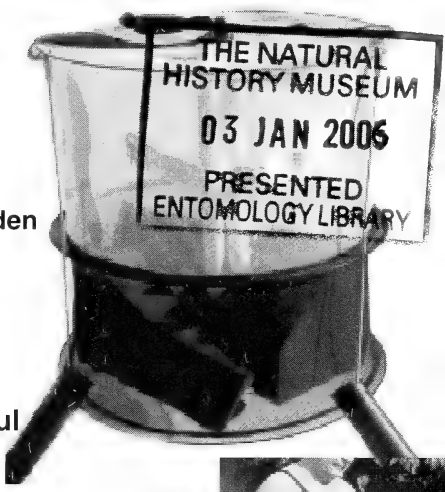


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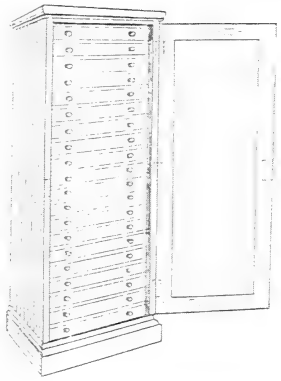

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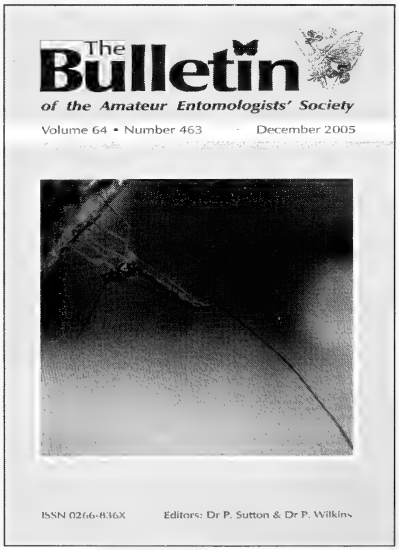
# The AES BUG CLUB

**Do you want to cuddle a Cockroach, stroke a Stick Insect or hug a Harvestman?**

The AES Bug Club is for young people or the "young at heart" who find insects and other creepy crawlies interesting and even fascinating.

As the junior section of the AES we are devoted to promoting invertebrates to the younger generation who, afterall, will be the entomologists of tomorrow! You can help us in a number of ways, for example: by joining the Bug Club yourself, getting someone else to join the Bug Club, promoting the Bug Club and AES to your local school/Scout or Guide Group etc, running a Bug Club event or writing an article for our exciting newsletter. If you can do anything to help then please write to us: **AES Bug Club, PO Box 8774, London, SW7 5ZG**. Membership details can be found in the front of this Bulletin.




## Bulletin Cover

The cover picture on this edition of the *Bulletin* shows a female specimen of the large ichneumon wasp, *Ephialtes manifestator,* drilling into the wood of a dead hawthorn tree in Bushy Park. This species lays its eggs in the larvae of wood nesting aculeates that occupy the vacated bore-holes of the saproxylic beetles.

Cover photograph: Peter Sutton

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## Northern Exhibition – Update

Further to my note in the previous *Bulletin* I wish to advise members that following the on site meeting between AES and RES officers and the York Racecourse events manager, the show is now definitely booked. It will take place on Saturday 8th April at York Racecourse, 10.30am to 4.30pm. Admission charges will be the same as at Kempton – Adults £3.00, Children £1.00. So far about 50 traders from the Kempton event have expressed interest. It is hoped to recruit traders from northern areas who have been unable to get to the Kempton show, primarily because of distance. For this we need the help of members. We need to be advised of suitable traders to approach. We ask members who know of traders who would be interested in attending to let the AES Registrar know via the PO Box address inside the front cover, or by email. Suitable types of traders include:-

1. Specialist book dealers, both new and second-hand.
2. Specialist book and pamphlet producers.
3. Dealers in invertebrate specimens – both living and dead (Note – no vertebrates may be traded).
4. Dealers in entomological equipment, such as collecting materials, microscopes etc.
5. Entomological and natural history crafts, such as greetings cards etc.
6. Clubs, Societies, Wildlife Trusts etc who might be interested in recruitment and in trading.
7. Entomological holidays.

Members are asked to check with any trader for their interest before advising the Registrar of their details so that the approach is not totally cold. We have designed a suitable handbill that can be given to traders so that they can assess the suitability of the event for their business.

The lifeblood of the northern exhibition will be members' exhibits, so members are asked to prepare exhibits. The exhibits booking form will be circulated in the February 2006 *Bulletin*. The more exhibits, the better. There will be a new set of valuable prizes for exhibits – different

ones for children and for adults. We are hoping to have microscope displays etc on minibeasts and the like, particularly for children.

There will be a members' Wants and Exchanges Table, and members are asked to let the Registrar know if they would be interested in using it. As at Kempton, the table is willing to accept items donated by members for sale for the Society's funds, plus items sold on behalf of members will incur a minimum donation to funds of 10% of the selling price.

Also, we would like to hear from any member interested in assisting on the day – it is hard work, but interesting and good fun. A reply card is enclosed for anyone interested to complete and return.

Please remember, this is the first show in the north and whilst at first the cost will be underwritten by the AES and the RES, it must be self-financing by the third year. If it is poorly supported, then the likelihood of future events in the north will be seriously compromised. Its success depends upon participation. The Kempton show is the biggest one of its kind in Europe – can the northern show equal it – of course it can, but only the participation of members will make it the success it deserves to be.

Nick Holford
AES Registrar

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**Thanks, Peter May**

# Memories of the mid-1950s

*by Malcolm Simpson (4859)*

In the mid 1950s saving ten shillings from my W.H. Smith's eight shillings a week newspaper round took about six weeks. Looking back now it was quite obvious that I used to spend too much on sweets! However, with ten bob in my pocket I was able to experience an idyllic Saturday every once in a while.

Pinner, where I then lived in North West London was some eighteen miles from The Strand in Central London. Such a journey on a bicycle today would provide a fair amount of thrills and spills but in the mid-1950s there was comparatively little traffic and this, coupled with my excitement and anticipation, meant that the journey took a little over one hour's hard pedalling. The reason for all the excitement was that 36 The Strand was then the 'home' of Watkins and Doncaster, Naturalists, Entomologists and Booksellers. This was the Mecca for every young, and not so young entomologist in the South of England. The choice of cabinets and storeboxes, books and collecting equipment of every description was, to a fifteen year old, quite overwhelming. Whatever one's area of interest it could seemingly be satisfied, whether in lepidoptera, coleoptera or any other optera, the specimen collections for sale were immense. Minerals, fossils and shells were all readily available at what seems now to be very modest sums. Microscopes, taxidermy, botanical equipment and dissecting instruments were also in stock. I always cycled back home with my rucksack loaded with goodies, and all for ten shillings!

The Strand shop, 1955

With thanks to Robin Ford, proprietor of Watkins & Doncaster for allowing the reproduction of this photograph.

I approached London from the north, straight down Edgware Road to Marble Arch, from there

down Park Lane and Constitution Hill, past Buckingham Palace, up The Mall and straight over Trafalgar Square into The Strand. As I passed the entrance to Charing Cross station on my right I could see the large enamelled sign of a Swallowtail that told me I had reached my destination. I well remember how on seeing that sign my anticipation always heightened considerably.Leaving my cycle unlocked all day Saturday in The Strand was no problem as there was no fear of it being stolen, some contrast with present times! On arrival at Watkins and Doncaster I can recall spending a few minutes looking at the display of exotic butterflies, dust jackets of available books and other interesting items, housed in a wooden, glass-topped display case hanging on the wall at the entrance to the staircase that led to number 36. Not wishing to waste too much time outside W & D's I very soon climbed the steeply winding wooden stairs, past a photographer's on the ground floor and a barber shop on the first floor, to the second floor where W & D's occupied an 'L' shaped room into which one emerged from the stairway and a large front showroom that looked down upon The Strand.

My specific interest was then and still is now, in the butterflies, although at that time I was more attracted towards the larger showy species from far off magical sounding places like Brazil, Madagascar, Borneo, Formosa and Sierra Leone. Superb examples of Ornithopera from British New Guinea could be had for about one guinea (£1.05) and Morphos for ten bob (50p), but with only ten bob to spend I was more interested in quantity rather than quality. I once 'pushed the boat out' and splashed seven shillings and sixpence on the beautiful day flying moth, *Urania ripheus*, from Madagascar. I went home that day feeling much like Lord Rothschild must have felt when adding a rare new species to his collection. I still recall the sense of extreme disappointment some years later on seeing the same species being sold off at the AES exhibition at prices which made my seven and sixpence look like a king's ransom.

There was, I remember, emitting from the cabinets a smell of camphor that filled the place. A smell that lingered on my clothing, hands and any items that I took home. It was the sort of smell that can be very occasionally savoured in the insect department of old museums. In the 1970s I visited Janson's, the Entomologists in Great Russell Street opposite the British Museum, and there was that wonderful smell again, it brought back fond memories of my many visits to W & D's, I loved that smell!

At W & D's two gentlemen were always in attendance and I got to know them both quite well,or perhaps they got to know me. Looking

back now, I must have been a nuisance rummaging around the place for a whole day, with the exception of one hour when W & D's closed for lunch, and with only ten shillings to spend. In the event they never showed any sign of impatience with me, not that I detected! One gentleman, the older of the two, was Captain Greenop and the younger by a long way, was someone who alas is no longer with us, Laurie Christie. When W & D's vacated The Strand premises at the end of June 1956, due to road widening, and moved to Welling in Kent, Captain Greenop and Laurie Christie left W & D's and formed a partnership supplying entomological equipment until the death of Captain Greenop. Laurie Christie then successfully carried on the business until his death in May 2001, a period of some 45 years.

In the large front room of W & D's the walls were completely lined with specimen filled cabinets. I was, however, to be found mostly delving into a large, deep trunk situated under one of the windows. This trunk was known as the 'bargain box'. Storeboxes, setting boards and a multitude of other collecting paraphernalia in various stages of disrepair could be had for a few coppers. My first set of curved forceps, at that time selling new for eight shillings and sixpence, came out of the deep recesses of the 'bargain box' and cost me the princely sum of sixpence. I cycled home that evening knowing I had without any doubt secured the bargain of the day. Somehow I seemed compelled to buy the oldest and most defunct pieces of equipment, items that I never used and I am convinced it was in these early years that my interest in old collecting apparatus was born. Sadly I disposed of my collection and collecting equipment on returning from my honeymoon in 1963, but over the past 25 years my renewed acquisitiveness for entomological memorabilia has resulted in some historically important 'finds'. Interestingly enough, included in my collection today are several W & D's catalogues going back some 60 to 70 years and the prices make very fascinating reading.

