

ES 36A

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of the Amateur Entomologists' Society



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Moonlander Moth trap

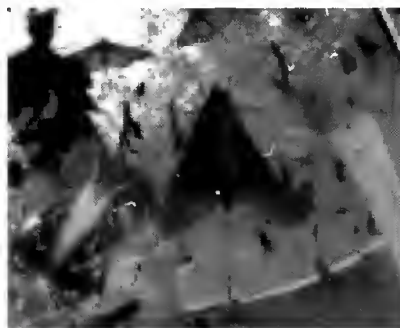
Folds totally flat and is contained in a convenient slim shoulder bag. Very lightweight.

The Moonlander turns the principle of moth trapping upside down! Moths enter from the bottom and cannot escape through the top.
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Both trap and light are total innovations by Robert Goodden.

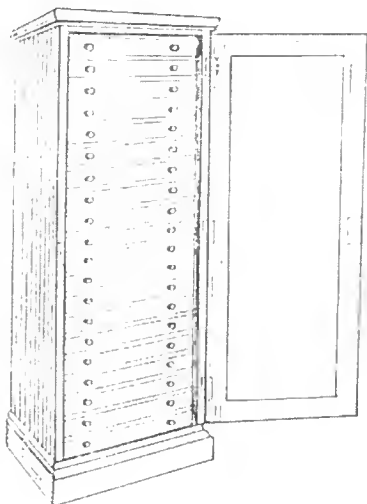
They are tried and tested in Europe and the tropics. In good conditions the results are spectacular.

Worldwide Butterflies website offers **Livestock and Equipment for breeding and study. Specimens for specialist collectors will be added as available.** The system enables you to see exactly what is currently available as the season changes. From time to time there are special **Sale Offers** of equipment, books, livestock and specimens - an ever changing situation.

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Members price £ 3.80

Preparing and maintaining a collection of Butterflies and Moths
by P. May and M. White. A practical manual detailing the various methods used to prepare specimens for a collection, from killing methods, setting the specimens and repairing damaged ones, to storage and preservation, including pest prevention and cure. 24 pages, 4 figures and 5 plates. (2006) **£4.85**
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The Hymenopterist's Handbook by Dr C. Betts *et al.*
2nd edition dealing with the history of their families, classification and structures; natural history; studying, collecting, breeding, attracting and preserving Hymenoptera. Appendices include keys to the families. 214 pages with numerous tables, keys and figures (1986) **£ 11.45**
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Revised Flight Tables for the Hymenoptera
Revised flight tables for the Hymenoptera giving, wherever possible, times, location, flower visits and some indication of distribution and abundance. 24 pages (1988) **£ 3.10**
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A Coleopterist's Handbook
Edited by J. Coater & M.V.L. Barclay. *The Coleopterist's Handbook*, is now available as a fully revised and expanded fourth edition. Nomenclature has been brought in line with current use, collecting/curatorial methods reflect best practice and plant/beetle and beetle/plant lists are included together. Recent additions to the British fauna, modern and traditional techniques are included. All advice and comment given in the book is based upon collective years of practical experience of both curatorial methods and field craft: beetle family chapters have each been written by an internationally recognised authority. 496 pages including 32 colour plates. **£ 54.00**
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A Silkmoth Rearer's Handbook by B.O.C. Gardiner
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A Dipterist's Handbook by A.E. Stubbs, P.J. Chandler and others
A practical handbook for both the beginner and the initiated on collecting, breeding and studying the two-winged flies. Describes equipment, trapping, preservation, habitat, plant and animal associations and behaviour. Includes a detailed chapter on larval stages with an illustrated key to families. An essential book for the keen Dipterist. 260 pages with drawings of larvae and equipment (1978, reprinted 1996) **£ 14.20**
Members price £ 10.60

Practical Hints for Collecting and Studying the Microlepidoptera
by P.A. Sokoloff. A practical manual for those interested in the smaller moths, describing techniques for collecting adult moths, collecting immature stages, breeding, killing, setting and mounting. A list of useful books and journals as well as details of societies and suppliers is included. 40 pages, 11 figures (1980) **£ 4.20**
Members price £ 3.15

Rearing and Studying Stick and Leaf-Insects by P.D. Brock
Specifically intended for beginners, although it is also suitable for experienced Phasmid enthusiasts, it is one of the few guides to rearing that features the majority of the culture stocks available. 22 species in detail. The informative text is complemented by 8 colour plates, 14 black and white plates and 29 figures. (New edition, 2003) **£ 11.20**
Members price £ 8.20

The Study of Stonellies, Mayflies and Caddisflies by T.T. Macan
A comprehensive guide to collecting and studying the biology and ecology of these aquatic insects. 44 pages, 10 figures and bibliography (1982) **£ 4.20**
Members price £ 3.15

Breeding the British Butterflies by P.W. Cribb
A practical handbook covering all aspects of butterfly breeding, including general techniques, equipment and hints on how to breed each of the British species. 60 pages, 6 figures, 5 plates. Revised (2001) **£ 5.20**
Members price £ 3.85

Practical Hints for the Field Lepidopterist by J.W. Tutt
Written at the turn of the century, this book has been reprinted because of its scarcity and value to students of Lepidoptera. It gives a complete month by month guide to which species and stages of macros and micros to look for and how to find them. Also contains a biological account of the early stages and how to keep, rear, photograph and describe them. 422 pages. Hardback. (Reprinted 1994) **£ 24.00**
Members price £ 18.30

An index to the modern names for use with J.W. Tutt's Practical Hints for the Field Lepidopterist by B.O.C. Gardiner
A valuable cross-reference guide between the scientific and English names used in the early 1900s and the present time. **£ 4.70**
Members price £3.50

A Guide to Moth traps and their use by R. Fry and P. Waring
The first sections deal with the measurement and properties of light leading into the types of lamp available and the electrical circuits needed to operate them. The next sections give details of the construction of the most popular traps used in the UK. The last half deals with the practical use of traps in the field including where and when to trap, limitations of traps and their relative performance. 68 pages, 21 figures, 15 plates (1996) **£ 6.85**
Members price £ 5.05

The Amazing World of Stick and Leaf Insects by Paul D. Brock
A superb, comprehensive guide, for all those intrigued by these groups of insects. Topics covered include structure, fascinating facts, life history and development, defence behaviour, enemies, collecting, breeding (including trouble shooting), preserving, taxonomic studies, important collections in Museums etc. around the world and elaborate stories, beliefs and poems. Also outlines the major known species around the world on a regional basis. A section on Fossils is included. Includes a comprehensive glossary of the technical terms used in the description and classification of stick and leaf-insects. Hardback A5, 184 pages, 46 figures, 26 black and white plates and 40 pages of colour plates (containing 83 photographs and 4 drawings/paintings of insects and their habitats). (1999) **£ 18.90**
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Rearing Parasitic Hymenoptera by M. Shaw
This booklet provides information on the parasitic Hymenoptera to enable successful studies to be made of this little understood group of the British insect fauna. Details are given on the general biology of parasitic wasps, rearing principles, efficient rearing practices and detailed methods of dealing with adult wasps. 52 pages, 4 colour plates (New edition - 2001) **£ 5.70**
Members price £ 4.20

Larval Foodplants of the British Butterflies by Peter May
A comprehensive compilation of the known larval foodplants of our native and immigrant butterflies. Also including 'How to Encourage Butterflies to Live in Your Garden' by the late Peter Cribb 62 pages. (2003) **£ 7.40**
Members price £ 5.45

The larger water beetles of the British Isles by Peter Sutton
For those who love the spectacular larger water beetles of the British Isles, this is the publication that you have been waiting for! It is the only modern publication with colour illustrations of all of our aquatic coleopteran megafauna and it provides the most up-to-date distribution maps revealing their current distributions. Jam-packed with fascinating details of their life-histories, this book covers 11 species including the 6 native 'Great Diving Beetles' and the 'Silver Water Beetles'. It is also copiously illustrated with text figures and has much additional information including details of observed climate-induced range changes and the conservation measures required to ensure their continued survival. **£ 11.90**
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Glossary for the Young Lepidopterist
6 pages, 2 figures. (1951) **£ 1.05**
Members price £ 0.90

A Label List of European Butterflies
20 pages. (Revised 1981) **£ 2.35**
Members price £ 1.85

Some British Moths Reviewed
Aid to the identification of some of the more difficult species. Reprinted from the *Amateur Entomologist* Vol. 5 (1941) and a *Guide to the Critical Species of Lepidoptera*, reprinted from *Entomologists' Gazette* 1969-72. 64 pages, 6 black and white plates, numerous figures (1985) **£ 4.45**
Members price £ 3.35

Butterflies of Cyprus 1998 (Records of a years sightings) by Eddie John
Observations of the 44 species of butterfly found on the island in 1998 including notes on each species and distribution maps. 46 pages (2000) **£ 4.30**
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Collecting Het Bugs (Hemiptera: Heteroptera)
12 pages (including 2 plates). (1946) **£ 1.20**
Members price £ 1.00

Collecting Clearwings
12 pages (including 2 plates), 4 figures. (1946) **£ 1.10**
Members price £ 1.00

Collecting Lacewings
9 pages, 8 figures, 5 plates. (2nd edition 1976) **£ 2.25**
Members price £ 1.75

An Amateur's Guide to the Study of the Genitalia of Lepidoptera
16 pages, 15 figures. (1973) **£ 3.10** *Members price £ 2.35*

Rearing the Hymenoptera Parasitica
16 pages, 1 plate, 10 figures. (1974) **£ 2.55**
Members price £ 2.00

Rearing Crickets in the Classroom
12 pages, 2 plates (1986) (Reprinted 1993) **£ 2.10**
Members price £ 1.65

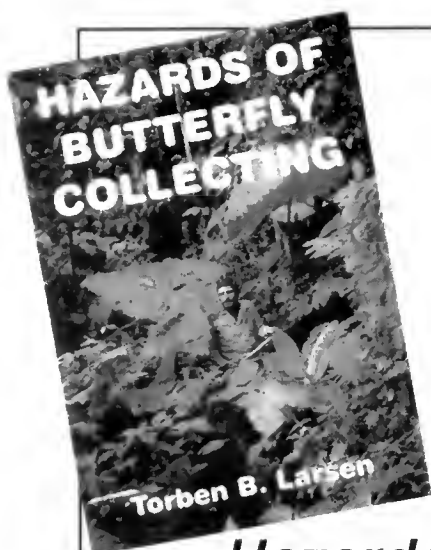
Guidelines for Entomological Site Surveys
Published on behalf of the JCCBI. 7 pages (2000) (Reprinted 2003) **£ 3.10**
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The Journal of the Entomological Exchange and Correspondence Club 1935-1936
An AES Jubilee Publication. Fascinating reprint of the very first volume of the AES journal. 100 pages. **£ 4.20**
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Bulletin Cover



This month's cover picture shows a specimen of *Bombus pascuorum*, the Carder Bee – so called because of the way it knits leaf litter together to make its nest on the ground. This smallish (16mm) bumble bee is brown all over, without any distinctive coloured bands, but its dark pollen baskets distinguish it from similar species. It is to be found all over Britain, in a wide range of habitats.

The photo was taken by Dr. David Skingsley. More of his work can be found on his website "The Bug Botherer's natural history picture archive from near Alsager in South Cheshire" <http://www.bugbotherer.org.uk/>

We are most grateful to him for allowing us to use his pictures in this and the next few issues of the *Bulletin*.

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Editors: Dr P. Wilkins & M. Ffoug

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Editorial

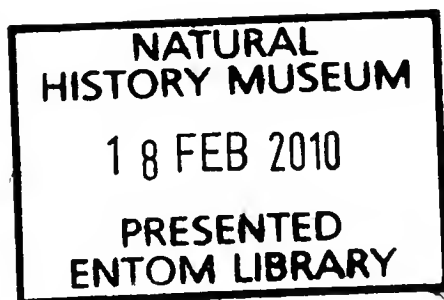
This is the first *Bulletin* of a new decade, and an occasion to look both to the future and to the past. As it says in the *I Ching*, the only thing that is certain is change, and therefore we should study change.

The biggest change confronting us all is Global Warming, with its drastic effect upon the natural world. Awareness of this is spurring preventive action, but it is very late. I have reproduced in this *Bulletin* an article on vanishing butterflies by one of our most senior members, Brian Gardiner, which was first published in 1974 – over twenty five years ago. Even then he wrote “There is well documented evidence that over the last sixty years there has been a contraction of the polar ice-cap . . . this has been accompanied by a northward movement of animals and plants.” Recorders today continue to observe this.

Attitudes to the study of insects are changing, too. The AES condones responsible collecting, as laid out in the JCCBI Code for Insect Collecting, but it is a pleasure to see members relinquishing the net in favour of the camera. There are some wonderful photographs illustrating this in this *Bulletin*, and Guy Broome has provided us with some very helpful notes on photographic technique.

My thanks go as usual to everyone who has contributed to this issue, and the Editors are always glad to receive observations and articles from beginners and experts alike.

Martin Hough





Society Matters

International Year of Biodiversity

Huge changes in the natural environment have taken place during the 75 years that the AES has been in existence. In 2010, our 75th anniversary, the Society is pleased to be a supporting partner of the International Year of Biodiversity, a United Nations initiative to highlight the importance of the diversity of life on earth, and of its value to man. Further details of the IYB may be found on the Convention on Biological Diversity website <http://www.cbd.int/2010/welcome/> and IYB activities planned for the UK are listed at <http://www.biodiversityislife.net/>.