As I mentioned earlier W & D's was a Mecca for naturalists of all ages and I met several kindly collectors who were always most helpful and generous to youngsters like myself. Unfortunately, I think all those I met have now passed on but, for me, they still live on in my memory. One in particular was Lieutenant Colonel F.C. Fraser who lived in Bournemouth. He promised to send me cocoons of the Ruby Tiger moth, which duly arrived a few days later and this was the start of a fairly lengthy friendship involving my visiting him at his home in Bournemouth on several occasions. Mrs Fraser, a dear old white haired lady, used to serve at tea-time the thinnest cucumber sandwiches imaginable.

Just the ticket for a very hungry fifteen year old! Lieutenant Colonel Fraser had spent many years of army service in India during which time he amassed a superb collection of cicadas and dragonflies. He told me that several of the cicadas in his collection could only be taken in flight by the careful use of his shotgun. Indeed their wings had the holes to prove it! His collections were most comprehensive and he was, I learned some time later, an eminent authority on *Odonata*, having had several papers published. It was typical of those times that the elderly were always willing to help those newly setting out on the road of entomology and no doubt they would be just as helpful today if only the young ones would let them be so. On his death in 1963 Lieutenant Colonel Fraser's collections went to the British Museum (Natural History) and his library went to Manchester Museum.

Watkins & Doncaster are still trading today from premises at Four Throws near Hawkhurst in Kent. They have an excellent shop-cum-showroom and produce a most colourful and comprehensive catalogue. My visits to their Kent premises have never quite recaptured the magic of 36 The Strand but no doubt the intervening 50 years have dented my youthful sense of anticipation. However, maybe today, fifteen year olds are experiencing the same pleasure and excitement on their visits to W & D's in Kent that I did on mine to 36 The Strand in the mid 50s. I sincerely hope they do, and possibly in 50 years from now they will be able to look back, as I have, and recall their visits with a real sense of nostalgia and enjoyment.

## WANTED

The AES is in the process of redesigning its Web site (http://www.amentsoc.org) and would very much like members of the society to help in this task. We are looking for members to write articles for the site on a variety of entomological topics? from bee keeping to information on individual orders. No Web skills are required as contributed text need only be in plain text format or in the Word processor format of your choice.

For further details and a list of the content needed for the site please email: webmaster@amentsoc.org

(Kieren Pitts, AES Youth Secretary and Webmaster)

# Letter from Spain – second of a series – The early days

*by David Keen (3309)*

*Calle Casto Bancalero 11, 41650 El Saucejo, Sevilla, Spain.*

My wife and I left my daughter's house in Brackley, Northamptonshire after breakfast on 4 December 2004 and headed for Luton Airport. It was a cold clear and sunny morning but by the time we took off it had turned cloudy. When we arrived in Malaga we were greeted with heavy rain – anyone who has experienced Spanish rain will know what I mean!

Our friends collected us in their car and we were driven to their villa, which is in the countryside outside the village of La Mezquitilla in the Province of Sevilla. The journey, which would normally take 90 minutes, took well over two hours due to flooded road, torrential rain and low cloud – not very pleasant at all.

We had arranged to stay with our friends until our own villa in the neighbouring village of El Saucejo had been completed. On the morning of 5 December we were given a proper welcome by the Spanish weather – beautiful blue skies and hardly a cloud to be seen. In fact, we hardly saw another cloud and, apart from a short shower on 16 December, had no rain at all until the late afternoon of 4 February! Mind you, we did have a lot of frosty starts and even snow on 4 March during the coldest spell in our part of Spain for 80 years – the locals blamed us for bringing it with us!

Our furniture, etc arrived from England, all in one piece, on 15 December and our villa was finally completed on 15 February when we moved in. During the ten odd weeks we spent with our friends, the following observations were made: 5 December – two *Ocypus olens* beetles rescued from our friends' swimming pool.

7 December – a Red Admiral, *Vanessa atalanta,* flew past when we were having a snack at a pavement cafe in the nearby town of Osuna. Yes, an outside meal on 7 December!

8 December – Green-striped Whites, *Euchloe belemia,* seen in our friends' garden.

18 December – took a walk over the local hills and found a Mantis, *Mantis religiosa,* and a nymph of the Grasshopper, *Acrida ungarica,* on umbel plants (not in flower).

22 December – unidentified moth, *Plusia* group, seen on the outside wall of the villa.

27 December – despite an early morning frost, Honey Bees, *Apis mellifera,* were seen in numbers on wild flowers on the local hills.

31 December – Violet Bee, *Xylocopa* sp seen feeding on lavender in the garden.

1 January – the violet bee was seen again on the lavender.

2 January – our first butterfly of the year – a Green-striped White was seen flying on the hillside. I was sitting on a seat in tee-shirt and shorts. Who said "not a pretty sight"?

3 January – a rather warm day and we saw a Ladder Snake, *Elaphe scalaris,* on a local track.

15 January – Egyptian Grasshopper, *Anacridium aegyptium,* seen round the back of our new villa.

20 January – several Paper Wasps, *Polistes* sp. seen in the garden along with Shield-bugs, *Pentatomidae,* Green-striped Whites and an unidentified *Noctuid* moth.

22 January – first sighting on the hill of what looked like a Pale Clouded Yellow, *Colias hyale*. A similar butterfly was seen on several occasions over the next three weeks but I was never able to get close enough to confirm identification.

23 January – freshly emerged Bath White, *Pontia daplidice,* seen in our friends' garden.

24 January – Clouded Yellows, *Colias croceus,* seen in our friends' garden.

15 February – moved into our villa and found a Dor Beetle on the doorstep!

# *Carabus granulatus* Linneaus 1758. In Middlesex. Records from the past, 1964 by the late Peter Cribb AES 2270

*by Keith C. Lewis (3680)*

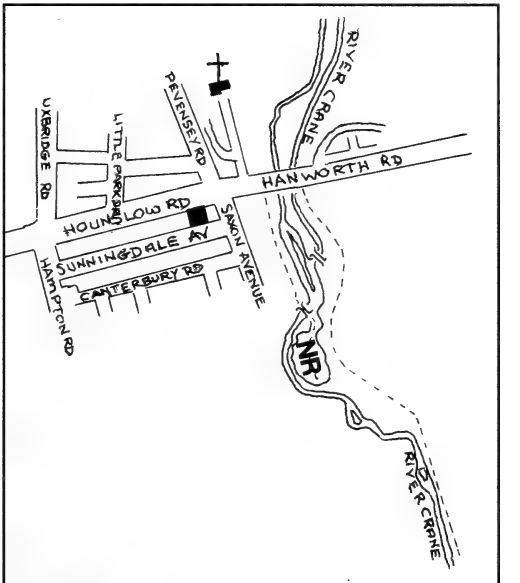
*Top Flat, 108 Park View Road, Welling, Kent, DA16 1SJ.*

Looking through a copy of the August *Bulletin* for 1964, volume 23, number 264, page 85-86, I was intrigued by a report by the late Peter Cribb of a large number *of Carabus granulatus* found in dead timber, presumably near to where he lived during February 1964. Apparently he had found a number of council workmen clearing out dead timber, scrub and trees, the latter being Willow, Elder, Hawthorn and a few Alders, from woods and marshy ground that was then subject to seasonal flooding along the banks of the River Crane.

Cribb asked the foreman if he could keep an eye open for any beetles that might emerge during the clearance and supplied the workmen with a number of tins. A few days later the tins started to return to Cribb with a large number of captured *Carabus granulatus.*

It appears that the beetles had been hibernating in the rotten Willow boles in groups of up to ten individuals, the rotten timber was reported as being very damp.

After reading this *Bulletin* report, I got out my *A to Z* atlas to try and establish the site where the




**Map 1.**
**Hounslow and Hanworth Roads, Middlesex. A to Z K8 85.**
**Keys.**
**Footpaths.** - - - - - - - - - - - - - -
**Bridges.** ⌶
**Nature Reserve. N.R.**
**Peter Cribb's House Approx.** ■

beetles had been found. Knowing that Cribb had once lived at 355 Hounslow Road, Middlesex, I assumed the River Crane and beetle site would probably be nearby, see map 1. I am as sure as I can be that the site shown on my map, redrawn from my *A to Z*, is the one Cribb was writing about, and possibly the main marshy site was the area now marked as a nature reserve, as the River Crane converges from two streams into one stream after the small island. In conclusion, J. F. Stephens in his *Manual of British Beetles*, published 1839, writes of *Carabus granulatus* being extremely abundant near London during the winter months in the debris of old trees. I would be most interested if any AES member living in the above area knows the name of the group or society that runs the nature reserve shown on the map.

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## Some interesting insect records from a few indoor electronic insect killers

*by Jan Koryszko (6089)*

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Over the last three years, a few local businesses have allowed me to inspect the dead insects in their electronic insect killers. These businesses in the Longton and Meir areas of Stoke-on-Trent, were mostly food shops and the like, using the insect killers to get rid of pests. The killers consist of black UV light tubes, which attract the insects. There is a killing grid which burns the insects on contact. The businesses are a fish and chip shop, a timber store room and a bread and cake shop. The lights are left on 24 hours a day, 365 days a year, unlike the entomological light traps used at night, predominantly to attract moths.

These indoor light traps are a good indicator of insect life in a building. The most common insects found in catchment trays are bluebottles, gnats, mosquitoes and micro-moths. The latter are mainly White-shouldered House Moth *Endrosis sarcitrella* Linn. and the Brown House Moth *Hofmanophila pseudopretella* Staint. Other less common micro-moths include the Many-plume Moth *Alucita hexadactyla* and two *Emmelina monodactyla* Linn.

In late summer and early autumn, large numbers of Lacewings are found. No doubt these are looking for hibernation quarters. Wasps are common in some years, with odd Shield Bugs. Noctuid and Geometrid Moths are most common during the spring and summer. They presumably enter through open doors or windows in the evening, attracted to the lights. Some larger moths seem to squeeze into the traps. A variety of species are found (all common). In addition in late summer, I have so far found four Small Tortoiseshells *Aglais urticae* Linn., one Red Admiral *Vanessa atalanta* Linn. and one Peacock *Inachis io.*

Interesting beetles have also turned up – Weevils, Ladybirds and the odd Sexton Beetle *Necrophorus vespilloides.* No doubt the latter was on the look out for a dead rodent. In the timber store, quite a few Larder Beetles *Dermestes lardarius* were found in the trap. No doubt these were attacking stored products along with a few Carpet Beetles *Anthrenus verbasci.* The largest number of beetles here were Furniture Beetles *Anobium punctatum.* In three years, around 200 of these beetles came to light. They fly in the late afternoon and at night. Sometimes, they just sit in the trap and can feign death. Since my findings, the pest control people have treated this area with some success. The numbers of these beetles in the trap have fallen to single figures recently.

No doubt these indoor light traps are useful to keep pests down. However, entomologists can also learn a lot about what lives among us in our buildings. Without them, serious pests may be overlooked. Some insects which entered the traps could not be identified, however, as they were too badly burned and broken up. These were mainly very small beetles, flies and micro-moths. I think some interesting species may be found in garden centres, pet shops, florists and fruit and vegetable shops. Who knows what may be found. Some insects may be identified from imported products.