The Hammond Award

Members are reminded that articles published in the *AES Bulletin* are considered for this award, which was initiated in March 1982 in memory of Cyril O. Hammond (of Colyer and Hammond fame). The Award is given for the best contribution to the *AES Bulletin* on the theme of British Insects, in any one year. The winner will receive a Certificate and £100.

Data Protection Act

Members should please note that all personal information supplied to the Society is treated in accord with the requirements of current data protection legislation and will be used only for the purposes of administering the Society. We will not divulge personal information to any third party unless we are legally obliged to do so. It is technically possible for us to generate membership lists but there are no plans to do so during this membership year.

AES 75th Anniversary Members' Day

This year's Members' Day will be held on **Saturday 24th April** at the Angela Marmont Centre for UK Biodiversity, the Darwin Building, Natural History Museum, Cromwell Road, London SW7 5BD. The proceedings will formally commence with the AGM at midday.

The recently opened Angela Marmont Centre aims to act as a facility to enable amateur naturalists and societies to study wildlife throughout the year. Entomologists can currently use the Centre in two main ways. Firstly, there is an identification and advisory drop-in service available on Thursdays, Fridays and Sundays between 10.00 am and 5.30 pm. Secondly, you can book a visit to the Centre to do your own research.



using the study spaces, physical and online library resources and the 10,000 drawers of plants and animals (including moths and butterflies) provided. The Centre also offers opportunities to take part in 'Citizen Science' projects. Further information will be provided during Members' Day, and for those with internet access further details may also be found at the following web address: <http://www.nhm.ac.uk/visit-us/darwin-centre-visitors/marmont-centre/index.html>

Members' Day will include a series of talks on entomology and invertebrate conservation, including the Third Annual Leonard Tesch Lecture which this year will be delivered by AES President Dr Robin Wootton Hon FRES, on the subject of 'How and why do butterflies fly?'

Space has been allocated for members to bring along specimens or other entomological items they would like to exhibit on the day. Historical items are particularly welcome this year. 'Behind-the-scene' tours of the Museum's entomological collections will be offered throughout the afternoon, and there will be a workshop and a children's 'Crafty Corner' insect crafts table. Other display tables including one for National Insect Week will be present in the Cocoon area of the Darwin Centre, and refreshments will be available for members and their guests.

We plan to launch a new children's book on the day, in the 'Victorian Story Corner'. The working title of the book is *The scary adventures of Basil the Beetle* and the author is Sonia Copeland Bloom, who will be present to sign copies. There will be a reading of the book by one of Sonia's children, both of whom are actors.

Notice of AES Annual General Meeting

This year's AGM marks 75 years of the AES and will take place at 12:00 midday on 24th April at the Neil Chalmers Lecture Theatre, the Angela Marmont Centre, Natural History Museum, Cromwell Road, London SW7 5BD, immediately prior to our Members' Day.

Following a successful term as our President, Dr Robin Wootton has agreed to be the AES Council's nominee for President for the period 2010-2011. Miss Kara Majerus was co-opted as a member of Council at our December meeting and is therefore subject to election at the AGM. The following Council members will retire by rotation and are willing to stand for re-election: Colin Hart; Martin Hough; Jacqueline Ruffle; Dr Phil Wilkins.

Council members standing for election / re-election or as Officers of the Society at the 2010 AGM are therefore as follows – President: Robin Wootton; Secretary: Dafydd Lewis; Treasurer: Peter May; Conservation



Secretary: David Lonsdale; *Bulletin* Editors: Phil Wilkins and Martin Hough; General Editor: Jacqueline Ruffle; Exhibition Secretary: Wayne Jarvis; Advertising Secretary: Peter Hodge; *ICN* Editor: David Lonsdale; *Wants & Exchange* Editor: Peter May; Youth Secretary: Kieren Pitts; *Bug Club Magazine* editors: Dafydd Lewis, Kieren Pitts; Webmaster: Kieren Pitts; Council Member: Kara Majerus. Members of Council are also Charitable Trustees of the Society. There are currently four trustee vacancies, and the role of Habitat Conservation Officer is vacant. Nominations for Council, including anyone wishing to contest any of the above posts, are invited before or at the AGM. Nominations should be submitted by two members with the prior consent of the nominee.

Forthcoming Events

20 Feb - 21 March 2010

Haworth Art Gallery, Manchester Road, Accrington, Lancashire BB5 2JS Tel. 01254 233782. Open 2.00 pm to 5.00 pm Wednesday, Thursday, Friday and Bank Holidays, 12.00 pm to 4.30 pm Saturday and Sunday. (All the paintings from the school workshops will be on show here as well)

Saturday 24th April 2010

AES Members' Day & AGM.

Angela Marmont Centre for UK Biodiversity, The Darwin Building, Natural History Museum, London.

Detailed information appears elsewhere in this *Bulletin*.

1 April - 4 July 2010

Steward's Gallery, Clitheroe Castle Museum, Castle Hill, Clitheroe, Lancashire, BB7 1BA. Tel 01200 424568. Open daily, 11am - 5pm, admission free.

The Bug Project, by artist Pat Ellacott, is sponsored by the Arts Council and is a series of large drawings of insects affected by environmental changes in the UK. The aims are to show that bugs are fascinating, not fearsome and are important indicators of environmental change. The work has been used to stimulate very successful art workshops in schools.

www.patellacott.co.uk patellacott@btconnect.com 01200 426297





Launch of the Entomologists' Glossary

<http://www.amentsoc.org/insects/glossary/>

by Kieren Pitts (10563)

The terms and phrases used by entomologists can be strange and confusing when you first read them or hear them being used. To help entomologists, both expert and amateur alike, the Amateur Entomologists' Society is delighted to announce the launch of our online Entomologists' Glossary - <http://www.amentsoc.org/insects/glossary/>

The glossary includes more than 370 words (over 550 if you include synonyms) an entomologist might be familiar with, and some you may not have heard before. We think this makes it *one of the largest online glossaries for entomologists in the world!*

Each term is defined on two levels:

A brief definition on a page with other terms beginning with the same letter. For example, all the terms beginning with A.

The screenshot shows the website interface for the Amateur Entomologists' Society. At the top left is the society's logo. A navigation menu includes links for About us, Membership, Bug Club, Publications, Events, **Insects**, Shop, and Members. There is also a search bar with a 'Go!' button. The main content area shows the breadcrumb path: You are [Home](#) > [Insects](#) > [Glossary](#) > Terms beginning with 'A'. The title of the page is 'Glossary terms beginning with A'. Below this is a section 'Browse terms by A-Z' with a row of letters: **A B C D E F G H I J K L M N O P Q R S T U V W X Y Z**. The first term listed is 'Abdomen', defined as 'one of the three main body parts of an insect and one of the two main body parts of spiders', with a link to 'Read more on: [Abdomen](#)'. The second term is 'Acari', defined as 'a sub-class of Arachnids that are more commonly known as mites and ticks', with a link to 'Read more on: [Acari](#)'. The third term is 'Acarina', defined as 'cf. [Acari](#) - a sub-class of Arachnids that are more commonly known as mites and ticks.' On the left side of the page, there is a vertical menu with links for Insects, What bug is this?, Insect fact files, Insects & Man, Caresheets, Become an entomologist, Conservation, Biodiversity & biological recording, and **Glossary**.



Each brief definition then links to a more detailed, illustrated encyclopaedia style definition. Each detailed definition page also lists related terms and provides links to other related pages on the AES web site.

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Glossary

You are [Home](#) > [Insects](#) > [Glossary](#) > Definition of Acari

Definition of Acari

The Acari are a sub-class of the class Arachnida and are more commonly known as the mites and ticks. Ticks are exclusively ectoparasitic but there are both free living and parasitic mites.

The specific branch of science devoted to the study of the Acari is called Acarology.



An overhead view of the *Lorryia formosa* mite. Magnified about 200x
Photograph by Erbe & Pooley, United States Department of Health and Human Services

Other names for (or types of) *Acari* include

- [Acarina](#)

Related terms

- [Arachnid](#)
- [Lyme disease](#)

Glossary terms are also grouped together so, for example, you can browse all the terms within the glossary that are related to entomological equipment: <http://www.amentsoc.org/insects/glossary/groups/equipment>

Throughout the AES web site we have linked words that appear in the text of our pages to the relevant entry in the Entomologists' Glossary.

We hope you enjoy using the Entomologists' Glossary and find it useful. If you have any suggestions or want to contribute a definition then please contact us (contact@amentsoc.org).



National moth mapping with Moths Count

by Dr. Zoë Randle

Butterfly Conservation, Manor Yard, East Lulworth, Wareham, Dorset, BH20 5QP.

It's official – online provisional distribution maps from the new National Moth Recording Scheme (NMRS) are now available on the revamped Moths Count website (www.mothscount.org). These provisional maps will regularly be updated as and when additional datasets are submitted to the NMRS. The NMRS database presently holds 6.1 million records from 86 vice-counties (not all of which are currently shown on the online maps).

The last time national distribution maps were published was 20 years ago; these are now out of date. Additionally, maps of the Geometrids (c. 300 species) have never been publically available; the NMRS has produced the first widely available maps for this moth family. We wish to thank individual moth recorders and County Moth Recorders for making the production of these maps possible through submission of their moth records.

You can contribute to these valuable maps (which will play a vital role in assessing the changing status of species) simply by submitting your records via your County Moth Recorder. By considering the rarity of each moth and, more importantly, whether the distribution of a species is increasing or declining over time, conservation priorities can be determined and action directed to the species at greatest risk.

The new Moths Count website, which is much improved, is a great resource of interesting moth-related information. Details about moth ecology, identification, conservation and moth recording are available, as well as a downloadable moth recorders' handbook packed full of information for people new to moth recording. Contact information for all County Moth Recorders and information about Moths Count training events are also on the website. We hope you find it useful.





Nothing in Kent, 2009

by Totty Steele 4106

57, Westfield Road, Barnehurst, Kent D.17 6LR
t.steele@ntlworld.com

I have been actively moth recording in the field for many years now and this article consists of brief descriptions of my exploits in Kent during 2009, for the interest of members. Traps used are home-built Skinner types constructed of aluminium. One has two vertical mounted 40 watt Actinic U tubes, whilst the other is fitted with the standard 125 watt MV lamp. Both are operated on sheets.

My first trip of the season was on February 17th to Mereworth Woods, an MOD Training Area near Wrotham, under rather mild conditions. With the heavy snow and low temperatures a couple of weeks before, I was not expecting much. How wrong I was! Trapping commenced at 1750hrs and immediately a Satellite (*Eupsilia transversa*) and a Chestnut (*Coenotropa vaccini*) arrived at the Actinic trap, with Chestnut and Pale Brindled Beauty (*Phigalia pilosaria*) at the MV. After approximately 40 minutes the MV bulb failed, but not before attracting Dark Chestnut (*Coenotropa ligula*) and March Moth (*Alsophila aescularia*). A brief shower passed and then Pale Brindled Beauties started to arrive at the Actinic, by the dozen. By the time I stopped at 2000hrs 43 had been recorded, and among them were two Small Brindled Beauties (*Apocbima bispidaria*). Other species noted were Spring Usher (*Agriopsis leucophaearia*), March Moth and *Tortricodes alternella*. Total for the night was 132 moths of eight species, a good start for the season.

It was to White Hill on 25th March. This is a Butterfly Conservation reserve in the Darent Valley near Sevenoaks. Although it started nice and mild it soon began to cool. Only the Actinic trap was in use and first arrivals were Chestnut and the micros *Tortricodes alternella* and *Agonopterix heracliana*, the latter being a new addition to the site list. In two hours a total of six species were recorded, with the others being Satellite, Hebrew Character (*Orthosia gothica*) and Pale Brindled Beauty.

I returned to Mereworth Woods on March 11th, to an area never trapped before. The location was found a few weeks previously on a daytime visit. As I made my way through the wood an army vehicle suddenly appeared and the place was full of troops! Luckily, after chatting to an officer, I found that they were not carrying out any training near to where I was working. The trap was situated at a wide track junction, and switched on at 1830hrs. First to arrive were



Twin-spotted Quaker (*Orthosia munda*), Satellite and Chestnut. Next came Common Quaker (*Orthosia cerasi*), Yellow Horned (*Acbyla flavicornis galbanus*), March Moth and Small Quaker (*Orthosia cruda*). At the night's end, 91 moths of nine species were recorded, the others being Hebrew Character and *Tortricodes alternella*. My next outing, on 1st April, was to Hollow's Wood, a Woodland Trust site near Shoreham. I arrived at my usual location to find that there was a bit of a breeze coming across the top of the hill, and so set up the Actinic trap lower down the track, where it was calm. First to arrive were Engrailed (*Ectropis bistortata*), Satellite, Early Thorn (*Selenia dentaria*), Chestnut, Early Grey (*Xylocampa areola*) and Shoulder Stripe (*Anticlea badiata*). Next arrivals were Twin-spotted Quaker, Common Quaker, March Moth, Clouded Drab (*Orthosia incerta*), Small Quaker, Early Tooth-striped (*Trichopteryx carpinata*), Dark Chestnut, Brindled Pug (*Eupithecia abbreviata*) form *hirschkei*, *Diurnea fagella* and *Eriocrania subpurpurella*. Thus ended another good night's trapping with 88 moths of 16 species.