# *Hylotrupes* (Serville 1834) *bajulus* (Linnaeus 1758), the House Longhorn, records of infestations and captures in Greater London and the surrounding counties 1908-1963

*by Keith C. Lewis 3680*

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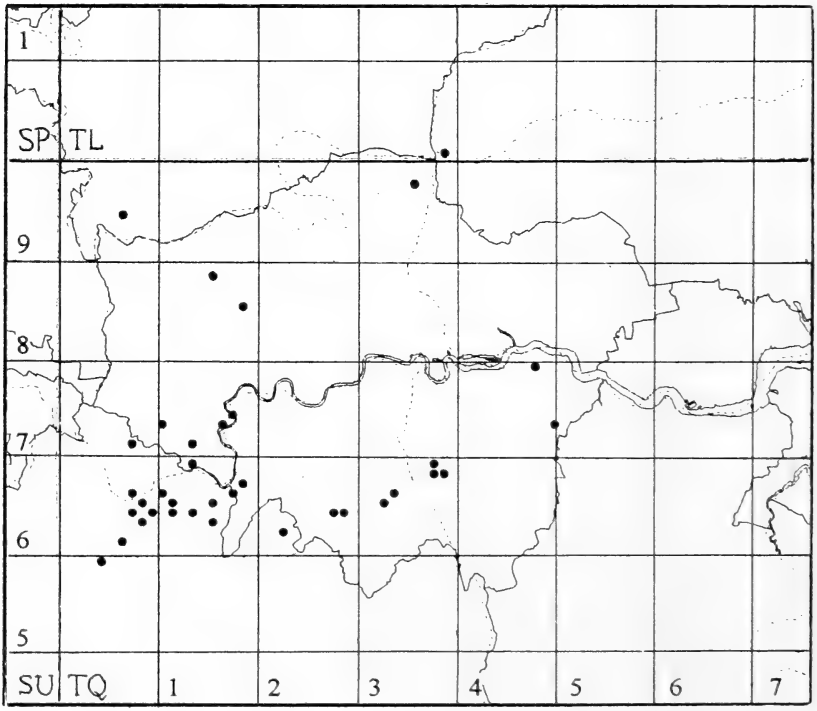
## Introduction

Some time ago I purchased from a west country natural history bookseller fifty Coleoptera papers, one bound, that had been rubber-stamped "British Museum Natural History Withdrawn from Library." These papers ranged in date from 1916 to 1957. The only bound copy was entitled *Entomology Memoirs, the European House Borer* by H. J. R. Durr and was published in 1957 by the Department of Agriculture, Union of South Africa. What surprised me was that all of the records contained in this book were for Greater London and the surrounding

Hylotrupes bajulus (House Longhorn)



counties. If one consults the *Provisional Atlas of the Longhorn beetles* published during 1999 there is only one record for the years 1970-1998 and nine other records pre 1970. But Durr's book highlights that this beetle was found far more frequently during the 20th century. The reason why these beetles are not found in a museum or published in any journal is that the infestations, 298 in Camberley alone, were investigated by the local public health authorities who would have destroyed all the infected timber. Fourteen beetles captured, but may not be shown in the *Provisional Atlas* owing to no locations being given to accompany the provisional atlas map are. Two beetles taken by T. Wood from Abbey Wood S. E. London B.M. 1923-608 one beetle taken from infested roof timber in 1963 from Bexley, Kent. Keith C. Lewis collection. Nine beetles taken by Donisthorpe, from Weybridge, Surrey area, one beetle from Box Hill, Surrey, one larvae taken by A. J. Duffy from Surrey and one beetle from Waltham Abbey, Essex.

**Records of infestation and captures.**
Locations not shown on Greater London map *

| Date | Location | Grid Ref | Infestations | Captures |
|---|---|---|---|---|
| 1908 | Abbey Wood, S. E. London | TQ4779 | - | 2 |
| 1919 22 July | Weybridge (near) | TQ0964 | - | 1 |
| 1919 24 July | Weybridge (near) | TQ0863 | - | 1 |
| 1919 8 August | Weybridge (near) | TQ0865 | - | 3 |
| 1919 12 August | Weybridge (near) | TQ0865 | - | 4 |
| 1930 17 May | Rickmansworth, Hertfordshire | TQ0694 | - | 1 |
| 1934 April | Hersham, Surrey | TQ1164 | 48 | |
| 1934 June | Richmond, Greater London | TQ1774 | 2 | |
| 1936 April | Camberley, Surrey (1)* | SU9618 | 298 | |
| 1939 October | Hampton. Middlesex | TQ1369 | 1 | |
| 1944 July | Sandhurst, Berkshire* | SU8361 | 3 | |
| 1945 June | Claygate, Surrey | TQ1563 | 3 | |
| 1946 | Surrey * A.J. Duffy Pine rafters. | Not recorded | - | Larvae |
| 1947 November | Walton-on-Thames, Surrey | TQ1066 | 20 | |
| 1948 July | Addlestone, Greater London | TQ3366 | 2 | |
| 1948 September | Weybridge, Surrey | TQ0764 | 49 | |

| Date | Location | Grid Ref | Infestations | Captures |
|---|---|---|---|---|
| 1949 | Beckenham, Kent | TQ3768 | 1 | |
| 1949 June | Normandy, Surrey* | SU935 I | I | |
| 1949 June | Esher, Surrey | TQ1364 | 2 | |
| 1949 November | Beckenham, Greater London | TQ3769 | 2 | |
| 1950 November | Croydon, Greater London | TQ3265 | 4 | |
| 1951 July | Enfield, Greater London | TQ3597 | 4 | |
| 1951 June | Byfleet, Surrey | TQ0661 | 29 | |
| 1952 | Woodham, Surrey | TQ0262 | 1 | |
| 1952 February | Carshalton, Greater London | TQ2764 | 3 | |
| 1952 July | Harrow, Greater London | TQ1588 | 1 | |
| 1952 August | Woodham, Buckinghamshire* | SP7018 | 1 | |
| 1952 September | Mitcham, Greater London | TQ2768 | 2 | |
| 1953 August | Hounslow, Greater London | TQ1375 | 1 | |
| 1954 August | Pyrford, Surrey | TQ0459 | 1 | |
| 1954 December | Twickenham, Greater London | TQ1673 | 1 | |
| 1954 January | Surbiton, Greater London | TQ1867 | 1 | |
| 1955 July | Wallington, Surrey | TQ2864 | 1 | |
| 1955 May | Cobham, Surrey* | SU9762 | 3 | |
| 1955 May | Shepperton, Greater London | TQ0766 | 1 | |
| 1956 22 July | Box Hill, Surrey | TQ1751 | - | |
| 1956 6 August | Hersham, Surrey | TQl 165 | 1 | |
| 1956 November | Waltham Abbey, Essex | TL3800 | - | |
| 1956 December | Wembley, Greater London | TQ1885 | 1 | |
| 1956 November | Near Hounslow, Greater London | TQ1371 | 1 | |
| 1958 April | Hinchley Wood, Surrey | TQ1565 | 1 | |
| 1958 August | College Town, Berkshire* | SU8560 | 3 | |
| 1958 August | Ewell, Surrey (2) | TQ2262 | 1 | |
| 1958 July | Ashford, Middlesex | TQ0771 | 4 | |

| Date | Location | Grid Ref | Infestations | Captures |
|---|---|---|---|---|
| 1958 September | Woking near Surrey | TQ0058 | 1 | |
| 1959 | Beckenham, Kent | TQ3868 | 1 | |
| 1959 January | Famham, Surrey* | SU8346 | 1 | |
| 1959 January | Feltham, Greater London | TQ1073 | 1 | |
| 1963 8 July | Old Bexley, Kent | TQ4973 | - | |

Note (1) Camberley, Surrey. Infestation found in imported parquet flooring blocks.

(2) Ewell, Surrey. In floorboards that had been in place for two years, having been used from a building elsewhere.

## London Postal Districts

Records listing the London postal districts (published 1957). Due to there being no recorded locations and later government boundary changes, these postal districts may now be somewhat incorrect but are included but not shown on the map. Although it is disappointing that no definite map references are given for Greater London, it is interesting to note that many of the infestations occurred in the years just after the second world war, see records graph 1908-1963 fig 2. It is most likely that these London infestations 1947-1952 were exacerbated by using useful timber containing eggs or larvae from other bombed

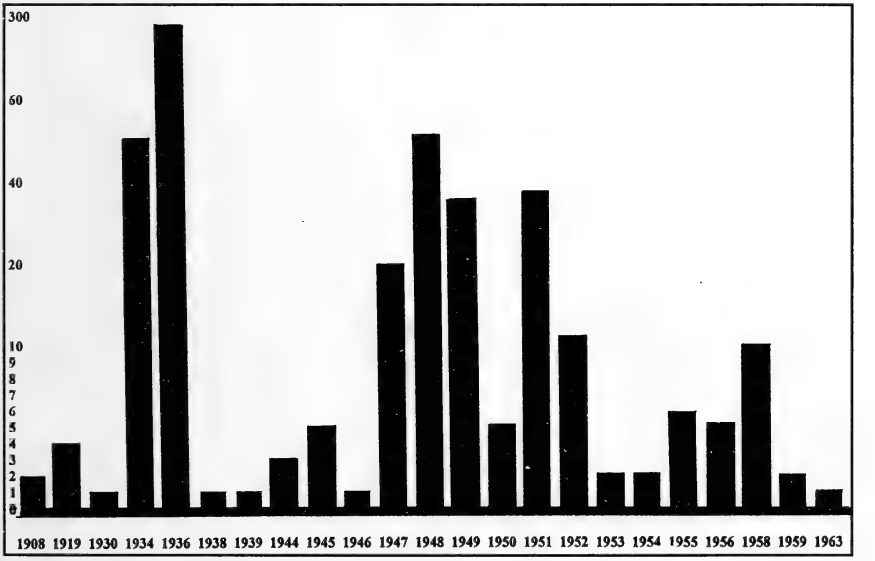



Fig. 2. Infestations and captures in Greater London and the surrounding counties 1908-1963.

buildings. The longest period of time for the egg/larval stage to emergence in pine timber that I have been able to find was recorded as five years and twenty six days.

| Date | London postal districts | Total infestations |
|---|---|---|
| 1936 March | W.10. | 1 |
| 1938 February | S.E.10. | 1 |
| 1945 June | S.W. 19. | 1 |
| 1945 September | W. 8. | 1 |
| 1948 August | S.W.3. | 1 |
| 1948 December | W.1. | 1 |
| 1948 July | S.W.1. | 1 |
| 1949 February | S.W.6. | 1 |
| 1949 July | W.18. | 1 |
| 1950 April | N.21. | 1 |
| 1951 April | S.W.1. | 1 |
| 1951 August | E.C.4 | 1 |
| 1951 August | S.W.18. | 1 |
| 1951 March | S.W.7. | 1 |
| 1951 November | S.W.5. | 1 |
| 1951 November | S.W.5. | 1 |
| 1952 December | S.E.17 | 1 |
| 1952 February | S.W.5. | 1 |
| 1952 September | S.E.10. | 1 |
| 1953 December | W.1. | 1 |
| 1953 October | S.W.1. | 1 |
| 1953 October | W.1. | 1 |
| 1954 March | W.2. | 1 |
| 1955 January | S.W.1. | 1 |
| 1956 November | S.W. 13. | 1 |
| 1958 September | S.W.1. | 1 |

E. F. Linssen in his Beetles of the British Isles series two writes of a specimen in the W. W. Fowler collection, having been taken, it is said, by Lady Maryon Wilson about the year 1795.

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# Moths and butterfly of Polgown, Dumfries and Galloway

*by Martin Laux (9561)*

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Polgown (OS Map Sheet 78 – Grid reference 718038) is a house situated 12 miles from the nearest village, Penpont, near Thornhill in the Dumfries and Galloway region of Scotland. Polgown is approximately 320 metres above sea level and overlooks the valley containing rivers feeding Scaur Water. The Southern Upland Way passes along the edge of Polgown. The surrounding hills range between 450-500m.

The area around Polgown comprises grass, common rush and vegetation associated with uplands and marshy area, for example Common Butterwort. Immediately around the house are Mountain Ash and Larch. A semi-cultivated area contains Buttercup, Common Nettle, Dock, Lady's Smock, Marsh Thistle and various Plantains.

A week's holiday, May 28th to June 4th 2005 allowed the opportunity to run a Robinson MVLT, with a 125w bulb. Despite the disappointing nil return for the first three nights, the wetter and warmer second half of the week was more rewarding, as can be seen below. The number is that from Bradley's Log Book of British Lepidoptera.

Green-veined White (1551) – *Pieris napi*

Flame Carpet (1722) – *Xanthorhoe designata*

Common Carpet (1738) – *Epirrhoe alternata*

Spruce Carpet (1769) – *Thera britannica*

Broken-barred Carpet (1773) – *Electrophaes corylata*

Brown Silver-line (1902) – *Petrophora chlorosata*

White Ermine (2060) – *Spilosoma lubricipeda*

Flame Shoulder (2102) – *Ochropleura plecta*

Cabbage Moth (2154) – *Mamestra brassicae*

Pale-shouldered Brocade (2158) – *Lacanobia thalassina*

Bright-line Brown-eye (2160) – *Lacanobia oleracea*

Broom Moth (2163) – *Melanchra pisi*

Hebrew Character (2190) – *Orthosia gothica*

Knot Grass (2289) – *Acronicta rumicis*

Spectacle (2450) – *Abrostola tripartita*

For those interested in birds the area around Polgown supported many interesting species – Grey Heron, Common Buzzard, Black Grouse, Oyster Catcher, Lapwing, Dunlin, Curlew, Barn Owl, Sky Lark, House Martin, Meadow Pipit, Grey and Pied Wagtails, Whin and Stone Chats, Hooded Crow and Linnet.

## Welcome to nano-technology

*by Jacqueline Ruffle (5911)*

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When I came across a fascinating – yet scary – article in a French magazine, I thought that I would share it with you....

Entitled 'Bienvenue dans le nanomonde', it was discussing the putative role of nanotechnology in the future. A nano is a unit of measurement equal to one thousand millionth of a metre (10-9), [i.e. 100,000 nano would be about the same breadth as a single hair.]

Developments in nanotechnology have allowed miniscule transistors and fibre optics to be attached to insects like flies and bees. These, the article suggests, could then be released into otherwise inaccessible areas and relay information back to computers in, for example, military bases. In a further military use for insects, it is argued that they could be used as vehicles for viruses and toxins – and transported – like 'Trojan horses' – into 'enemy' territory.

It is also claimed that they could be fitted with micro-circuits which could be programmed to give the insects specific orders. [I wonder if that would work with my children, too?]

Before one becomes too alarmist, the article goes on to illustrate the many beneficial developments that nano-technology could bring, e.g. in micro-surgery or the use of quantum mechanics to produce fuel [ethylene] from water and methane.

Destined to become the next 'industrial revolution', America, Japan and Europe are investing millions of dollars into the field and a 'National Weekend of Micro-nanotechnology and Nanoscience' was held in Besonçon, France, in October 2005.

### References

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Rieublandou, Pierrette & Kohler, Pierre Bienvenue dans le nanomonde Okapi (756), 15 March 2004: 24-31.

# Fleas in Shropshire (vc40)

*by J. L. Mason (7878) & R. S. George (1402)*

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**Summary**

From 1992 onwards one of the authors has made a systematic search for fleas in Shropshire (vc40). This has resulted in records from every one of Shropshire's 10km squares and for a total of 34 species (together with historical records this brings the number of species recorded for Shropshire to 36).

## Introduction

### Methods

Between 1992 and 2004 a systematic search for fleas was carried out in Shropshire (vc40). Using the known host-parasite relationships the recording of fleas was targeted by searching the nests and freshly dead bodies of relevant hosts.

A strategy was devised to target individual or groups of species of fleas. Bird fleas were targeted by a winter search for nests. House martin nests were spotted by driving around each 10km square and looking at houses and other suitable buildings or structures. Householders were approached for permission to collect nests and the nests were removed with a purpose-built collecting box mounted on a set of extendable poles. Known sand martin colonies were visited and a search for nest holes was made by visiting sand and gravel pits and by looking at suitable stretches of river bank. Nest material was collected using a purpose-built collecting stick to probe the nest holes. Birds' nest box schemes were visited and the nests collected. The nests of certain other bird species were targeted because of their potential to host specific parasites: town pigeons, jackdaws, wheatears and crows.

Mammal fleas were targeted by searching for nests of small mammals including moles and by the examination of freshly dead road kills. Small mammals, principally bank and field voles and field (wood) mice, and occasionally shrews, build nests which can easily be located by searching suitable sites. Small mammal nests were searched for in a wide variety of situations. In particular grassy road verges were targeted and a search was made for anything that could act as a shelter and potential nest site. Nests from dormouse boxes were also searched. Moles were targeted by searching for their fortress mounds.

Freshly dead animals were obtained mainly by looking on public roads. In particular a search was made for badgers, hedgehogs, grey squirrels and rabbits for their respective parasites. Other road casualties also searched included foxes, polecats, mink, stoats, weasels and brown rats. A number of opportunities were taken to examine shot or trapped vermin. Records from badger road kills were supplemented by examining badger setts and collecting recently discarded bedding for subsequent searching.

Bat fleas were targeted by visiting bat roosts* and collecting samples of the accumulated droppings. Also bat box schemes were visited, the boxes examined and any droppings removed for subsequent examination.

As a general principle all materials such as nests, bedding, and bat droppings were searched manually (teasing apart where necessary) to discover any fleas (dead or alive) that were present. All materials were kept for re-searching later to discover any fleas that had emerged subsequently.

## Results

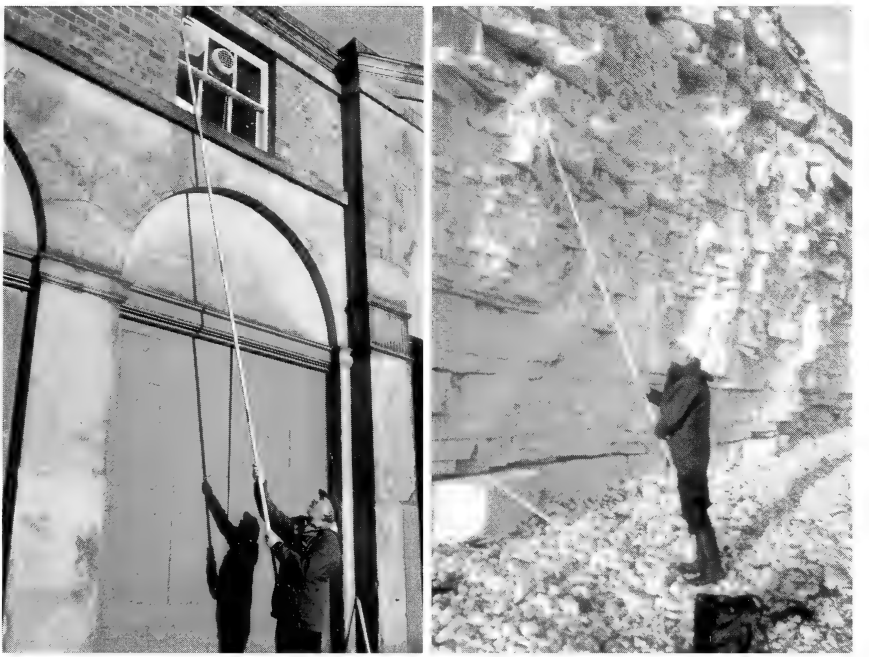
### Nests and bodies

House martins proved very easy to detect and were the easiest of the targets to find and collect in a systematic way. The most recently used nests were generally the most productive for fleas. Old nests occasionally contained house martin parasites but also often showed signs of use by other birds for roosting or nesting. Where nests showed obvious signs of use by house sparrows they were collected in addition because of their potential to yield additional species of fleas.

Sand martin nest colonies are generally well known so most of the sites visited were already known to the ornithological fraternity. However nesting in river and stream banks can be sporadic and some searching was necessary to locate recently used nest holes. There was some evidence of re-use of sand martin nest holes by other animals, in particular small mammals, and such nests yielded their respective fleas.

Birds' nest boxes used by blue tits and great tits often yielded more than one species of flea. Occasionally there was evidence of use by small mammals and bats. Birds' nests were retrieved from many natural situations. In general nests from exposed positions in trees and hedgerows were saturated with water and yielded soil fauna rather than parasites. Nests from sheltered situations such as outbuildings, under bridges and tunnels, holes in walls and hollow trees were well protected and dry and produced some fleas.

* J. L. Mason is employed by English Nature and is licensed to visit bat roosts.



JLM collecting house martin nests.

Town pigeons' nests were located in buildings and under bridges; jackdaws' nests were retrieved from hollow trees; wheatears' nests were found in rabbit burrows in the upland areas and crows' nests were extracted from stunted trees in the uplands or in a few instances during tree felling operations.

Nests of small mammals were easily found under suitable shelters. Discarded sheets of material such as chipboard, hardboard, blockboard, corrugated iron and asbestos all provided sheltered conditions underneath. Vole nests were regularly discovered under such materials wherever they lay on grassy surfaces. In practice a huge range of other discarded items were found to conceal sheltered small mammal nests. These included all kinds of notice boards, traffic signs, traffic cones, and even fragments of cars, including wheel trims. Nests were also found under many less suitable items such as black polythene bags and sheeting, discarded furniture, carpets and clothing. In woodland areas more natural materials such as uprooted tree stumps, logs and planks of wood also provided shelter for nests. In a few areas such shelters were deliberately placed in the field in order to encourage their use for nesting by small mammals as a way of obtaining records of fleas.