My next outing, on 7th April, was to Dene Park Wood. This is a Forestry Commission site near Tonbridge. After driving deep into the wood, I set the trap up on a wide trackway. Although the moon was almost full, being so far under tree cover the catch was not affected. First arrivals were Engrailed, Satellite, Small Quaker, Twin-spotted Quaker and Common Quaker. Next came *Diurnea fagella*, with several examples of the melanic form seen in addition to the normal form. Other species noted were Hebrew Character, Chestnut, Clouded Drab, Lunar Marbled Brown (*Drymonia ruficornis*) and the micro *Eriocrania subpurpurella*. Total numbers for the night were 58 moths of 15 species. Next it was to Morden College on the edge of Blackheath in southeast London, on the night of 13th April. This is a private nursing home established in 1695 with extensive grounds. Although the night was nice and mild, for some reason there were not that many moths about, just 13 individuals of seven species being recorded, these being Nut-tree Tussock (*Colocasia coryli*), Common Quaker, Hebrew Character, Brimstone Moth (*Opisthograptis luteolata*), Pale Prominent (*Pterostoma palpina*) and the micros *Epinotia immundana* and *Eriocrania subpurpurella*.

21st April saw my second visit of the season to White Hill. The Actinic trap was set up on the open grassland. Although there was a clear sky, it was nice and warm, and the moths arrived in numbers. First were Twin-spotted Quaker, Common Quaker, Nut-tree Tussock, Lunar Marbled Brown, Hebrew Character, Early Tooth-striped, Early



Thorn, Waved Umber (*Menophra abruptaria*) and Scorched Carpet (*Ligdia adustata*). At the night's end 85 moths of 20 species had been recorded, the others being Least Black Arches (*Nola confusalis*), Small Quaker, Iron Prominent (*Notodonta dromedarius*), V-pug (*Chloroclystis v-ata*), Scarce Prominent (*Odontosia carmelita*), Yellow-barred Brindlle (*Acasis viretata*), Red-green Carpet (*Chloroclysta siterata*), Brindled Pug, *Plutella xylostella* and *Agonopterix arenella*. On 23rd April a daytime visit was made to Mereworth Woods. While wandering around the following moths were noted: Common Heath (*Ematurga atomaria atomaria*) and the micros *Adela reaumurilla*, *Dichrorampha plumbea* and *Phyllonorycter maestingella*, the latter two being new to the site list. On 24th April it was back to Morden College. First to arrive were *Emmelina monodactyla*, Brimstone Moth, Flame Shoulder (*Ochropleura plecta*), *Plutella xylostella* and Common Quaker. Then came Waved Umber, Iron Prominent, Nut-tree Tussock and finally a micro, *Aspilapteryx tringipennella*.

On 30th April a return visit was made to Mereworth Woods, to an area last trapped during 2007. The trap was set up on one of the firebreaks radiating out from the central troop shelter. First to arrive were Early Tooth-striped, Brown Silver-line (*Petrophora chlorosata*), Nut-tree Tussock, Pebble Hook-tip (*Drepana falcataria falcataria*), Narrow-winged Pug (*Eupithecia nanata augusta*), Brindled Pug and Early Thorn. Whilst I was having a 'walk round', I saw a moth by torchlight and netted it. Upon examination it was found to be one of the longhorns, *Nematopogon swammerdamella*. Arriving back at the trap, I found Red-green Carpet, Waved Umber, Early Grey, Scalloped Hook-tip (*Falcaria lacertinaria*), Lesser Swallow Prominent (*Pheosia gnoma*), Hebrew Character, Iron Prominent, Scarce Prominent, Grey Birch (*Aetbalura punctulata*) and Clouded Drab. At the night's end 25 species had been recorded, with the others being Oak Nycteoline (*Nycteola verayana*), Spruce Carpet (*Thera britannica*), and the micros *Neofaculta ericetella*, *Clepsia spectrana*, *Epinotia immundana*, *Esperia sulphurella* and *Micropterix caltbella*. On 6th May it was back to Dene Park Wood, this time to a different location within the site. First arrivals were Brown Silver-line, Oak-tree Pug (*Eupithecia dodoneata*), Purple Thorn (*Selenia tetralinaria*), Small White Wave, (*Asthenes albulata*) Nut-tree Tussock, Brimstone Moth and Barred Hook-tip (*Watsonalla cultraria*). With the evening being cloudy and very mild, I was kept busy logging each species, such as Brindled Pug, Common Quaker, Oak Nycteoline, Orange Footman (*Eilema sororcula*), Least Black Arches, Peach Blossom (*Thyatira batis*) and Coxcomb Prominent (*Ptilodon capucina*). At the night's end 117 moths of 27 species were



recorded. As I made my way down the track leading to the car park and exit, I disturbed a courting couple in their car. I have never seen a car depart so fast before!

It was to White Hill on 13th May. Although it was cloudy and very mild, for some reason there were not many moths about. Many species recorded were just singletons such as Common Swift (*Hepialus lupulinus*), Scalloped Hazel (*Odontopera bidentata*), Common Wave (*Cabera exanthemata*), White-pinion Spotted (*Lomographa bimaculata*), Marbled White Spot (*Protodeltote pygarga*), Maple Prominent (*Ptilodon cucullina*) and Clouded Silver (*Lomographa temerata*). The most numerous moth of the night was Orange Footman, a local species with 23 being recorded. Four new-to-site species were recorded though, all micros: *Monopis laevigella*, *Pseudargyrotoza conragana*, *Neuaxera betulinella* and *Prays fraxinella*. It was back to Mereworth Woods on 19th May, which proved to be another quiet night, despite the ideal conditions. In two hours of trapping a mere 79 moths of 26 species were recorded, some of which were Green Carpet (*Colostygia pectinataria*), Common Wave, Pebble Hook-tip, Ochreous Pug (*Eupithecica iudigata*), Lesser Swallow Prominent, Scorched Wing (*Plagodis dolabraria*), Tawny-barred Angle (*Macaria literata*) and Grey Pine Carpet (*Thera obeliscata*). My previous visit to King's Wood near Ashford was during April 2008, so a visit was long due and it was there that I ventured on 28th May. I was hoping to trap in a new tetrad in this Forestry Commission site, but due to a strong breeze blowing I was obliged to go further into the wood to a more sheltered location. The evening went very well with 150 moths of 45 species being recorded, such as Map-winged Swift (*Hepialus fusconebulosa*), Toadflax Pug (*Eupithecica luariata*), Satyr Pug (*Eupithecica satyrata satyrata*), Chinese Character (*Cilix glaucata*), Peacock Moth (*Macaria notata*), Barred Hook-tip, Scorched Wing and Cream Wave (*Scopula floslactata floslactata*). Just before I was about to pack up, I heard a swishing sound approaching, and from around a corner came over a dozen cyclists on a night-time ride through the wood. On 31st May it was to Mereworth Woods. Trapping took place at the entrance to the area known as the Snake Pit, so called because Adders can be found in this small valley. One 149 moths of 46 species were recorded on this visit, which included White-pinion Spotted, Green Silver-lines (*Pseudoips prasinata britannica*), Cream Wave, Pale Prominent, Birch Mocha (*Cyclophora albipunctata*), Scorched Wing, Marbled White Spot, Common White Wave (*Cabera pusaria*) and Triple-Spotted Pug (*Eupithecica trisignaria*).



On 3rd June a 'mothing night' was held at Mereworth Woods for the MOD Conservation Group which oversees the management of the site. I was accompanied on this night with fellow moth-er David Gardner and we arrived early to set up the traps before the event. Around a dozen interested members attended, and with three traps in use, we were kept busy visiting each in turn, noting such species as Pale Oak Beauty (*Serraca puuctinalis*), Satin Lutestring (*Tetbeella fluctuosa*), Common Lutestring (*Ochropacha duplaris*), Small Yellow Wave, Grey Birch, Brindled White-spot (*Parectropis similaria*), White-pinion Spotted, Scorched Wing and True Lover's Knot (*Locophotia porphyrea*). The evening was a great success with several new species for the site being recorded. On 12th June it was to Morden College. It was another quiet night, with a mere 29 species recorded, including Shoulder-striped Wainscot (*Mythimna comma*), Sallow Kitten (*Furcra furcra*), Buff Tip (*Phalera bucephala*), Bee Moth (*Aphoutia sociella*), Green Pug (*Pasiphila rectangularata*) and Straw Dot (*Rivula sricealis*). On 20th June it was to White Hill, on what proved to be a most successful visit. Using just the Actinic set up, 59 species were recorded, the most interesting being Brown Scallop (*Philereme vetulata*), Triple-spotted Pug, Lace Border (*Scopula ornata*) and Coronet (*Craniophora lignstri*). Just some of the other species included Clouded Silver, Beautiful Golden Y (*Antographa puebrina*), Small Yellow Wave, Orange Footman and Ringed China-mark (*Paraponyx stratiotata*).

It was back to Mereworth on 25th June, on what turned out to be a rather exciting night. My chosen trapping spot was at the far end of the Snake Pit, and as I was setting up the traps an army vehicle suddenly appeared. I had assumed that the site was unoccupied as no sentry was posted on the entrance. Producing my MOD Pass, I explained to the officer what was occurring and he informed me that a night exercise was due to take place, so I agreed that I would not use the MV to save the troops' night vision. Trapping with soldiers moving around through the undergrowth was rather interesting, especially when a flare ignited. Given all the activity around me, 47 species were still recorded which included Iron Prominent, Tawny-barred Angle, Green Silver-lines, Waved Carpet, Toadflax Pug, Lobster Moth (*Stauropus fagi*) and a single Beautiful Snout (*Hypena crassalis*). My next outing was on the 1st July, to an area on the outskirts of Folkestone. The twin military accommodation camps of Dibgate & St Martin's Plain are surrounded by chalk grassland, woodland and a stream with Alder carr, beside which I set up the traps. As this site had never been trapped before I was hoping for some really interesting species, and I was not disappointed. At the night's end 58 species were



noted, which included five classed as local; and these were Large Twin-spot Carpet (*Xanthorhoe quadrifasciata*), Dingy Shell (*Euchoeca uebulata*), Rosy Footman (*Mitocrista miniata*), Light Brocade (*Lacanobia w-latinum*) and Lunar-spotted Pinion (*Cosmia pyralina*). Just some of the others were Drinker Moth (*Euthrix potatoria*), Small Rivulet (*Perizoma alchemillata*), Sandy Carpet (*Perizoma flavofasciata*), Smoky Wainscot (*Mythimna impura*) and Burnished Brass (*Diacbrysis chrysitis*).

Two trips to Mereworth were undertaken, on 10th and 15th July. On the first visit an amazing 16 Beautiful Snout were noted. I was expecting one or two as I was next to its foodplant, Bilberry, but 16 of them surprised me. Some of the other species were Peacock Moth, Waved Carpet, Satin Lutestring, Small Angle Shades (*Euplexia lucipara*), Scallop Shell (*Rheumaptera undulata*), Bordered White (*Bupalus piniaria*), Large Emerald (*Geometra papilionaria*), July Highflyer (*Hydriomena furcata*) and a single Bilberry Pug (*Pasiphila debiliata*). On the second visit the traps were set up in an area normally visited during the winter months. Clouded Silver, Dun-bar (*Cosmia trapeziina*), Buff Footman (*Eilema depressa*), Scalloped Hook-tip, Buff Arches (*Habrosyne pyritoides*), Small Emerald (*Hemistola chrysoprasaria*) and Marbled Minor (*Oligia strigilis*) were among the species seen. The highlight was the arrival of a single White-line Snout (*Schrankia taenialis*), which is a rather secretive species and rarely seen. Next it was to Hemsted Forest, another Forestry Commission site near Sissinghurst, on 28th July. I entered by the south entrance and set up two traps at a 4-way junction. With ideal conditions moths arrived in numbers, at least at the Actinic, with Dingy Footman (*Eilema griseola*), Scarce Footman (*Eilema complana*), Ruby Tiger (*Phragmatobia fuliginosa fuliginosa*), Small Rivulet (*Perizoma alchemillata*), Tawny-barred Angle and Scallop Shell being among the first. At the MV were Rosy Footman, Pine Hawk-moth (*Hyloicus pinastri*), Flame Shoulder, Mother of Pearl (*Pleuroptya ruralis*) and Iron Prominent. Totals for the evening were 44 species at the Actinic, but for some reason only 26 at the MV. A few of the other species noted were Small Fan-footed Wave (*Idaea biselata*), True Lover's Knot, Flame Shoulder, Dark Arches (*Apamea monoglypha*) and the rather scarce Small Rufous (*Coenobia rufa*).

It was back to Dibgate/St Martin's Plain on 5th August. After checking in at security, I made my way to where I was hoping to trap, only to find the area was full of cows and troops, not a good combination. An alternative site was soon found and the traps set up.



separated by a copse of Blackthorn. A total of 49 species was recorded, with the highlight being several examples of the Sharp-angled Peacock (*Macaria alternata*). Some of the other species seen were Pale Prominent, Straw Dot, Ruby Tiger, Black Arches (*Lymnaetria monacha*), Barred Hook-tip (*Watsonalla cultraria*), Coronet, Canary-shouldered Thorn (*Ennomos alniaria*), Rivulet (*Perizoma affinitata*) and Sallow Kitten. Next it was to Bedgebury Forest, another Forestry Commission wood, on 14th August. On this visit I ventured further into the site, setting up the traps some 70 feet apart on a curving trackway. Although it was a mild night, for some reason there were not that many moths about, with just 27 species recorded at the Actinic and only 19 at the MV, and they included Pine Hawk, Rosy Footman, Peacock Moth, Bordered Beauty (*Epione repandaria*), Scalloped Hook-tip, Square-spot Rustic (*Xestia xanthographa*) and Satin Lutestring. Just before leaving the site a stop was made at the Forestry Commission offices where an inspection of the sodium lamps around the building revealed another 15 species, which included Coxcomb Prominent, Common White Wave and Straw Underwing (*Thalpophila matura*). On 19th August I had intended going to Mereworth, but as there was a major exercise taking place involving some 150 troops it was to Hemsted Forest instead. This was a much better night with 39 species at the Actinic and 26 for the MV. The two traps were sited on two separate trackways so I was kept rather busy visiting each in turn noting such species as Yellow Shell (*Camptogramma bilineata bilineata*), Black Arches, Peacock Moth, Beautiful Yellow Underwing (*Anarta myrtilli*), Dusky Thorn (*Ennomos fuscantaria*), Common Wainscot (*Mythimna pallens*) and Birch Mocha (*Cyclophora albipunctata*). Many micros were recorded which included *Epinothia trigonella*, *Rhyacionia pinicolana*, *Argyresthia goedartella* and *Hypatima rhomboidella*. After phoning beforehand to see if it was clear of troops (it was), I went to Mereworth on 30th August. The traps were sited on a track in a very sheltered area. Despite the mild conditions it was not a good night with a mere 23 species at the Actinic and only 13 for the MV. The commonest moth being Snout (*Hypena proboscidalis*), with a total of six noted. Some of the other species were Flame Carpet (*Xanthorhoe designata*) (new to the site), Green Carpet, Pretty Chalk Carpet (*Melanthia procellata*), Lesser Swallow Prominent, Brimstone Moth and Square-spot Rustic. My next outing was on 8th September, to Hythe Ranges Training Area. Since it was getting late in the season, I was not expecting much; how wrong I was. The two traps were situated on a shingle and herb rich grassy area some 200 feet apart, separated by a small stand of stunted



Evergreen Oak. Being so far apart I was kept busy visiting each trap in turn noting such species as Rush Veneer (*Nomiophila noctuella*), Orange Swift (*Hepialus sylvina*), Flounced Rustic (*Luperina testacea*) and Large Yellow Underwing (*Noctua pronuba*). Then came the first surprise of the night, the pyrale *Oucocera semirubella*, a Notable B species. This was the first of 13 recorded. Some of the other species noted were Brimstone Moth, Brown China-mark (*Elophila nymphaeata*), Light Emerald (*Campaea margaritata*), Lime-speck Pug (*Eupithecia centaureata*) and Broad-bordered Yellow Underwing (*Noctua fimbriata*). Also noted were 77 examples of Square-spot Rustic. Just as I was about to end the night another rarity arrived, which was a single example of *Cynaeda dentalis*, a Red Data Book species. Before leaving the site an examination of the security lights on the main gatehouse was made and five species were noted around them. Next it was to Hollow's Wood, on 14th September. It was another quiet night despite the rather mild conditions with the Actinic attracting 20 species and the MV a mere 12, with many of them singletons. The commonest moth was the Snout, with 18 noted. Other species included Sallow (*Xanthia ictertia*), Barred Sallow (*Xanthia aurago*), Centre-barred Sallow (*Atethnia centrargo*), Spruce Carpet (*Thera britannica*), Brindled Green (*Dryobotodes eremita*), Svensson's Copper Underwing (*Amphipyra berbera svenssoni*) and Pale Mottled Willow (*Paradriana clavipalpis*). There was some excitement though, as I was setting up for the evening a deer suddenly bolted from the undergrowth right next to me and gave me quite a fright!

It was to White Hill again, on 29th September. As I arrived a shock awaited me: rabbits were everywhere, and the whole area looked as though it had been mown, with very little flora left. What long term effect this will have on the insect life remains to be seen, but it certainly affected the night's catch with only 28 moths of 12 species being recorded. The commonest moths of the night were Barred Sallow, Large Yellow Underwing and Setaceous Hebrew Character (*Xestia c-nigrum*). Others noted, all singletons, were Straw Dot, Willow Beauty (*Peribatodes rhomboidaria*), Square-spot Rustic, Common Marbled Carpet (*Chloroclysta truncata*), Pine Carpet, Red-green Carpet (*Chloroclysta siterata*), Beaded Chestnut (*Agrochola lychnidis*), and the micros *Acleris emargana* and *Carcina quercana*. Alas this was to be my last outing for some time, as shortly afterwards I had a fall and sustained a bad injury to my arm, which has prevented me from driving.



Butterflies I have seen and not seen in England in 2009

by David Keen (3309L)

Calle Casto Bancalero 11. 11650 El Saucejo, Sevilla, Spain.

I came back to England twice in 2009. Firstly for about two weeks at the end of June and beginning of July, and then for a long weekend in September. Whilst neither of these trips was made with insects in mind, I can never resist the temptation to see what is about, given half a chance. Having read about the drastic reduction in the numbers of the Small Tortoiseshell, *Aglais urticae*, I was particularly interested to see if I would spot any, particularly as it does not occur in this part of Andalucia.

Thus, early on the morning of 21 June my wife and I set out to drive from home to Santander to catch the ferry to Portsmouth the following day. Our aim was to drive via Cordoba, Madrid and Burgos to the Cantabrian mountains and to spend the night in a small hotel we had used before. The trip went according to plan until we reached the said hotel nine hours later – only to find that it had closed down. Luckily we found another small hotel a little way further along the road in the village of Alceda.

Having booked in we decided to take advantage of the beautiful evening to walk round the village before the meal was served at nine o'clock. We walked to the local park and across a bridge over a small river that runs through the village, then, past meadows and small cottages before going back to the hotel. The walk took about two hours and we were pleased to see a lot of different butterflies – some were too far away to identify.

However, I did identify the Small White, *Artogeia rapae*, the Clouded Yellow, *Colias crocea*, the Brimstone, *Gonepteryx rhamni*, the Meadow Brown, *Maniola jurtina* and the Peacock, *Inachis io*. All of these were common and nothing 'to write home about' except that, for me, it was so nice to see 'my old friend' the Peacock as this species does not occur in Andalucia.

After breakfast the following morning we drove the relatively short distance to Santander, booked in at the ferry port and parked the car. Then we walked into the town centre, bought a book *Insectos de Espana y Europa* – see the October 2009 *Bulletin* for my book review of this publication which illustrates more than 5,000 species in colour. After a coffee at a bar in the seaside park it was time to return to the car ready to board the ferry.



After a pleasant 26-hour voyage we arrived in Portsmouth and then drove to a guest House in Banbury, Oxfordshire. No butterflies were seen until we went to the National Trust property at Stow on the Buckinghamshire/Northamptonshire border on 27 June. Walking through the grounds, there were plenty of nettles but no sign of the Small Tortoiseshell. In fact, other than the Meadow Brown and the Ringlet, *Aphantopus hyperantus*, both of which were very common, I only saw a couple of Small Whites and two or three Large Whites, *Pieris brassicae*.

There were, however, a good many Dragonflies and even more Damselflies over and around the lakes. The species positively identified being *Pyrrhosoma nymphula*, *Erythronium najas* (typically resting on the leaves of various water lilies), *Enallagma cyathigerum*, *Ischnura elegans*, *Aeshna grandis*, *Anax imperator* and *Libellula depressa*.

Two days later we visited another National Trust property – Canons Ashby in Northamptonshire. Walking along the path from the car park to the house we saw a notice board and table on which was a glass-topped case containing a guide to the gardens. This contained notes, ‘written by the Trust’s Experts’ on the trees, plants and butterflies likely to be seen there. Species included, would you believe, the Black-veined White, *Aporia crataegi*, and the Lulworth Skipper, *Thymelicus actaeon*! The illustrated notes indicated that they are local rarities but, needless to say, try as hard as we could, we did not manage to see either of them. For the record, the illustrations were of a Green-veined White, *A. napi*, and a Large Skipper, *Ochlodes venata*. I wonder if the guide to the plants and trees is equally inaccurate? We did see a few Meadow Browns, Ringlets and Small and Large Whites but, again, no sign of the Small Tortoiseshell.

On the following day we spent the afternoon at our daughter’s house in Bicester, Oxfordshire and in her small garden saw a Red Admiral, *Vaessa atalanta*, a Large White and a Small White.

Into July and on the third we visited Waterperry Gardens which is a glorified garden centre near Headington which is just off the A40 east of Oxford. There, in the gardens we saw more Small and Large Whites, a couple of Green-veined Whites, a Comma, *Polygonia c-album* (another species that I do not find at home), loads of Meadow Browns AND a couple of Small Tortoiseshells near a nettle patch. I was very pleased to see them! Are they making a comeback or was I just lucky to see them?

Other insects observed in the gardens were several Harlequin Ladybirds – no other species were seen in this locality – and a few



workers of the European Social Wasp, *Dolichovespula medius*, which were busily stripping wood from a very old gate post. Later that day, in our daughter's garden, we saw another Comma and a couple of Meadow Browns.

On 5th July we left Banbury in the morning to catch the 4 o'clock ferry from Plymouth and arrived back in Santander at midday on 6 July. We drove home, only stopping for meals on the way, and arrived in the early hours of 7th July.

For a long weekend in September we flew from Malaga to Luton, hired a car and stayed in a hotel at Steeple Aston – on the Banbury to Oxford road. During this five day spell, in very good weather – not even a shower during daylight hours – we only saw one species of butterfly – the Small White. These were seen at Broadway and Bourton on the Water on 6th September and by the Oxford Canal at Adderbury, just south of Banbury, on 7th September.

I just wonder, looking back on our visit to Canons Ashby, how many people are going to be sending in records for the Black-veined White and the Lulworth Skipper?





Highgate Common SSSI, South Staffordshire invertebrate hotspot

by Andy Jukes

conops@hotmail.co.uk

Highgate Common SSSI (Site of Special Scientific Interest) is a lowland heathland near the southern tip of Staffordshire (SO839899) and is managed by the Staffordshire Wildlife Trust. It is located south of Wolverhampton and to the west of the Birmingham conurbation.



Figure 1. Panorama of Highgate Common, 2005.

It only recently became a SSSI, being designated in 2006 after many years' surveying and campaigning by local entomologists and the Staffordshire Wildlife Trust. It is designated for its nationally important invertebrate assemblage (a group of species that all live in the same habitat). Particularly important are the bees and wasps.

Bees, wasps and ants, collectively known as aculeate hymenoptera, are a group that has many scarce and threatened members. Like many insects, most bees and wasps like hot and dry places to live and breed. Highgate Common is good for this because it is in a sheltered depression surrounded by trees which means that it can get quite hot in the summer. Another reason why it is so successful for the bees and wasps (and other insects) is that the site is on sandstone. Sandstone, like other rock types, heats up quickly when the sun is on it and that helps many insects quickly to become active in cool mornings. It also helps the local climate.

Another important reason why Highgate Common is such an attractive place for bees and wasps is to do with their habits.



Figure 2. Typical Highgate exposures.

The aculeate hymenoptera (bees, wasp and ants) can be divided into two broad groups. The first group, known as social bees and wasps, like bumblebees (*Bombus* species) and common wasps (*Vespula vulgaris*), live in hives or nests. They often have large numbers in a nest, with lots of workers and a queen that lays all the eggs that are then raised by the workers. The other group of bees and wasps live on their own, and are known as solitary bees and wasps. Many of these make their nests in holes in the ground that are dug by the females. Each female will look after her own eggs and larvae with no help



from males or other females. As sandstone is not very hard, solitary bees and wasps can dig into it easily and hollow out little underground chambers in which to lay eggs. So Highgate Common's sandstone and hot and dry conditions encourage the bees and wasps to nest here in large numbers.

In all, about 130 species of bees and wasps live on Highgate Common SSSI including some very scarce species such as *Andrena nigrospina*, a large, black solitary bee and *Melitta baenorrhoidalis*, a solitary bee that only collects pollen from harebells (*Campanula rotundifolia*).

Other invertebrates of interest on Highgate Common include the glow-worm (*Lampbris noctiluca*) and bog bush-cricket (*Metrioptera brachyptera*).



Figure 3. *Metrioptera brachyptera*.



Figure 4. *Andrena nigros*.



Butterfly House in Golders Hill Park, London

by Peter Shirley (2684)

As one of the volunteers kindly mentioned by Wesley Caswell in his article in the October issue, can I add that the tropical butterfly house closed for the winter at the end of October, but will re-open on 4th April 2010. Then it will be open every day from 2 - 4 pm. All are welcome to visit, and especially AES members. We are also seeking more volunteers, and if you are interested contact Loretta at info@heath-hands.org.uk. Specific knowledge of tropical butterflies is not necessary, but if you have this, then you would be particularly welcome.