The majority of nests recovered from such situations belonged to bank or field voles. Nests made by shrews were found sporadically by chance but no methodology was devised specifically to target their nests (and hence their fleas). Shrews' nests were found under corrugated iron, planks of wood and in one case under a concrete block.

Mole fortress cutaway (above) and mole nest (below)

Fortress mounds produced by moles were easily located from the road or by walking through suitable areas along public rights of way. Such mounds were more frequent in areas with heavy waterlogged clay soils or in low-lying peat areas. They were found most easily during the late winter before new grass growth or the dispersal of the drying soil of the mole heaps made it more difficult. Locating fortresses proved the only reliable way of locating actual nests. Some nests showed signs of occupation by other small mammals.

Road kills yielded a constant supply of bodies to search. Freshly dead animals were usually the most productive. Long dead animals generally yielded no parasites. It was apparent that parasites stayed for longer on bodies during the colder months of the year. Some bodies were collected to extract the fleas but generally if live fleas were present they could be located by searching the body at the roadside. Hedgehogs were the main exception to this rule. Dead fleas could be found on hedgehog bodies by subjecting them to a thorough search because parts of the skin were often turned inside out in a mangled corpse concealing fleas in the folds. The ears of dead rabbits were examined, even in badly squashed bodies, because rabbit fleas tend to embed themselves inside the ear.

**Fleas**

Identifications were done by R. S. George.

588 collections of fleas were made in Shropshire and these will be published in appropriate detail in due course.

34 species were recorded in Shropshire during the present study.

189 collections were also made in neighbouring counties (Cheshire, Denbighshire, Herefordshire, Merionethshire, Montgomeryshire, Radnorshire, Staffordshire and Worcestershire) and these will be published at a later date.

Records were made for every Shropshire 10km square (54 10km squares are wholly or partly within vc40: 16 wholly within and 38 partly within).

Two species previously recorded for Shropshire were not found during this study: *Pulex irritans* and *Monopsyllus sciurorum sciurorum*.

It can be confidently assumed that most of the remaining 34 species that have been recorded in the vice county occur in every 10km square. During the present study only two species (*Hystrichopsylla talpae talpae* and *Ctenophthalmus nobilis vulgaris* ) were actually shown to be present in all 54 of the Shropshire 10km squares. With more time devoted to recording it should be possible to demonstrate this for all the other species whose hosts also occur in every 10km square.

There are two species that probably do not occur in every 10km square (in the following account the number of 10km square records in each case is shown in brackets after the name of each species):

*Ceratophyllus borealis* (2) which is a flea of wheatears' nests in inland areas and is probably restricted to the upland areas where the host breeds.

*Ctenophthalmus congener congener* (3) was not previously known outside S E England. Its presence in S Shropshire (and in neighbouring N Herefordshire vc36) needs further investigation as the full extent of its range in the border counties has not yet been defined.

A number of other species have relatively few records. This is almost certainly more a reflection of the practical difficulties involved in collecting them systematically.

*Ceratophyllus styx jordani* (12): the sand martin flea. Distribution of sand martins in Shropshire largely follows main rivers together with sand and gravel pits. The birds have not yet been recorded in every 10km square but nesting by individual pairs can be difficult to record.

*Peromyscopsylla spectabilis* (4): very few specimens were collected from small mammal nests. This presumably reflects a low density of this flea compared to the other species found in the same situation.

*Ceratophyllus vagabundus insularis* (2) and *Ceratophyllus columbae* (1): only three records but difficult to find nests systematically and physically difficult to reach nest locations

*Palaeopsylla soricis soricis* (6) and *Doratopsylla dasycnema dasycnema* (5): only a few records, but nests of shrews hard to locate systematically

*Ceratophyllus garei* (2): surely present in every square. Records of this flea have proved elusive, mainly because suitable nests are hard to locate.

*Ctenocephalides canis* (1): should be widespread but only recorded once from a dog

*Ischnopsyllus elongatus* (1): a single record, but noctule bat roosts are difficult to find and access

## Discussion

Some species such as *C.n.vulgaris* (54) and *H.t.talpae* (54) were recorded in every 10km square. These are species that are easy to find by systematic searching.

Very few specimens of some species were found because of the difficulty of locating their hosts rather than the actual distribution of the species.

There are a few other theoretically possible species (whose hosts occur in Shropshire) but which have not been found:

*P. irritans*: not found but possible on badgers

*M.s.sciurorum*: historical records associated with red squirrels but unlikely to occur today

*Ceratophyllus rossittensis rossittensis*: some crows' nests were obtained and searched but the only fleas that were recovered were *C.garei*. Presumably these were collected with nest material, possibly pinched from a ground nesting bird's nest.

*Leptopsylla segnis*: a few house mice were found but none yielded this flea.

*Palaeopsylla kohauti*: did not appear in Shropshire mole nests in the 85 nests examined but its occurrence is perhaps unlikely because of its known distribution.

*Rhadinopsylla isacantha isacantha*: was not found in spite of examining more than 200 small mammal nests. If it is present it is very infrequent.

*Ischnopsyllus intermedius*: not found because its host (Leisler's bat) was not found during the present study.

*Nycteridopsylla longiceps*: not found but droppings searched from only about 30 pipistrelle bat roosts which may be too small a sample.

A few other species are so unlikely to be found in Shropshire that they can be discounted. These include *Nycteridopsylla eusarca, Ischnopsyllus variabilis, Palaeopsylla soricis vesperis, Megabothris rectangulatus* and *Chaetopsylla trichosa trichosa*.

**Acknowledgements**

Sincere thanks to all those who have helped with this study, especially the following colleagues in English Nature who have helped in so many ways by directing me to suitable localities, by telling me about road kills and by collecting nests of various sorts: Tim Coleshaw, Joan Daniels, Helen Griffiths, Colin Hayes, Andrew Hearle, David Heaver, Adrian Hillman, Chris Hogarth, John Robinson, Graham Walker and Tom Wall. Many people have willingly and enthusiastically contributed while maintaining a respectable distance from the fleas themselves.

## Exhibition 2005 – Exhibit Reports

**Peter Baker – A few observations concerning the three British species of "Marbled Carpet".** (These notes only refer to specimens seen in England and Scotland.)

*Chioroclysta truncata,* the Common Marbled Carpet, is possibly our commonest geometer in its season. It shows much variation throughout its range with generally distributed forms widespread. However, there are certain forms which seem to be more localised, especially in respect of northern or southern distribution.

1. Possibly the commonest form of this species throughout its range. Markings tend to be obscure and ill-defined though close examination shows that the patterning of all the distinct forms can be faintly detected
2. These are from southern England and are dark with a tendency to an even darker median band on the forewing. Compare these with....
3. A form more brightly marked with much more contrast in the fore-wing median band, most frequently seen in Scotland.
4. A bright well marked form with white median fore-wing band is possibly only found in the Highlands. A similar form, 4a, is found in the south but this is not so bright and contrasty, a difference more marked in newly emerged specimens.
5. The form with a light ferrugineous patch on the fore-wing occurs throughout its range.
6. A form found in East Devon. A number of these have been reared from larvae found on *Buddleia davidii.*

*C. citrata,* the Dark Marbled Carpet, is a more local insect, widespread but commoner in the north. Species from Scotland show variation analogous to some of the forms of *truncata* from Scotland.

1. Specimens from the south tend to be much darker with less contrast in the markings.

*C. concinnata,* the Arran Marbled carpet, is restricted to a few localities in western Scotland. It can be quite common where found. It seems to display a much more restricted range of variation than either *truncata* or *citrata.* Many authors regard this insect as but another form of *truncata.*

**Rupert Barrington – Two specimens of the Monarch Butterfly (*Danaus plexippus*) from Honolulu, Hawaii**

One was a typical example. The other was an aberration in which the red-brown ground colour is replaced by white. This striking form is extremely rare in the rest of the range of this species, but occurs regularly on the Hawaiian Islands, occupying a very small percentage of the adult population.

**Henry Berman – British Bumblebees and British Social Wasps**

The exhibit was a display of pictures of the Bumblebees of the United Kingdom. A second part was called "Let's face it, we appear to have lost our wasps". This was comprised of diagrams of the face patterns of the ten Social Wasps of the United Kingdom – face pattern is one of the easiest way to identify our wasps. I was asking fellow entomologists to give me records of species in their areas for a national survey. There were hand lenses and specimens to identify. Identification sheets were available for people to take away, two on wasps, one on bumblebees and one on cuckoo bees.

**C.J. Gardiner – A Display of Photographs of Butterflies and other Insects taken in the French Alps in August 2005**

Two areas were visited, Chamonix in Haute Savoie, and the Vèneon valley in Isère. Around 40 species of butterfly were seen, including Sloe Hairstreak (*Satyrium acacieae*), Silvery Argus (*Aricia nicias*), and Spotted Fritillary (*Meliaea didyama*). Other interesting insects photographed were the Striped Shield Bug (*Graphosoma lineatum*), and a large Robber Fly (Diptera, Asilidae) preying on an *Erebia* butterfly.

**Andrew Halstead (6346) – The Poplar Sawfly**

The poplar sawfly, *Trichiocampus grandis* (Lepeletier) (formerly *T. viminalis*) is a local species that sometimes causes a noticeable degree of defoliation on poplars (*Populus* ssp.) and aspen (*Populus tremula*). The yellow and black adults occur between May and August but this insect is easier to find and identify when at the larval stage. The caterpillar-like larvae are up to 20mm long. They have black heads and the bodies are mostly whitish-green but are orange on the thorax and the pre-anal segment of the abdomen. Each segment has a large round black spot on either side of the upper body.

These larvae have a very distinctive style of feeding. The first instar larvae graze the lower leaf surface, causing the damaged tissues to dry up. The older larvae eat whole portions of the leaf. Many sawfly larvae cling to the leaf margin when they feed but those of the poplar sawfly lie side by side on the lower leaf surface and eat the leaf from the tip backwards. When the larvae cannot retreat any further, they move to another leaf, leaving clusters of leaf stubs at the shoot tips.

The females insert eggs in a row along the leaf stalks. This causes characteristic swellings in the petiole, and this is a useful confirmation sign for this insect if the larvae are no longer present. When fully fed, the larvae spin cocoons in crevices in the bark or among the leaf litter.

**Colin Hart – Rearing the Narrow-bordered Bee Hawk (*Hemaris tityus*)**

This is a species I had never previously seen, so in July 2004 I made a special attempt to find the larvae.

Roy McCormack knew of a locality in the centre of Dartmoor where two moths were seen the previous year, so we set off one sunny afternoon to search for larvae on their foodplant, Devil's-bit Scabious (*Succisa pratense*). The locality was a field of unimproved acid grassland supporting a few bullocks and containing a mix of herbaceous plants including Devil's-bit Scabious. The soil was poor, but not the poorest in the vicinity.

The larvae were hard to find as they are very well camouflaged. In addition they often feed and rest on the underside of a leaf which means painstakingly turning over every likely leaf as part of the search. We soon decided that if the plant had no signs of feeding it wasn't worth searching the leaves for larvae.

The flower stems of the foodplant turn purple in midsummer and the larvae have variable purple markings as well as a purple stripe on the ventral surface, all of which help with camouflage. Larger larvae often consume the leaf from the tip downwards leaving part of the midrib uneaten and this characteristic shape was useful when locating larvae. I think other large moth larvae also feed in the same way, so feeding damage like this can't be used on its own as evidence that the species is present.

We found only large or small larvae, never medium sized. In late May 2004 there was a hot spell, followed by cool weather in June. Emergence of the adult is strongly affected by spring temperatures and

it appears that some adults emerged in late May, then there was a gap, followed by the remaining moths much later in June. This would account for the size of the larvae we found.

I reared my larvae in a large tub with growing Devil's-bit Scabious, by chance the tub also contained a dense tussock of Cock's-foot Grass (*Dactylis glomerata*). One day when I looked in the tub a full-grown larva was burrowing through the base of the tussock. It eventually disappeared and I assumed it had pupated in the soil.

In fact the pupae are formed in a strong cocoon of brown silk one or two centimetres above the soil surface, but always amongst dense grass. All my larvae pupated in the same way, none of them went underground. This series of photographs shows the pupa in its cocoon with the surrounding grass cut away.

The adults all emerged in June this year.

**Robin James – A New Aberration of the Clouded Yellow (*Colias croceus* (Geoffroy), Lepidoptera: Pieridae)**

(And additional photographs showing the purple flush of the forewings of this aberration, shown 2004).

The stock originated from Southern Spain in April 2004.

The aberration appeared in the second generation of adults bred from random pairings. All adults from the first generation appeared to be typical.

The larvae were fed on Lucerne (*Medicago sativa*) and assorted vetches and reared on a kitchen windowsill.

Six imagines, all male, emerged in September. Only two emerged successfully, the others had difficulty extricating their wings from the pupa, possibly indicating that the gene responsible has a deleterious effect. It is not thought that the difficulty in emergence was due to environmental factors as typical imagines did so without difficulty.

Also, a single male and female *ab. russwurmi* (Harmer) bred from stock collected at Portland.

**Peter May and the Publications Committee**

This years exhibit from the AES Publications Committee covers the smaller publications that have dealt with the Lepidoptera. As, perhaps, the most studied order, many publications have been produced by the Society which have been primarily aimed at the Lepidopterist. 'The

Amateur Entomologist' series has always been used for the larger publications, but many other smaller ones have been produced as either leaflets or pamphlets, and those based upon the Lepidoptera will be found here in chronological order. Those underlined are still available and can be obtained today from AES Publications.

*Setting Lepidoptera* by B A Cooper. This was published in 1942, and became out of print in 1953. It is now considered Leaflet number 2, but at the time of printing such numbers were not allocated. It was not reprinted, but other publications have since become available.

*Silkworm Rearing* by B A Cooper, 1943. This was the first leaflet to bear a number, being number 3. It remained available until 1986.

*A New System of English Naming for British Macrolepidoptera*, by B A Cooper and A F O'Farrell. This was produced in 1943 and sold quickly, being out of stock by 1946. It was not reprinted. Although it was our first pamphlet, the number did not appear on it.

*Collecting Microlepidoptera*, by L T Ford. Printed in 1945, this was Leaflet 13, and the initial stock sold well, becoming out of print in 1951. It was reprinted in 1955 and lasted until 1980.

*Setting Microlepidoptera*, by S Charlson. Leaflet 14 was also first produced in 1945, out of print in 1951 and thereafter reprinted in 1955, lasting until 1980. It was really a companion to Leaflet 13, which probably explains the similarity in the dates.

*A Label List of British Macrolepidoptera*. This was Pamphlet 4 and was designed so as to be cut up for cabinet labels, being printed on one side of the page only. A popular item, it was published in 1946 and lasted until 1986.

*A Checklist of British Macrolepidoptera*. This Pamphlet (number 5) used the same text as the Label List, but was printed on both sides of the page. It was also printed in 1946 and was available until 1986.

*Collecting Clearwings*. Leaflet 18 was published in 1946 and remains available. It provides useful information regarding this group of moths that has become more studied in recent years than ever before.

*A Label List of British Butterflies*. This was another popular leaflet and remained in stock until 1988, having been printed in 1947. Like Pamphlet 4, this was printed on one side only in order that it could be cut up for cabinet labels.

*Preserving Caterpillars*, by H E Hammond. Very few other publications have dealt with the aspect of preserving larvae, the subject of this leaflet. It was printed in 1948 and remained available until 1983.

1951 saw the publication of *A Glossary for the Young Lepidopterist* which is still available today. It is full of information to explain the various technical terms used by Lepidopterists , but would no doubt be useful to those who are interested in other orders, many of the terms not being restricted to Lepidoptera.

In 1956, the first edition of Leaflet 28, *Killing, Setting and Storing Butterflies and Moths* by L W Siggs. 1500 were printed which ran out in 1972. It was reprinted shortly thereafter.

Peter Cribb initially arranged, in 1966, for *A Label List of Butterflies (Rhopalocera)* to be printed for the society, and handed the stock over when sales had covered the printing costs he had incurred. Although an unusual size, it was one of our best selling items for a number of years, eventually running out of stock in 1981, when a new edition was produced.

With the ever increasing interest in using light traps to attract moths at night, the Society published in 1970 *Insect Light Traps* by J Heath. It sold in sufficient numbers that a reprint was needed in 1972 and a slightly revised edition appeared in 1976, lasting until 1994.

1972 saw the publication of a new edition of the *Killing, Setting and Storing Butterflies and Moths* leaflet first produced in 1956. This edition remained available until 1988, when the current edition was published.

*An Amateurs Guide to the Study of the Genitalia of Lepidoptera* is probably the leaflet with the longest name so far produced! It is Leaflet 34 and still available today.

The 1976 revised edition of *Insect Light Traps* by J Heath, which remained available until 1994. It has now been superseded by the current Moth Traps booklet, which is still one of our best sellers.

In 1981 the *Label List of Butterflies (Rhopalocera)*, Pamphlet 11, was revised and now appeared in the same format as our other publications, A5. It is still available.

As part of our Golden Jubilee celebrations (1935 to 1985), Pamphlet 12 was produced. It is still available today, and contains two important articles.

The current edition of Leaflet 28, *Killing, Setting and Storing Butterflies and Moths* appeared in 1988. Although it is still available today, current stocks are expected to run out in the next few months.

Pamphlet 15, *Butterflies of Cyprus 1998* by E John was published in 2000 and is still in stock now.

**Roy McCormick – Interesting moths seen in Devon during 2005.**
The specimens exhibited are not necessarily the ones recorded.

174 *Heterogenea asella* D.& S. Triangle
Cadworthy Wood, near Shaugh Bridge, Dartmoor. Nearly full grown larvae, 10.9.2005, Roy McCormick & Bob Heckford.

374 *Synanthedon vespiformis* Linn. Yellow-legged Clearwing
Stover Park area, near. Newton Abbot, 12 mostly full grown Larvae, 31.3.2005, Roy McCormick – 9 bred to adult.

653 *Aplota palpella* [*palpellus*] Haw.
Harcombe Wood, Chudleigh, 22.7.2005, at light, Roy McCormick & Bob Heckford.

1329 *Donacaula forficella* Thunb.
Kingsteignton, 27.6.2005, Brian King and Braunton Burrows, 09.7.2005, Steve Hatch, both at light. The Kingsteignton site is unusual with no reeds or marshland nearby.

1356a *Evergestis limbata* Linn.
Kingsteignton, 13.7.2005, Brian King and Teignmouth, 25.6.2005, Roy McCormick, both at light. These are the second and third records for Devon

1382 *Anania verbascalis* D.& S.
Lincombe, near Sidmouth, 25.7.2005, at light, Ivan Lakin. This is the first record for Devon.

1432 *Anerastia lotella* Hübn.
Braunton Burrows, 7.7.2005, at light, Richard Coomber.

1435 *Conobathra tumidana* D.& S.
Crownhill, Plymouth, 11.7.2005, J.Beswetherick (confirmation by photograph) and Teignmouth, 20.7.2005, both at light. These are the first records for Devon.

1440 *Trachycera marmorea* Haw.
Braunton Burrows, 09.7.2005, at light, Steve Hatch.

1675 *Cyclophora pendularia* Clerck, Dingy Mocha
Hatherleigh Area, 17.6.2005, at light, Rob Wolton.
First specimen seen in Devon since 1936.

1679 *Cyclophora porata* Linn. False Mocha
Bere Alston, 8.6.2005, at light, Tom Sleep.

1701 *Idaea sylvestraria* Hb. Dotted-border Wave.
Hatherleigh area, 26.6.2005, at light, Rob Wolton.

1711 *Idaea trigeminata* Haw. Treble Brown Spot
Kingsteignton, 23.6.2005, at light, Brian King. With the amount of errors relating to this species listed in Moths of Devon (2001), pages 100 & 101, and with no specimens, that I could find available. I can only assume that this is the first confirmed specimen in Devon.

1714 *Idaea degeneraria* Hübn. Portland Ribbon Wave
Slapton Reed Beds, 02.6.2005, Jeff Clarke (confirmed by photograph)
Woodbury Salterton, 13.6.2005, at light, Mike Meehan and Dawlish Warren, 14.9.2005, at light Ivan Lakin (confirmed by photograph). I can only assume that these records are all migrants.

1741 *Costaconvexa polygrammata* Borkh. Many-lined
Uplyme, Near Lyme Regis, 27.3.2005, at light, Oliver Woodland.
This record is only, as far as I know, the second in Devon

1757 *Eulithis mellinata* Fabr. Spinach
Harcombe Wood, near Chudleigh, 18.7.2005, at light.Roy McCormick. This is a female which laid around 20 eggs and is also the first record for Devon since 1999.

1771a *Thera cupressata* Geyer, Cypress Carpet
Holcombe, near Teignmouth, 24.6.2005, at light, Roy McCormick. This is a

new site for the species adding to the sites at Dawlish and Thatcher Point, Torquay, where Barry Henwood beat larvae in May of this year and one of our DMG members gets it, at light, in his garden at Ilsham Marine Drive, Torquay.

1801 *Perizoma taeniata* Steph. Barred Carpet
Watersmeet, Fishermans car park, 12.7.2005, at light, Roy McCormick. This visit to Watersmeet has been part of an ongoing investigation of the distribution of this species. It is now known that it occurs from Lynmouth, right along Lyn Cleave, Myrtleberry Cleave past Watersmeet and down to Hillsford Bridge. Areas along the East Lyn River have yet to be looked at.

1842 *Eupithecia simpliciata* Haw. Plain Pug
Harcombe Wood, near Chudleigh, 18.7.2005, at light, Roy McCormick and also at Prawle Point, 22.7.2005, at light, Ivan Lakin.