New grasshopper book published

by Tim Gardiner

The book *Hopping back to happiness? Conserving grasshoppers on farmland*, published by VDM Verlag, examines the influence of certain agricultural management regimes such as mowing and grazing, on grasshoppers and bush-crickets (Orthoptera) of improved grassland in eastern England. This study outlines management that is likely to be detrimental and beneficial to grasshopper and bush-cricket populations and includes an assessment of the effects of sward improvement, nitrogen fertiliser input and silage cutting. The book also provides a current assessment of the success of the recently introduced Environmental Stewardship Scheme, which includes habitat management options such as six-metre wide buffer strips around arable fields, that have infrequent mowing and an absence of fertiliser input as their main beneficial features. This analysis should be of interest to entomologists, professional ecologists, researchers, and anyone with a general interest in conserving our declining farmland wildlife. You can purchase this publication from www.amazon.co.uk.



Some thoughts on digital insect photography

by Guy Broome (6872)

Stoneybrook, Hethersgill, Carlisle, Cumbria CA6 6HX.

EQUIPMENT

Cameras

Digital SLRs are the gold standard but compact non-SLR digital cameras are ever improving, recent models have got over the problem of the frustrating delay between pressing the shutter release and the image being captured. Compacts are way smaller and lighter than SLRs. Most new models now include image stabilisation, a huge leap forward.

SLRs have the advantage of being easier to override automatic function and prioritise aperture, ISO and speed settings, thus enabling manipulation of depth of field and speed of image capture.

Megapixels are not vitally important, as it is usually possible to fill the frame with an insect and avoid extensive cropping / zooming. This contrasts with bird and mammal subjects, where maximal megapixels enables enlargement of an initially small image to acceptable quality.

Lenses

True macro (1 to 1 ratio of subject to image size) is needed for subjects smaller than around 3cm. For larger insects, lenses with close focus facility (much cheaper than full macro) are sufficient. Most top range non-SLR cameras have adequate macro function but it can be a cumbersome process getting this on the menu. For SLRs there is debate on the focal length for a macro lens – if the subject is not wary and does not bite, 50mm is ideal. For wary butterflies, 100mm or 200mm prevent the need for very close approach but have the disadvantage of increased camera shake and losing depth of field.

Telephoto, up to 500mm can be excellent for subjects that can not be closely approached, eg. arboreal or canopy species. Newer lenses can focus down to distances or around three metres.

Lens make is much less important than it used to be. All lenses are now computer rather than manually polished, so to some extent you pay for the name. Professionals tend to shun zooms, feeling they have slight loss of clarity, compared to fixed focal length. Unless you are publishing in *Entomologist's Vogue*, this is probably theoretical.



Flash

On camera built-in flash is good for non-macro work but tends to over- or sometimes under-expose. Ring flash is the gold standard for serious macro work. Exposure can be altered by altering the ISOs, sometimes easier than complex manual flash functions. For telephoto shots ISOs of 1600 or 3200 can be good if a bit grainy.

Flash gives easily achievable, sharp images with a good depth of field; but black backgrounds and slight changes in colour balance are disadvantages. Fill in flash on auto setting will partially overcome this. It is always worth doubling up with available light frames, particularly as poor images can be deleted for free.

Tripods

These are rarely needed for all but low light images of static subjects with telephoto or macro lenses. A monopod is much more adaptable in the field if support is needed.

Editing and format

It is worth making a distinction between constructive and destructive editing. Raw data format allows extensive alteration in colour balance, contrast and brightness without losing image quantity / megabites. Disadvantages of RAW are the need for big storage capacity and the time it takes to process and store images. Fine quality JPEGs and latest editing packages get round most of these problems. The initial problem with JPEGs was that any editing was destructive and lost quality. Up to date editing packages have a feature that allows you to save edited images with a slide scale that avoids compressing data and minimises destructive editing.

If you wish to publish images there is often a limit on minimum megabites per image. Until recently this pretty much meant using RAW data but this is no longer the case (check the megabites on properties of each image). Equally, e-mailing big megabyte images is a pain and many PCs will not accept them. It is easy to compress them deliberately; this also prevents the recipient pirating the image.

Using ISOs

ISOs are the equivalent to the pre-digital ASA grade of film speed. 100 ISOs will give best colour balance and quality but is only usable in excellent light or close up flash. At the other end of the scale 3200 ISOs is excellent for deep shade or dawn / dusk shots. In general, it is



Figure 1. *Alcidis orontes*.

better to have a sharp, slightly grainy image on high ISOs than a slightly blurred shot on low ISOs (see flight shot of day flying moth *Alcidis orontes* taken with 300mm lens on 3200 ISOs and although not a prize winner, technically impossible otherwise). Up to date camera bodies have a noise reduction menu function. This reduces pixellation and colour error in images taken with greater than 800 ISOs.

Using manual apertures

Depth of field can be a problem with insects. Half a wing or body out of focus can spoil an otherwise excellent shot. Traditionally, taking the shot face on with the plane of the wings is the solution. Large numbers of ID shots of butterflies face on for underside or upperside can get pretty boring. An angled shot can be more interesting but does require a large depth of field. To achieve this, use a small aperture, say F22 and increase the ISOs, to allow a fast shutter speed (See *Deudorix epijarbas*, oblique angled shot, emphasising the tail appendages that mimic true eyes.). If a background is disruptive, eg. overlying grass stems, a smaller depth of field can emphasise the subject. In this case, use a larger aperture, say F8. Going too low, F2.8 would lead to only a small portion of the subject in focus.



Using shutter speed

On the whole we all like the sharpest image possible. The necessary speed to achieve this varies with lens focal length. A 50mm lens can take a sharp image on 20th of a second. A 500mm lens will need 250th, dependant on the lens support and whether the camera has image stabilisation. These guide figures assume a static subject taken in the field and not from a hide.

Flight shots are a real challenge and much more demanding than in bird or mammal photography. 2000th of a second or faster is needed to freeze a butterfly's wings. This is only feasible in excellent light, close with flash, or, with very high ISOs. It's a bit easier to get the body in focus and accept blurring of the wings (this can look more natural than the whole subject in sharp focus (see Figure 2, High Brown Fritillary).

As well as problems with shutter speed, flight shots can present other difficulties. Only too often, only part of the subject is in the frame. A relatively short focal length lens and cropping can salvage the image. If, frustratingly, half a wing is missing, very close cropping of the close up can make the missing bit look deliberate. Anticipating a settled insect taking flight is good, try and predict the direction of take off and leave plenty of frame in this direction. If using a zoom, reduce focal length just before takeoff.

Autofocus is variable. Canon has the best reputation but also a higher cost. Varying the size of target of the autofocus can help but this can be frustratingly difficult. With experience, manual focus can be better than auto but neither is reliable. Essentially, take multiple images and one will always be better than the others – it costs nothing but time to delete digital images.

Creative effects are possible by deliberately using very slow shutter speeds to achieve impressionistic blurring. There is a fine line between a botched effort and art. In the end its up to taste of the observer and a certain dollop of bullsh*t (see Figure 3, an image where I have to admit to having the camera on the wrong manual settings altogether!! shutter speed 5th of a second.)

Some dodgy tips

As collectors find, many rainforest species, nymphalids, morphidae etc. are attracted to rotting banana bait. The butterflies ingest fermented alcohol and get pretty docile. They will often tolerate being placed on a leaf or trunk for a photo opportunity. I have to admit that as a



Figure 2. High Brown Fritillary *Argynnis adippe*

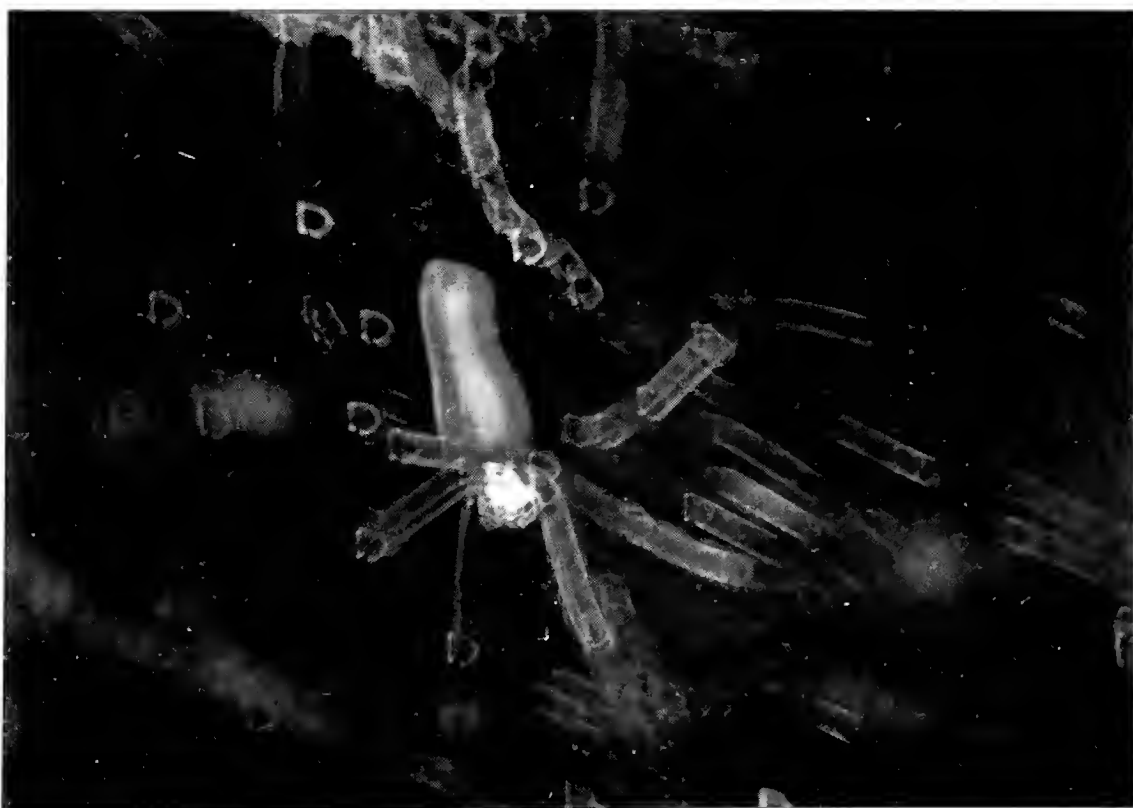


Figure 3. *Dendoryx epijarbas* (Philippines).



collector, this first attracted me to the possibilities of butterfly photography. The collector doing a bit of photography can get away with basic gear and techniques.

Many species resolutely refuse to show their uppersides, confining the photographer to often dull underside shots. Refrigerating a caught specimen can lead to a semi-conscious subject, as does banana bait. Annoying a torpid butterfly can, if luck holds, lead to it momentarily opening its wings, or at least twitching them, allowing a glimpse of upperside (reference to *Vogue* again, where a glimpse of thigh or breast edge can be more exciting than a full nude on page 3 of lesser journals!!). I have to admit that the refrigeration time is hard to get right and from limited experience the photographer has to resort to being a not-so-politically-correct collector and search the attic for his setting board on returning home.

Finally, we have probably all seen the famous USA photographic butterfly ID book, which espouses political correctness but, with careful observation, many of the upperside shots demonstrate a pin head in the central thorax region and an unnatural gap between upper and lower wings.

Serendipity

Some shots are just good luck and arise from being out in the field the maximum time allowable – my final photo, Redstart, is an example of this.





Pheromone attraction of the micro moth *Oecophora bractella* Lepidoptera: Oecophoridae

by John Walters

www.jobnwalters.co.uk

On 29th June 2006 I was walking along a track through White Wood on Dartmoor, south Devon (SX68 72). At 7am, as the sun was beginning to break through the mist and light up the moss and lichen-covered oaks, I noticed a distinctive micro moth fly past me. From experience I knew it was *Oecophora bractella*, a scarce species which flies very early in the morning. The large yellow patches on the wings flickering in the sunlight give this species a characteristic appearance in flight. It was immediately followed by several more flying in the same direction. I followed the moths and was rewarded with the beautiful sight of 15-20 fluttering in a shaft of sunlight around a standing dead tree. Closer inspection revealed a female sitting on the bark amongst this small cloud of moths. I managed to get a few photographs of the males around the female before one mated with her and the others quickly dispersed leaving the mating pair settled for at least 10 minutes.

Oecophora bractella is a scarce species found in ancient woodlands mainly in southern England. It has a 12-16 mm wingspan and beautiful yellow, black and blue markings. Its larva feeds under dry dead bark on fallen branches and standing trees. The adults emerge from late May to late July and are most frequently seen flying early in the morning on calm, sunny days.

Another beautiful dead wood feeding micro moth which occurs around Dartmoor is *Schiffermullerina grandis*. I have not witnessed the mating flight of this species but have seen the moths flying in sunshine early in the morning in May and June.



Oecophora bractella mating



Notes on the presence in Bermuda of the Spiny-backed orb-weaver (*Gasteracantha cancriformis*), Arachnida: Araneae: Araneidae

by Matt Simon

947 Chestnut Street, No. 3, Newton Upper Falls, Massachusetts 02464, USA

During my first visit to Bermuda, in 2007, I was captivated by a vivid species of spider that was worthy of my boyhood jungle-adventure yarns. Each spider hung in a spectacular orb-web strung up a metre or more above the ground between shrubs and small trees. The conspicuous abdomen of the species was jewel-like, with spires, bumps, and a brightly contrasting palette of white, black, and red (Fig. 1).