1996 *Furcula bicuspis* Borkh. Alder Kitten
New Bridge Wood, Holne, near Ashburton, 27.5.2005, at light, Roy McCormick & Barry Henwood, also at Shaugh Prior, Shaugh Bridge, Dartmoor, June 2005, at light, Andy Trout

1998 *Furcula bifida* Brahm. Poplar Kitten
Hatherleigh area, 17.6.2005, at light, Rob Wolton. This area seems to be the the place where the species can reliably be seen; there is a lot of aspen growing around Hatherleigh.

2009 *Ptilodontella cucullina* D.& S. Maple Prominent
Watersmeet, Fishermans car park, 12.7.2005, at light, Roy McCormick. Several specimens were seen at all the sites investigated this year; the area is one of the places where the species can reliably be seen.

2031 *Leucoma salicis* Linn. White Satin
Teignmouth, 30.7.05, at light, Roy McCormick.
There have only been three recent sightings of this species; Colyton, 13.7.1977, at light, Barry Henwood; Abbotskerswell, 21.6.1986, at light, Barry Henwood and Countess Wear, 25.7.2002, at light, Paul Butter.

2051 *Lithosia quadra* Linn. Four-spotted Footman
Brooking's Down Wood, Noss Mayo, 9.8.2005, at light, Roy McCormick. There have been several sightings of the species throughout Devon this year, but at this site we recorded 6 females and 4 males.

2094 *Euxoa crassa* Hübn. Great Dart
Ilsham Marine Drive, Torquay, 10.8.2005, at light, Bill Deakins. This is only the second record for Devon, the first was at Uplyme, near Lyme Regis, 8.8.2004, at light, Oliver Woodland.

2152 *Sideridis albicolon* Hübn. White Colon
Northam, Bideford, 13.7.2005, at light, D.E.Paull and confirmed by me. Also at Dawlish Warren, 28.6.2005, at light, Ivan Lakin.

2162 *Papestra biren* Goèze. Glaucous Shears
Princetown, Dartmoor, 30.5.2005, plus other dates at light, Paul Stubbs. Odd records of this species have occurred in Devon, with the last of these at Lydford (on the western edge of Dartmoor), May 2002, and the one before at Abbotskerswell, July 1989. Princetown is now a known locality for this moth to be found.

2172 *Hadena albimacula* Borkh. White Spot
Branscombe to Beer undercliff, 10.6.2005, at light, Roy McCormick. This visit was part of the ongoing monitoring of this Biodiversity Action Plan species at this the only area in Devon the moth can be found.

2183 *Orthosia miniosa* D.& S. Blossom Underwing
New Bridge Wood, Holne, near Ashburton, 27.5.2005, Larvae in spun oak leaves, Roy McCormick & Barry Henwood.

2206 *Mythimna putrescens* Hb. Devonshire Wainscot
Northam, Bideford, 20.7.2005, at light, D.E.Paull, also Prawle Point, 22.7.2005, at light, Ivan Lakin.

2208 *Mythimna loreyi* Dup. Cosmopolitan
Yelverton, 8.8.2005, at light, Richard Bolster also Prawle Point, 18.8.2005, at light, Ivan Lakin.

2277 *Moma alpium* Osb. Scarce Merveille du Jour
Palmers Hill Copse, Kingscott, 21.6.2005, at light, Roy McCormick, also found at Torrington Common – a larva was found by Steve Hatch earlier this year. Both of these sites are new and this Biodiversity Action Plan species can now be found in four 1km squares along the Torridge valley and in the oak woodland around Kingscott, north of the main area.

2304 *Trachea atriplicis* Linn. Orach Moth
Crownhill, Plymouth, 6.7.2005, at light, J. Beswetherick. This is the third record for Devon. The other two were; West Hill, Ottery St. Mary, 4.8.2002 and Dawlish, 29.6.2003, both at light.

2316 *Cosmia affinis* Linn. Lesser-spotted Pinion
Brooking's Down Wood, Noss Mayo, 9.8.2005, at light, Roy McCormick. This is the first record since 1996.

2367 *Celaena haworthii* Curt. Haworths Minor.
Slapton reed beds, 10.8.2005, (identification by photograph). This is the fifth record for Devon.

2408 *Eublemma parva* Hb. Small Marbled
Bere Alston, 8.6.2005, at light, Tom Sleep.

2418 *Earias clorana* Linn. Cream-bordered Green Pea
Teignmouth, 24.6.2005, at light, Roy McCormick. Although this species can be found around Dawlish Warren and Exminster Marshes, it was strange to see this in my garden where their is no wetland or marsh for miles.

2455a *Catocala nymphagoga* Esp. Oak Yellow Underwing
Holcombe, near Teignmouth, 26.8.2005, at light, Roy McCormick. According to the published records, this is the fourth British record, but I understand a couple more were taken in the New Forest earlier in the year, however it is a first for Devon.

2466 *Lygephila pastinum* Treit. Blackneck
Braunton Burrows, 9.7.2005, at light, Steve Hatch. The last sighting of this species in North Devon, was Braunton Burrows, 29.6.19?1, with the last one in South Devon, 27.6.1999.

## Roy McCormick – New and good species seen in Scotland, 2005.

1073 *Olethreutes schulziana* Fab.
Meikle Elrick, 3.7.2005, during the day, Roy McCormick & Steve Hatch.

1300 *Crambus pratella* Linn.
Braemar, Clunie Lodge, 1.7.2005, at light, McCormick & Hatch, Roy and Steve.

1337 *Eudonia alpina* Curt.
Dalwhinnie, Coir nan Cisterchan, 4.7.2005, during the day, Roy McCormick & Steve Hatch.

1339 *Eudonia murana* Curt.
Braemar, Clunie Lodge, 1.7.2005, at light, Roy McCormick & Steve Hatch, not gen det, but early for *E. truncicolella.*

1573 *Aricia artaxerxes* Fab. Northern Brown Argus
Straloch Estate, 6.7.2005, during the day searching grass stems, Roy McCormick & Steve Hatch.

1694 *Scopula ternata* Schrank. Smoky Wave
Rothiemurchus Estate, picnic area, 2.7.2005, during the day, Roy McCormick & Steve Hatch

1743 *Entephria flavicinctata ruficinctata* Guen. Yellow-ringed Carpet
Pass of Drumochter, Allt an Stalcair waterfall, 5.7.2005, during the day, around 25 larvae on stonecrop, Roy McCormick & Steve Hatch.

1965 *Glacies coracina* Esp. Black Mountain Moth
Dalwhinnie, Coir nan Cisterchan, 4.7.2005, during the day, around 20 that flew as soon as the sun came out, with a couple being found sitting around, Roy McCormick & Steve Hatch.

2056 *Parasemia plantaginis plantaginis* Linn. Wood Tiger
Braemar, Meikle Elrick, 3.7.2005, one female which laid over 100 eggs which were bred through, Roy McCormick & Steve Hatch.

2250 *Blepharita adusta* Esp. Dark Brocade
Devils Elbow, Glen Shee, Braemar, 5.7.2005, at light, Roy McCormick & Steve Hatch. The species was taken wherever we run lights.

2447 *Syngrapha interrogationis* Linn. Scarce Silver Y
Brerachan Forest, 4.7.2005, at light, Roy McCormick & Steve Hatch.

## Variations taken this year

1738 *Epirrhoe alternata alternata* Müll. Common Carpet
This specimen taken at light, Tavistock, 16.8.2005, Fred Slatter, and passed to me for identification.

1751 *Lampropteryx otregiata* Met. Devon Carpet
Taken on the undercliff, near Lyme Regis (Devon), 15.8.2005, at light, Roy McCormick.

1759 *Ecliptoptera silaceata* D.& S. Small Phoenix
This strange form taken in my garden at Teignmouth, 26.5.2005, Roy McCormick.

2088 *Euxoa clavis* Hufn. Heart & Club.
Taken in my garden at Teignmouth, 21.6.2005, Roy McCormick. One of the many variations of this moth I get in Devon.

## David Oram – Some Lepidoptera from the area around San Gimignano, Tuscany, Italy, during 9-13 june 2005

Oak Hawkmoth, *Marumba quercus*
6-Spot Burnet, *Zygaena filipendulae*
5-Spot Burnet, *Zygaena trifolii*
*Zygaena carniolica*
White-letter Hairstreak, *Satyrium w-album*
Holly Blue, *Celastrina argiolus*
Marbled Fritillary, *Brenthis daphne*
Knapweed Fritillary, *Melitae phoebe*
Comma Butterfly, *Polygonium c-album*
Marbled White, *Melanargia galathea*
Darker form – Italy, English specimens for reference
Southern White Admiral, *Limenitis reducta*
Large Tortoiseshell, *Nymphalis polychloros*
Small White, *Artogeia rapae*
Small Heath, *Coenonympha pamphilus*
Clouded Yellow, *Colias crocea*
Bath White, *Pontia daplidice*
Black-veined White, *Aporia crataegi*
Lulworth Skipper, *Thymelicus acteon*
Meadow Brown, *Maniola jurtina*

## Sarah Patton – Exhibit 1. Insects from Iping Common, West Sussex, August/September 2005.

*Eutolmus rufibarbis* – One of our largest brownish species of robberfly. Confined to sandy districts in south-eastern Britain.

*Ammophila pubescens* – Restricted mainly to the southern counties of England. Found on dry heathiands, prey usually lepidopteran larvae.

*Ammophila sabulosa* – Found through much of Britain. found on heathland. dunes and other coastal areas.

*Oxybelus uniglumis* (two, with dipteran prey) – Widely distributed, usually associated with open patches of bare, loose sand.

*Cerceris rybyensis* – Often locally common in southern England, associated with sandy soils, both coastal and inland. Preys on bees of various genera.

*Cerceris ruficornis* – Sometimes locally common on sandy heathland in southern England. Preys mainly on adult weevils.

*Philanthus triangulum* (with Honey Bee prey) – The 'Bee Wolf'. Now common on the West Sussex heaths.

*Nomada buccata* – An uncommon solitary bee.

*Alydus calcaratus* – Found in the south on heathland and other dry habitats. The red abdomen is exposed in flight.

*Prionus coriarius* – Usually nocturnal, but this one was blundering through the heather in the middle of the day! The larvae develop in tree roots.

*Smicromyrme rufipes* – Restricted to south-east England found in open sandy areas in warm sunny situations. A parasitoid of ground nesting wasps and bees.

**Sarah Patton – Exhibit 2. *Hyphorala testudinaria* new to Britain**

On 29th May 2005, this specimen of *Hyphorala testudinaria* was trapped at Kingsham, near Chichester, West Sussex. It is the first British record and the proposed vernacular name is 'Patton's Tiger'. After exhibition this autumn, the specimen will go to the British Museum (Natural History)

**Peter Russell – A selection of Butterflies from southern Morocco taken in April 2005**

The display, which consisted of 17 species, showed some butterflies found during a visit to Morocco (mainly the Anti Atlas mountains) in mid-April 2005. The two *Spilia* species, *sertorius ali* and *doris daphne* demonstrated the marked differences in the undersides of both their fore- and hind-wings. *Carcharodus tripolina* was found in a dry scrubby area just behind the beach in Agadir and the examples shown were reared from a female, which oviposited on leaves of a species of Mallow (*Malva* sp.). Of the four Pierids shown, *E. charlonia* was generally common, the first broods of *E. belemia* and *E. ausonia* were almost over with the second brood just emerging but scarce and *A. belia androgyne* becoming worn. The examples of the latter species clearly show the typical characteristics of the subspecies found in the Anti Atlas: the wing pattern of the females resembling that of the males much more closely than do those of the type species and on the underside of the hind-wing the dark greenish marking usually present are almost absent in this subspecies. *Melitaea phoebe punica* was very widespread and these four specimens, among others were reared from a batch of ova laid by a captured female on a species of Hardhead. The black and white Satyrid, *Melanargia ines* was only seen at one locality on the north side of the Col du Kerdous at 1,700m. The most numerous family were the Lycaenids, of which eight species were displayed. *Cigaritis allardi* was only seen at two locations, as was *T. ballus,* a female of which was found in a Spider's web, *Thersamonia phoebus,* the Moroccan Copper, was more widespread and a captured female produced many ova, which were laid on the Knotgrass, *Polygonum equisetiforme.* A few *A. jesous* were found in one location flying around extremely spiny bushes of an *Acacia* sp., *Plebejus allardi* ssp. *estherae* was again found in only one locality where its larval food-plant, *Astragalus caprinus,* was noted. The two *Tarucus* species, *theophrastus* and *rosacea* were widespread but never numerous and only separable by an examination of their male genitalia, the female examples shown may not be correctly identified. The single female *P. abencerrargus* in the exhibit was taken on the north slopes of the Col du Kerbous.

**Malcolm Simpson – A small display of butterflies taken by Lionel Higgins in Iran, Turkey, Lebanon, Sweden, Austria and Crete**

They were given to me by Lady Dacie and came from the collection of the late Sir John Dacie who was a collecting colleague of Lionel Higgins.

**Clive R. Turner – Water beetles in southern Africa – some examples of endemism and conservation perspectives**

The southern African water beetle fauna is little known and extremely interesting both from taxonomic and conservation perspectives. The latest data indicates that 50% of the water beetle fauna of South Africa comprises of endemic species, this from a fauna of *c.*530 species is an astounding statistic. Add to this the provisional IUCN conservation status statistics and the fauna becomes more important with over 27% IUCN endangered or higher. This exhibit was intended to provide a few example species of both taxonomic and conservation interest:

*Darwinhydrus solidus* Sharp 1881 (DYTISCIDAE): First collected by Darwin on his brief visit to the Cape Peninsula in 1836 this species was held undescribed in the collection of Laporte de Castlenau until Sharp described it in his extensive monologue of 1882.The genus is monospecific (contains only one species) and is restricted to the Western Cape of South Africa (Western Cape endemic). It may be collected in seasonal and more permanent slow flowing and still waters amongst the acidic and nutrient poor Ericaceous and Fynbos vegetative deposits. The species itself is of low conservation status but the genus remains an important part of the World water beetle fauna and as such merits conservation attention to ensure it remains unthreatened.

*Torridincola rhodesica* Steffan 1964 (TORRIDINCOLIDAE) I recorded this southern African endemic as new to South Africa in 199⁻ (from two sites: Natal and Gauteng). Unusually this IUCN Vulnerable species also occupies madicolous habitat in Zimbabwe and is probably classified erroneously considering the likelihood of under recording as an artefact of its unusual habitat. This material was confirmed by the late Sebastian Endrödy-Younga.

*Prostethops megacephalus* (Boheman 1851) (HYDRAENIDAE): Currently only known from the Cape Penninsula this endangered and endemic species has only been located on Table Mountain, Hout Bay and Kommetje. Still present in the area in 199⁻ when I visited it was

located in pond net samples from thoroughly agitated stream margins, in wet moss at the edge of a trickle and from rocks at the side of a small stream pool. It has also been recorded in a running stream with *Glyceria tierbos* in streamlet, small rock pools and in humus. The current status of this species is a continuing concern.

*Rhantus (s.str.) cicurus* (Fabricius 1787) (DYTISCIDAE): This Cape endemic species is widespread in the Western Cape of South Africa but seldom occurs in numbers. It is the largest of the Cape endemic water beetles. In life it exhibits striking pale longitudinal stripes surrounded by mottled grey tones.

*Rapnus raffrayi* Grouvelle 1899 (DRYOPIDAE): This unusual genus is endemic to Southern Africa and the species is a Cape endemic restricted to the Western Cape. It is characteristic of upland acidic, Fynbos surrounded, seasonal or permanent streams and because of its broken distribution is a conservation priority species.

**Paul Waring – 2 exhibits – The new "Moonlander" design of light-trap**

This exhibit shows the new "Moonlander" design of light-trap now being supplied by Worldwide Butterflies Ltd and some test results in which I compared the design with a more conventional arrangement of the equipment. The two most novel features of the Moonlander design are that the entrance funnel to the trap is at the base and the light is within the body of the trap (Photos 2 & 3). By turning the trap up-side down it is an easy matter to operate it in the more conventional arrangement, with entrance funnel at the top and light mounted in the funnel (Photo 1). In my tests the trap was operated in both set-ups alternately over five pairs of nights in August and September 2005, with the results summarised in the accompanying Table. This shows that in the "entrance at base, light in trap" set-up the trap caught roughly half as many moths as in the conventional arrangement, some-times less. It also tended to catch somewhat fewer species, although at the time of year of the tests, the reduction in species was less marked. One species in particular, the Large Yellow Underwing *Noctua pronuba,* appeared to be much less successful in entering the trap and being captured in the "entrance at base" arrangement, with the catch of this species sometimes reduced by 75%, as can be seen in the Table.

My intention is to write up these results more fully as an illustrated article for the *Bulletin.*

I would like to thank Robert Goodden for kindly supplying a "Moonlander" trap for me to examine, following on from our discussions at its effective launch at the AES annual exhibition in 2004.

### *Catocala atocala* Brou – first records for the state of Kentucky, USA

Paul Waring (PW) (AES 4220), William Black, Jr., Kevin, Craig & Ian Segebarth , Leroy Koehn and Charlie Covell

At the AES annual exhibition on 2 October 2004 PW exhibited a selection of North American *Catocala* species seen on his expedition to Kentucky in July-August 2004, at which time some species had yet to be finally identified. It is our pleasure to report that one of these species has proved to be *Catocala atocala* Brou which is exhibited here. At the time of its capture, this appeared to be the first time this species had been seen in Kentucky and its discovery created great interest within the Society of Kentucky Lepidopterists. This caused member Leroy Koehn to re-examine a specimen of an unusual *Catocala* he had captured back in 2001 and this has now been confirmed as the first Kentucky record for *C. atocala*. The full details are as follows:

In the spring of 2004 Bill Black scouted potential collecting sites for moths along the bluffs of the Mississippi River that would be new for his band of Kentucky lepidopterists based in Paducah, in preparation for PW's visit in late July and August, aware that *Catocala* species would be the main target. On 4 August 2004 Bill, joined by Kevin, Craig & Ian Segebarth and PW, set up six UV black-light light-traps (much like British Heath traps) in woodland along these bluff tops, with views of the mighty Mississippi beyond. The floodplain area of the river and the precipitous soft-rock cliffs that lead down to it have much semi-natural vegetation, culminating in light woodland on the tops that has evidently been logged for timber and firewood, probably many times. The undergrowth was dense. In the morning two of the traps held *C. atocala*, a total of six individuals. The two light-traps were set just off the road on both sides of Columbus, in the north-west corner of Hickman County. This was the first time any of us had seen *C. atocala* before, with its distinctive whitish areas in the central part of the forewing by the trailing edge, and we could not find it in the standard Field Guide to the Eastern Moths (Covell, 1984) nor in Sargent (1976) which added to the excitement. Once determined, initially from Internet sources, it was found not to be listed for Kentucky in Covell (1999).

Descriptions over the telephone to Leroy Koehn reminded him of an odd *Catocala* he had collected in Paducah, McCracken County, Kentucky, on 8 September 2001 (see Kentucky Lepidopterist 28 issue 1). Bill and the Segebarths remember Leroy catching it and later bringing the mounted specimen to the 2001 November meeting of the Society of Kentucky Lepidopterists. The specimen was produced again for the November 2004 meeting and proved to be an exact match. At the time of writing, this appears to be the first taken in Kentucky, but it is possible that other specimens might be languishing in collections unrecognised and unreported. From our results it would appear that we have discovered an overlooked resident population, whilst previously it might have been considered a vagrant on the basis of Leroy's singleton. Both Paducah and Columbus are within the Jackson Purchase of western Kentucky. Leroy also has two specimens that he collected in Mississippi in 1996. Interestingly, these are much darker in appearance than our Kentucky specimens.

Once again, PW would like to thank all the above, and Richard Henderson, for their assistance in making this expedition possible, and for all the help with identifications and other follow-up work.

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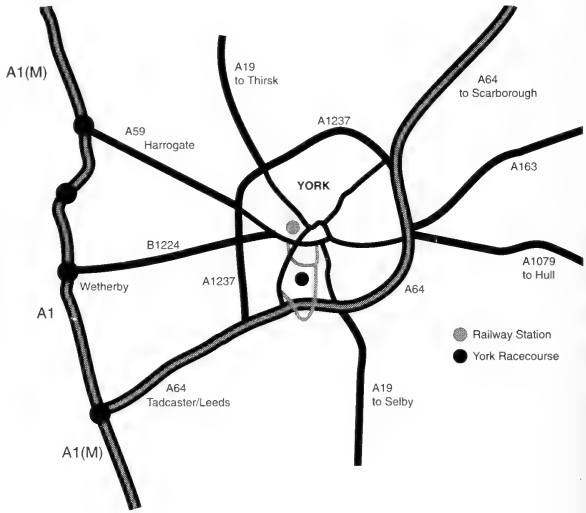


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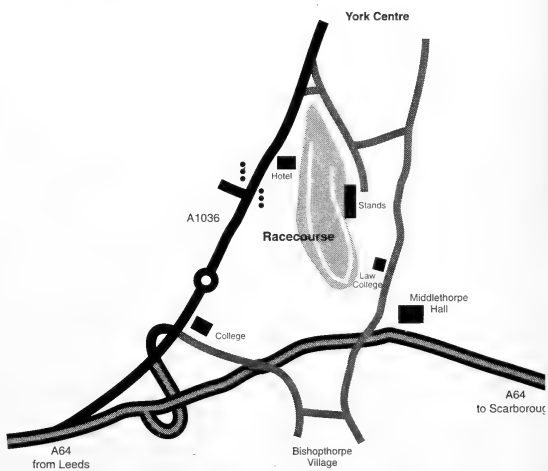


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