Figure 1. Spiny-backed orb-weaver (*Gasteracantha cancriformis*).

Though this spider was clearly an orb-weaver (family Araneidae), it is unhelpfully called the “crab spider” by Bermudians, most of whom are unaware that in entomology the common name crab spider denotes a spider of the family Thomisidae. It was not until after I returned home that I managed to identify the species: the spiny-backed orb-weaver, *Gasteracantha cancriformis* (Araneae: Araneidae), the

only indigenous member of the *Gasteracantha* genus in the New World. I have since become better acquainted with it, both in Florida and during a return to Bermuda in September 2009.

The main range of *G. caucriformis* runs from the southern rim of the United States into tropical South America. Florida is often said to be the northern limit of the range (i.e. up to about 30°N), but in fact that honour must surely belong to the tiny archipelago of Bermuda, whose latitude is roughly 32°N.



Figure 2. The web of Spiny-backed orb-weaver (*Gasteracantha caucriformis*).

As I noted earlier, *G. caucriformis* often builds a storybook orb-web (Fig. 2). The disc of long radii and parallel circumferential lines can be up to 60 cm in diameter, though the typical diameter seems to be somewhere between 30 and 40 cm, depending on the size of the spider. Diurnal and drawn to woodland edges, *G. caucriformis* is well suited to the open, sunny habitats afforded by Bermuda's gardens, golf courses, and lush roadside verges. In the clear spaces between ornamental trees and shrubs, the spiders have ample room to build their large webs; and in these flyways they trap flies, beetles, moths, and other insects. Females, which build the webs, can grow to 7 mm long and 13 mm wide. Males are smaller (2 or 3 mm long) and do not



make webs. Instead, they skulk at the edge of females' webs during the autumn and wait for a chance to approach and mate. After fertilisation, females deposit egg cases on the underside of leaves, and the spiderlings hatch in the late winter.

The spiky and vivid appearance of *G. cancriformis*, as in other *Gasteracantha* species, probably evolved because it makes the spiders look unpalatable to birds and lizards. However, the bite of the species would not trouble a vertebrate predator, and the body is not chemically defended in any other way, so the colour scheme cannot be truly aposematic. Rather, it is perhaps an evolutionary bluff: without packing any appreciable punch, the spiders may nevertheless benefit from having colours that predators associate with danger. The spikes on the body doubtless also help. Whatever the case, on Bermuda the spiders are both conspicuous and plentiful despite the presence of many potential avian predators, including the Great Kiskadee (*Pitangus sulphuratus*), a voracious tyrant flycatcher that eats almost anything. So something about the species must deter predation.

G. cancriformis was first recorded in Bermuda during the 1930s, according to the staff of the Bermuda Botanical Gardens (169 South Road, Paget Parish), who kindly shared this fact with me during my second visit to the islands. The species was probably introduced inadvertently to Bermuda by people, as the spiderlings apparently do not balloon long distances. In Florida at least, *G. cancriformis* is common in citrus groves and other agricultural landscapes that produce crops for long-distance transport. While adult females are sedentary and favour open, well-lit spaces, the spiderlings and immatures tend to seek hidden nooks that are sheltered from the elements. It is therefore not hard to imagine that immature spiders in agricultural contexts might accidentally stow away inside shipping containers.

Unlike many of the invasive animals and plants that have been brought to Bermuda, the spiny-backed orb-weaver seems a welcome addition to the fauna of the islands. Its ability to help control bothersome insects, especially flies, is duly noted. One resident told me that she welcomes the many spiders that have colonised her back garden – even though they sometimes proliferate in such numbers that she must continually duck and crouch to avoid the webs.

Reference

Muma, M.H. (1971), Biological and behavioral notes on *Gasteracantha cancriformis* (Arachnida: Araneidae). *Florida Entomologist*, **54**, 315-351



Bees, butterflies and annuals

by Andrew Eames (4840)

35 The Wharf, Shardlow, Derbyshire DE72 2HG.

Most people are keen to see bees and butterflies in their gardens, and many of the plants that attract them are well known; Buddleias are a prime example, and there is no doubt of their attractiveness (although there are varietal differences – ‘Dartmoor’ is certainly one of the best). Most gardeners would assume that annual bedding plants were not worth considering to attract bees and butterflies, but they would be wrong – some are certainly well worth having.

The single-flowered annual Dahlias are one of the best, and surprisingly French and African Marigolds (*Tagetes*) are very successful at attracting them, especially single-flowered ones. The ‘Triploid’ Marigolds like Zenith and Sunburst are an extreme example of the art of the plant breeder and might be shunned by purists, as they are sterile hybrids that do not set seed; but the result of this is that they keep on producing pollen and nectar and are much favoured by butterflies, bumblebees and honeybees.





Other annuals that are noted for insect attractiveness – the Antirrhinum or ‘Snapdragon’ is well-known for attracting bumblebees, who have to work out how to get into the flowers. Foxgloves too have the same general design of flower. Sometimes early in the season Pansies are much favoured by both bumblebees, honeybees and butterflies, probably because there is not much else for them at that time. Late in the season Cosmos are often covered in butterflies, and scented flowers like Heliotrope and Sweet Peas will also attract butterflies on warm days.

So don't ignore annuals if you are trying to attract insects to your garden!





On vanishing butterflies

by Brian O. C. Gardiner (225)

2, Highfield Avenue, Cambridge, CB4 2AL.

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For the past century and a half, when reliable records have been kept, there has been a continuous decrease in the number of our butterflies. Today less than half of the total number of species are on a safe footing and even these are not as abundant as they were at the turn of the century.

Europe is poor in butterflies and more species may be found in a few square miles of the Amazon valley than exist in the vast area extending from Ireland to the Urals: from the arctic circle to Sicily. Of the 15,000 recorded world species less than 1,000 are European and only 69 British and even of this small total about 20 per cent rely for their presence here solely from regular immigration, chiefly from the Mediterranean region.

During the past century several of our species have become extinct. There is some evidence that even more species have vanished over the past 300 years as there is a strong tradition among Entomologists that butterflies such as the Scarce Swallowtail (*Papilio podalirius* L.) and the Scarce and Purple Edged Coppers (*Chrysophanus hippothoe*, L. *C. virgaurea* L.) existed in England during the seventeenth and eighteenth centuries. The habit of early authors on the subject to include Continental species in their books; their lack of labelling; the known importation of foreign specimens for display in their cabinets, makes it impossible today, over this distance of time, to prove conclusively whether or not these were ever British residents. In some cases the circumstantial evidence indicates that they were and there is a very strong case in regard to the Swallowtail (*Papilio machaon*).

It is now of course well known that the Swallowtail at present occurs on the Norfolk Broads (although it used to be widespread over the now drained fens) – this is ssp. *britannicus*, and differs from the Continental race of Swallowtails, ssp. *bigenaratus*. It is not to be confused with the Continental examples which are found from time to time in Southern England. These are stray migrants from France.

During the eighteenth century *machaon* was a fairly common butterfly, not only on the fens and broads but also round London and in Southern England. Just over a century ago an illustrated book on butterflies was written by Messrs. Humphreys and Westwood and in some of the copies an English race Swallowtail is depicted whereas in



others a Continental example is shown. In both cases the authors remark that the illustration is from a British example and it should be borne in mind that at this time Entomologists did not distinguish the two. One of the differences between the two races is the choice of food-plant, the English choosing two fenland plants and the Continental feeding on a variety of plants including carrot and rue. The latter plant was once commonly grown in gardens but is rarely found today. These facts therefore make it almost certain that the Swallowtails around London and the South were of the Continental race, which is now extinct.

The history of the extinction of the Large Copper (*Lycaena dispar* Haw.) is one of the best documented. This was a distinctive English butterfly that did not occur abroad. It inhabited the fenlands with a few outposts nearby. The last regular appearances were in 1845 and the last one was seen in 1860. Various reasons have been put forward for its disappearance. Primarily, it has been frequently suggested, this was caused by overcollecting and persecution by Entomologists. There are various reasons why this was not so, and Muggleton (1973) has shown in the case of the Large blue (*Maculinea arion* L.) that the primary cause of extinction is the destruction of the habitat, massive collection of specimens having had little effect.

In the first place the Large Copper was a fenland butterfly and by the time it was first discovered in 1795 the major part of the fens had already been drained. Secondly it was not seriously collected until some thirty years later by which time its area of distribution had already shrunk considerably. Its last stronghold was Whittlesea mere, an extensive and dense area of marsh, in which it was only possible to collect the butterfly round the fringes. Compared to other hazards such as parasites, disease and predators the percentage caught by collectors must have been a fraction of a per cent. Now it appears that before the mere was drained, and in order to assist the work, the vegetation was burnt off. The roots of the Great Waterdock survive this treatment but of course eggs, caterpillars or chrysalids on it would not. Now although the butterflies were not seen for a year or two before the drainage this applied to the edges only and since, as I will explain later, butterflies expand and contract their range, I believe, and the evidence supports this, that at this time the Large Copper was contracting and that birds were the cause. By this time the drainage already carried out had caused a change in the climate of the fens making them drier, which in turn changed the bird population, many small insect-eating birds moving in to replace the water-loving ones, this increase being helped by the simultaneous destruction of birds of



prey in the sporting interest. It so happened that just before the Large Copper emerged from the chrysalis it changed colour and became very conspicuous. At this stage it would be ignored by ducks and geese but would have been a tasty morsel for tits and robins. These birds could well have given the final *coup-de-grace*. Fundamentally of course the primary cause was the drainage of the fens – originally an area of some 2,500 square miles incidentally – and this is fully borne out by the fact that half of our considerable number of extinct moths were fenland species.

The case of the Black-veined White (*Aporia crataegi* L.) is rather different to that of the Large Copper. This was a hedgerow and orchard species whose caterpillars fed in colonies and it was formerly common over almost the whole of the Midlands and South. Apart from a small colony in East Kent which finally vanished about 1925 this butterfly became extinct over the rest of its range between 1870 and 1890. At about the same time a number of moths also became extinct and a climatic change has been put forward as being the most probable explanation. Other causes should not be neglected since an outbreak of disease is another possibility, and, moreover, one which may well be overlooked at the time. Virus disease has been stated by C. F. Rivers (1959) to cause 99 per cent mortality in Cabbage White caterpillars (*Pieris brassicae* L.) and it will strike suddenly after an absence of very many years as it did to this species in 1955 (see David, 1957). Indeed it is likely that in Southern England this species is saved only by immigration of fresh stocks. It is perhaps significant that the Cabbage White has not been a major agricultural pest since the outbreak.

In common with most animals, butterflies show a rise and fall in numbers and in the area of their distribution, the full cycle often extending over several decades. The Comma butterfly (*Polygonia c-album* L.) is a good example. During the last century it was fairly common and widespread but by 1920 it had shrunk to a small area near the Welsh border. During the next twenty years it suddenly spread outwards and by 1949 was again common over the Midlands and South. It may now be starting to contract again. A similar tale can be told of other of all butterflies.

Now it could well happen in such cases that when the butterfly is at its minimum the population is then too small to weather the storm should some unforeseen disaster, such as disease, adverse weather, or insecticide spraying occur. It was just at this time when the Black-veined White was at a minimum that general spraying of orchards with insecticides became common and I believe that it was this which



finally caused it to become extinct, before it had had time to spread again like the Comma.

I have already mentioned that about 20 per cent of our butterflies are only here because of immigration. These can be divided into two classes. Regular immigrants usually in large numbers, such as the Red Admiral (*Vanessa atalanta* L.), and occasional vagrants like the Queen of Spain Fritillary (*Argynnis latbonia* L.). It is these occasional vagrants that are interesting since some of them, including the Queen of Spain Fritillary and Bath White (*Pontia daplidice* L.), were once established here and were caught regularly. Indeed the oldest butterfly in existence is a Bath White caught at Cambridge over 250 years ago. These butterflies still sometimes produce a generation here but conditions are not yet right to enable re-establishment to take place. It may well be that these butterflies represent yet further examples of the contraction and expansion that is continually taking place, only in these cases the contraction phase took them right out of the British Isles.

The Large (*P. brassicae*) and Small (*P. rapae* L.) Whites – those great pests of cabbages – are both resident and immigrant. It is unlikely that they would survive here if it were not for this immigration and since they are the only butterflies we have that are an economic pest, many people would be quite glad to see them go.

The statement that only immigration sustains the Large White here needs some explanation. This not only illustrates the perils that butterflies in all their stages have to face, but also shows what a delicate state of balance the population is in. It is quite easy to realise how a slight tipping of the scales can send a species into extinction.

In 1933, J. E. Moss showed that 10,000 larvae produced 32 butterflies. As each female is capable of laying just over 700 eggs (although some authors have put it much lower than this) a simple calculation shows that the population will barely maintain itself, assuming that every female lays all its eggs. Now there is one serious omission in this result of Moss's. It does not allow for any mortality of either eggs or adults. The chance that any butterfly will live long enough to lay its full quota of eggs is very remote. I know from personal observation that few butterflies live their allotted span. Birds, wasps and mice all eat them and who can say how many are killed by sudden thunderstorms? It is likely that the normal indigenous population declines by half each year, and the butterfly would soon become extinct if we received no specimens from abroad. Indeed, there have been fewer about during the last two decades due to lower immigration than usual, coupled with the virus epidemic already mentioned.



Now what are the factors (and they apply to all species of butterfly) that reduce 10,000 to 32? First is the small parasitic wasp *Apanteles glomeratus* L, that accounts for about half of all the larvae. Wasps and ants also eat them but the Thrush is the only bird I know that likes these distasteful larvae. Disease, either bacterial or viral, accounts for variable but often large numbers. Indeed I have already mentioned this being as high as 99 per cent so it is easy to imagine it as a cause of extinction. Those caterpillars that manage to turn into chrysalids then find that this stage too is attacked by bacterial disease and parasitic wasps. Also unlike the caterpillars the chrysalids are highly palatable and are enjoyed by a variety of birds as well as by mice.

It must always be remembered when considering all these enemies of a butterfly that the whole complex of parasites and predators is very involved and many of them are indiscriminate in their choice. For instance a lack of immigrant Large Whites may well have led to greater parasitism of the Small White since the same *A. glomeratus* attacks both species.

All these causes have been operating for thousands of years and have on the whole maintained a balanced population. But apart from those species that have become extinct the butterfly population as a whole has declined drastically since the turn of the century and the reasons for this are undoubtedly man-made.

It is stated in the most popular and widely read book, on British butterflies, written by Richard South at the beginning of this century, that the young collector should be able to find half of the generally distributed species in one season. Today a quarter to a third would be a more accurate estimate. On Royston Heath, once a celebrated locality for Blue butterflies where they could be seen in their thousands, it is now a privilege to see more than a hundred or so. In lanes and byeways, once so profusely populated from spring to autumn by Orange-tips, Hairstreaks, Marbled and other Whites and Browns, these gems of the sun are few and far between. Even in the woodlands the numbers have declined. Now what are the reasons for this? Almost certainly the direct activities of Man.

More and more land is taken for houses and agriculture as well as roads. I well remember a rough field where I used to find the Adonis Blue (*Lysandra bellargus* Rott.) when I was a boy. This field is now a housing estate and the Adonis Blue has gone from this area of Kent.

Apart from this, extensive tree felling particularly during the two war periods, and the almost invariable replanting with foreign conifers, has



changed the character of many woodlands. Changing agricultural practices have caused some areas to become overgrown. Sheep droving for instance used to keep some of the old Roman roads open by grazing. Nowadays they are becoming overgrown chiefly with scrub Hawthorn. Today's pitiful remnants of the ancient fenland are more woodland than fen.

A more recent example, which illustrates the interaction of one form of life upon another is the decline of the Chalk-hill Blue butterfly (*Lysandra coridon* Poda) which appears to be related to myxomatosis disease of rabbits. Large rabbit populations kept downland grass short and allowed free growth of vetch, foodplant of the larvae of these butterflies. Rabbit de-population has allowed grass to grow which has smothered the vetch.

The modern practice of cutting, trimming and spraying roadside verges also does harm to the butterflies. When this was done by scythe little harm was done to the insect inhabitants, but modern machinery and above all the deplorable practice of spraying with poisonous weedkillers has all but wiped out not only the butterflies but also the bumble-bees, often with detrimental results to nearby crops they would have fertilised. The general spraying of crops with insecticides must also kill a vast number of butterflies. For instance I have known a cage of several hundred butterflies in a glasshouse to be killed by spray-drift when over a hundred yards away from a field, and there has been a report in the papers about the dangers of poisoned blackberries near potato fields.

I was struck recently, when on a visit to a relatively unspoilt part of Norfolk, to notice that where the verges had been left in their natural state there was a pleasing profusion of both wild flowers and insects. It's also rather interesting to observe that the Mountain Ringlet (*Erebia eniphron* Haw.), living as it does on remote hilltops in Scotland and the Lake District, where disturbance of the habitat has been at a minimum, continues to occur at about the same population level as when first found.

No population is ever static and constant changes are always taking place. There is well documented evidence that over the last sixty years there has been a contraction of the polar ice-cap and a recession of Alpine glaciers. This has been accompanied by a northward movement of animals and plants. On turning to our moths we find that although some thirty or so have become extinct twice this number of new species have moved in to replace them. That this hasn't happened with the butterflies is probably due to their smaller proportionate numbers.



The Channel may also be a barrier to some species and this doubtless applies to some moths too. Dr E. B. Ford has shown that even a small river estuary is an effective barrier to Meadow Browns (*Maniola jurtina*).

This leaves the question of the noted migrants. Why do they not become established here? I think there are several reasons for this. In the case of the Milkweed (*Danaus plexippus*), the food-plant does not occur. The Clouded Yellows produce a continuous succession of broods, and so can't survive our winter frosts. The Camberwell Beauty (*Nymphalis antiopa* L.), a Scandinavian species, requires a colder winter. On the other hand an occasional Red Admiral manages to pass the winter here in hibernation.

Although one might believe that a good summer would encourage species from a more southerly latitude to become established, they do in fact require a short mild winter in preference to a hot dry summer. The absence of parasites could also be an important factor for it seems that it is the absence of these in the breeding grounds that enables the vast swarms that migrate into this country to build up.

What is to be the future of our butterflies? Some are very scarce and local, but were formerly far more widespread. The Glanville Fritillary (*Melitaea cinxia* L.) for example is now confined to a few acres in the Isle of Wight and concern is already felt by Entomologists for the Large Blue, which is confined to a few localities in the West, one of which suffered from fire recently. I fear that in a few decades these lovely butterflies may be gone, but it is possible that some Central European species will establish itself. The Purple-edged Copper has been spreading westwards; the Japanese Tortoiseshell (*Nymphalis xanthomelas* Stichei) has reached Czechoslovakia and as mentioned at the beginning of this article there is a tradition that the former was once British. I like to think that one day it will return to us.

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The aim is to collect and identify as many species as possible between now and the end of NSEW (which takes place 12-21 March), with each of the spots added to a map – painting a fascinating picture of UK wildlife for us all to observe.

To reward and incentivise people to get involved! NSEW is offering a green roof – which will encourage biodiversity in urban areas – to a school from the region of the UK which has collectively uploaded the most images by the end of NSEW. In conjunction with Sika-Sarnafil and Living Roofs the NSEW green roof will be a living legacy benefiting the local community for years to come. In addition, everyone who sends in a photo will be sent a free packet of biodiversity-encouraging seeds to plant in their gardens, and an information and education pack.

This is a great opportunity for specialists and the public to join together to raise awareness of the UK's wealth of biodiversity, so log-in and help identify anything you recognise or check out what's in your garden... you never know what you might find!

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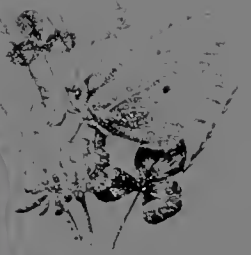
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Volume 69 • Number 489

April 2010

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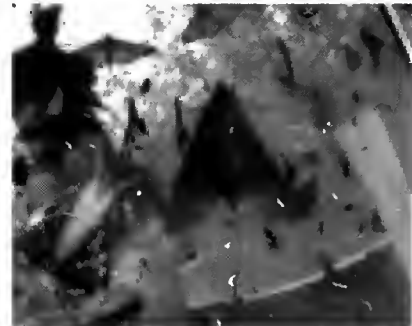
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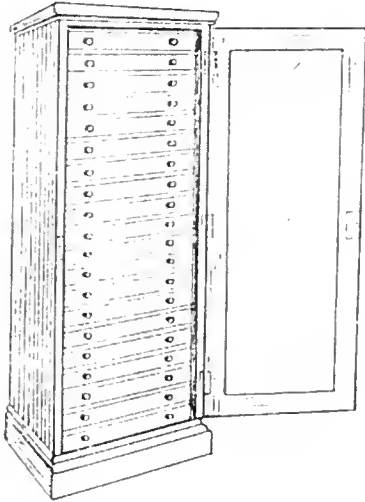
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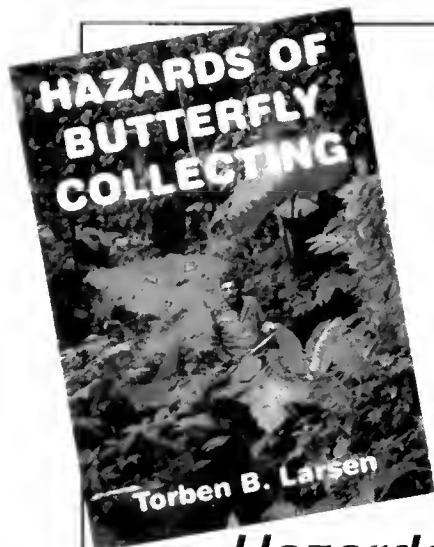
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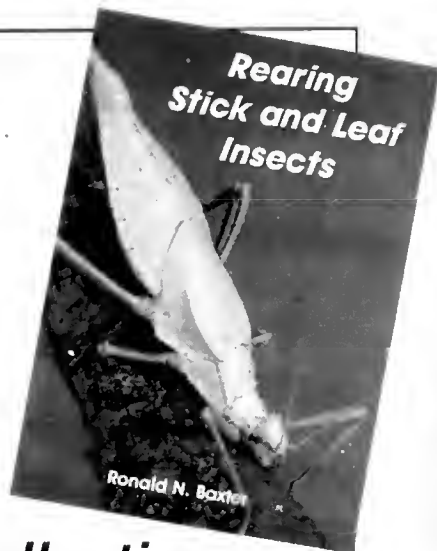


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Bulletin Cover



This month's cover picture shows an adult Broad-bodied Chaser dragonfly (*Libellula depressa* Linn.). They are mainly a species of small ponds and dykes, occurring quite commonly in early summer and in the southern counties of England, less frequently further north...

The males tend to be very territorial in habit, sometimes staying on the same twig or reed for whole days. They are fast-flying, but it is possible to get quite close to a sitting female before she darts away.

The photo was taken by Dr David Skingsley. More of his work can be found in his website "The Bug Botherer's natural history picture archive from near Alsager in South Cheshire." www.bugbotherer.org.uk

We are most grateful to him for allowing us to use his pictures in this and other recent issues of the *Bulletin*.

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The Bulletin

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April 2010

Editorial

First of all, I must apologise for this *Bulletin* being unlikely to reach you before the AGM and Members' Day at the Natural History Museum. Hopefully, however, many of you attended the day to make it as successful as similar events over the last few years. If you were unable to be in London on 24th April, there are various other activities listed in this issue of the *Bulletin*. Alternatively, you could contact the Society to find out how to organise your own event.

2010 has been designated the International Year for Biodiversity by the United Nations. We are very fortunate to have an article in this issue of the *Bulletin* to explain the concept and some of the details. Insects, of course, account for the large majority of biodiversity. Hence the work of amateur entomologists such as ourselves is particularly important for such initiatives. This work can only be recognised if it is published in journals such as the *Bulletin*. One such article that we have pleasure in publishing is Ashley Whitlock's *25 years of Butterfly Recording*. I feel that this piece not only offers an account of incredible biodiversity, but also manages to convey an incredible enthusiasm.

Phil Wilkins

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Society Matters

New AES Local Group at Bangor

A new fledgling branch of the Society has been set up at Bangor University by Kara Majerus. The group is active on Facebook and may be contacted through the Society, or directly via the information on the website <http://www.amentsoc.org/membership/local-groups/bangor/>.

Donations to the Society

We are very grateful to a number of members and others who have recently made donations to the Society, in particular for the very generous donation of £1000 to the Michael Majerus Fund by Don McNamara. We have also received two separate donations of £500 each from two charitable trusts, one being the Panton Trust and another who wishes no publicity. Thanks also to another anonymous donor who has given us the prize money for the 2009 Gardiner Award. This award, for the best *Bug Club Magazine* articles in 2009, will be formally presented to the winners at the AGM on 24th April. The donation of the prize money will take a little pressure off the Ansoerge Fund in the current economic climate.

The donations page on our website has now been updated so that people wishing to make online donations can choose how their contributions should be used. The options are a) the general running of the Society; b) development and promotion (the Crow & Hammond Fund); c) support of the Bug Club (the Ansoerge Fund); and d) support of education and research projects, to encourage a new generation of entomologists (the Michael Majerus Fund).

Are you over or under?

Some subscribers have inadvertently paid twice for their 2010 subscriptions. We think we have identified all those who have and have written to them, but if there is anyone we have missed please get in touch by writing in to the AES address or emailing registrar@amentsoc.org

Others have underpaid! In particular, some people are still paying an out of date subscription rate (£18.50 in many cases) by standing order. We are in the process of writing to them, but again, if we have missed anyone please amend your standing order immediately!

Thank you



Oxford Young Entomologists' Day

This event, led by Darren Mann, was extremely successful, with around 80 attendees. Eighteen young people aged 5 to 17 gave talks on entomology in the lecture theatre of the university's Museum of Natural History. The overall winner was Safiya Lim, aged 9, who gave an excellent PowerPoint-illustrated presentation describing her observations on ants. Safiya has the enviable job title of 'Manager of the Ants' Nest' at her school, and an article based on her talk, together with an account of her impressions of the day, appears in this month's issue of the *Bug Club Magazine*.

A Snippet from AES History

An advertisement in the *Bulletin of the Amateur Entomologists' Society* dated October 1952 read: "Dr P.M. Sheppard (291), Genetics Laboratory, Dept. of Zoology, University Museum, Oxford, wants living eggs, larvae or pupae of *Papilio machaon* (Swallowtail) from the Continent for genetic research. Will buy or exchange for living British *P.machaon* or South African *P. demodicus*."

The advertisement was answered by AES Member Dr Cyril Clarke, of the David Lewis Northern Hospital in Liverpool. Clarke and Sheppard went on to collaborate on the study of genetics in various *Papilio* species, Sheppard eventually moving from Oxford to join Clarke in Liverpool. They wondered how their entomological studies on sex-linked inheritance might be applied to medicine, and the answer came in the form of a treatment for Rhesus babies, in particular the practice of post partum administration of Rhesus antibody to the mother, a technique which resulted both in a fall in the mortality rate in rhesus babies and in the establishment of a Nuffield Unit for Medical Genetics at Liverpool.

Forthcoming Events

MAY

Saturday 15th May: Mothing at Perivale Wood Local Nature Reserve

NB This National Moth Night event is for AES and Bug Club members and their guests only. This event will be led by AES member David Howdon.



There is no charge but please note that **booking is essential**: please inform the AES Secretary that you plan to attend and the precise time and location details will be sent to you.

Perivale Wood is a 27 acre (11 hectare) area of ancient oak woodland in west London. It is bounded to the north by the Grand Union canal, to the south by a railway embankment and houses, to the west by industrial units and to the east by houses and recreational open space.

The reserve is managed by the Selborne Society as a memorial to 18th century naturalist Gilbert White.

JUNE

Saturday 26th June: A visit to Horsenden Hill

This event will be led by AES member David Howdon and will involve looking for butterflies including the White-letter hairstreak, and examining moths caught in the previous night's moth trap. Meet 10.00 am at Horsenden Farm (TQ163840).

This is a joint event with Butterfly Conservation and the London Natural History Society and will be led by AES member David Howdon (email: davidhowdon@yahoo.co.uk; Tel: 020 8426 6621)

Saturday 26th June: National Insect Week Event

Joint meeting with the British Entomological & Natural History Society

Dinton Pastures Country Park, Berkshire.

AES & Bug Club members and their guests only.

The outline plan for the day is as follows:

10.00 am-12.00: Examine moth trap catch from previous night, followed by a talk by a BENHS member and tour of the BENHS insect collections.

12.00 – Lunch at the on-site cafeteria or packed lunches if desired.

1.00-4.00: Bug Hunt to sample insects at Dinton Pastures Country Park, returning to the BENHS building to identify difficult species and to discuss the BENHS library and collections.

The BENHS is a society composed primarily of expert amateur entomologists.

**Saturday 27th June: Osterley Day** (outreach event)

The Society will have a presence at this event at Osterley Park, Middlesex. If any local members would like to assist on the stand on the day please contact the AES Secretary.

JULY**Saturday 3rd July****AES Anniversary Garden Party**

The AES Council is pleased to announce that a garden party will be held on Saturday 3rd July from 12 to 4pm near Reigate in Surrey as part of the 75th anniversary year celebrations.

The intention is to let members get together in a quieter and more relaxed atmosphere than we find at the exhibition, to renew old acquaintances, put faces to email contacts and make new friends, all in good company and pleasant rural surroundings.

For reasons of space numbers are limited to 50. Each member may apply for up to two tickets for themselves and a guest. Tickets are £18 each which will include a quality cold buffet lunch and wine, or non-alcoholic drink. Tickets will be allocated on a strictly "first come first served" basis.

To apply for tickets please send the following to this address: Colin Hart, Fourpenny Cottage, Dungates Lane, Buckland, Surrey RH3 7BD including: 1) A note of your membership number; 2) A stamped addressed envelope, or an email address where you can be contacted; 3) A cheque or postal order for the correct amount made payable to the AES. Cheques will not be cashed until tickets have been allocated.

Treasurers Report for the Year Ending 31st December 2009

It was predicted last year that the General Fund would make loss during 2009 in view of our commencing publication of the *Entomologist's Record*, and so it is not a surprise to have to report that indeed the General Fund did make a loss, in the sum of £1435 for the year. However, this is less that was envisaged and it is encouraging to see that subscriptions for the *Entomologist's Record* are continuing to increase. We must anticipate losses in the next year or two as a result of the steps necessary to improve that journal and thereby increase



readership. It is hoped that the current low levels of investment income will start to improve in the near future. The Bug Club was jointly funded by the Royal Entomological Society (RES) for the first time this year and this has enabled us to make improvements to the *Bug Club Magazine* and run more Bug Club events. RES funding in 2010 will be at the same level as in 2009. The Society received a grant of £800 from the OPAL Project during the year, towards the cost of IT equipment and publicity materials, the sum of £1000 from the W F Southall Trust to fund a wildlife garden and moth trap, and in excess of £2000 was donated to the society in memory of the late Mike Majerus.

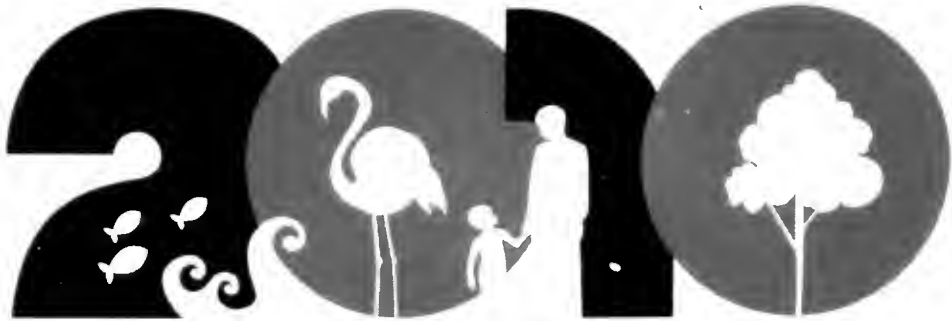
As a result of the continuing downturn in worldwide investment markets, the Crow and Hammond Fund has seen a lower investment income than previously, but an increase in capital values has resulted in this fund returning to a profit, although levels are still lower than a few years ago. I am hopeful that these investments will continue to return to their former level within the reasonably near future. Monies from the fund were also used for promotional purposes and awards.

As a result of the investment losses in financial markets, the Ansonge Fund, used to make awards to juniors, again made a loss in 2009, being only the third time in many years. Again, it is hoped that this losses in capital value and drop in income will only be temporary. Awards totalling £180 were made to juniors.

The Publications Fund has once again made a good profit of £3208, albeit lower than in 2008. As usual, this will be used to fund future publications. No new books were published in 2009, but some are nearing completion and should be ready in 2010.

Peter May
Hon Treasurer
5th March 2010





2010 International Year of Biodiversity

From bugs to bioblitzes – celebrating and conserving biodiversity

by Katie Edwards

Secretariat Manager for the UK partnership supporting the International Year of Biodiversity

The International Year of Biodiversity 2010 has been declared by the United Nations to raise awareness of the importance of biodiversity for all of us. Back in 2002 a global target was agreed by nearly 200 countries to significantly reduce the rate of biodiversity loss by 2010. In October 2010 there will be a Biodiversity Summit in Nagoya, Japan when each country will report back on progress made towards this target and make plans for the future.

The global campaign is being spearheaded by the Convention on Biological Diversity (CBD) which was set up after the Rio Earth Summit in 1992 to ensure the conservation and sustainable use of biodiversity. The countries who signed the Convention aim to communicate three main messages during this year, which are to:

- Stress the importance of biodiversity for our wellbeing.
- Reflect on our achievements to safeguard biodiversity so far.
- Encourage a redoubling of our efforts to reduce the rate of biodiversity loss.

The UK partnership for International Year of Biodiversity (IYB-UK) is being managed by the Natural History Museum and supported in England by Defra (Department for Environment, Food and Rural Affairs). More than 350 partners across the country, ranging from wildlife trusts and conservation organisations to museums, schools and performance artists, have already joined the collaboration. During the year they are organising thousands of events and projects across the country that you can join in with to celebrate and help conserve our natural treasures.



Figure 1. Large blue butterfly *Maculinea arion*, which has been successfully reintroduced to England over the last 25 years (credit David Simcox, Centre for Ecology and Hydrology).

Why does it matter?

Our lives are intertwined with nature. We use plants and animals to produce our food, drink, clothing, building materials, fuel and medicines. Living systems also provide the services we take for granted such as clean air, fresh water, fertile soil, the breakdown of natural waste, plant pollination and the regulation of climate.

The rich diversity of life is currently being lost at a greatly accelerated rate because of human activities. The threats to species and ecosystems include habitat destruction, over-exploitation of natural resources, pollution, the introduction of alien species, climate change and increasing demands on nature from rising human populations.

The most comprehensive assessment of the status of English wildlife, just published by Natural England, celebrates the 55,000 land and marine species that live here. However, the report documents nearly 500 species of plants, animals and fungi that are no longer found in England, the majority disappearing over the last 200 years since the start of the Industrial Revolution. It also lists nearly a thousand species and 56 habitats that are at risk of decline. Species that need safeguarding include all remaining reptiles, whales and dolphins, and a third of land mammals, butterflies and bumblebees. The habitats that need protecting include coastal sand dunes, deep sea sponge communities, estuarine rocky habitats, traditional orchards, ponds, rivers and hedgerows. The conservation of these species and habitats



involves many organisations and individuals working tirelessly to identify species, assess distribution and monitor habitats, to create protected areas, and to campaign for legislative changes. A new, more holistic approach to conservation management stresses the importance of the land in between protected nature reserves to create much larger habitat areas and links between conservation sites.

For example, traditional orchards support a wide range of insects and birds as well as a variety of fruit trees. To halt the loss of this unique habitat, the National Trust along with 15 partner organisations launched an initiative in 2009 to conserve and restore traditional orchards. Butterfly Conservation has used information collected so far about different orchard sites to find out more about the mistletoe marble moth (*Celypha woodiana*). This tiny speckled moth, giving the appearance of a bird dropping when resting on a leaf, is found mainly around the Severn Valley and Welsh Borders and has priority species status in the UK Biodiversity Action Plan. The moth lays its eggs on mistletoe leaves enabling the larvae to tunnel into the leaf and feed on it until they pupate and emerge as adults. The information collected about the moth's behaviour during the traditional orchards project will be essential in drawing up a strategy to help conserve it for the future.

Otters are a familiar and much-loved British species that have suffered massive losses in numbers over the last 200 years due to pollution, habitat destruction and hunting. Since the 1970s the Environment Agency has been committed to improving riverbanks and



Figure 2. Mistletoe marble moth *Celypha woodiana* (credit Mark Parsons, Butterfly Conservation)

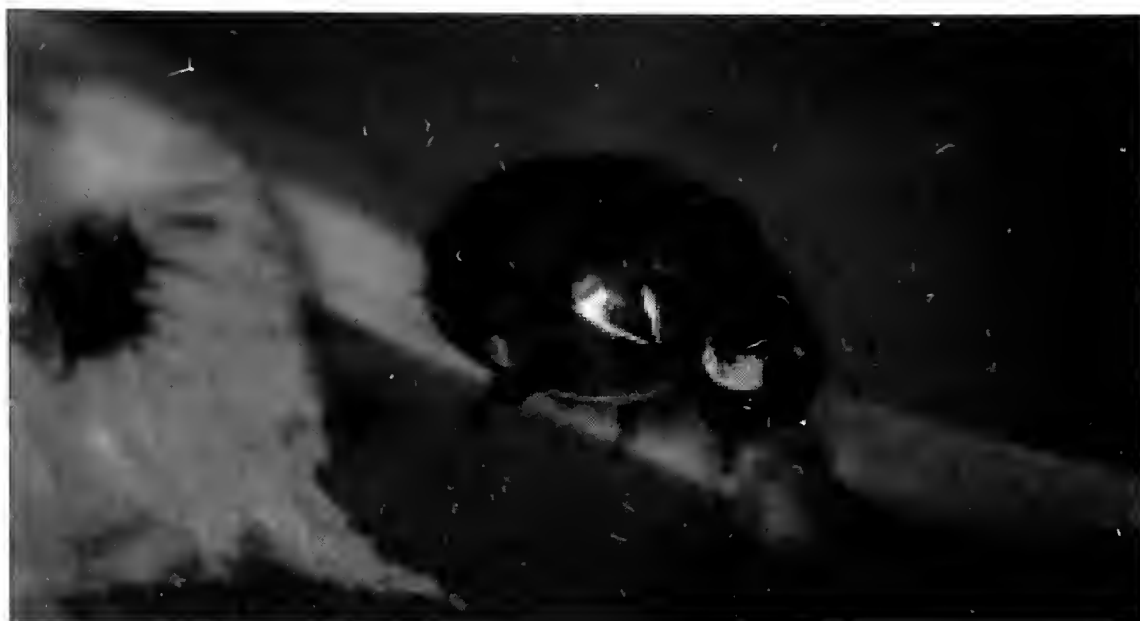


Figure 3. Harlequin ladybird *Harmonia axyridis*, an alien invader threatening native species (credit Centre for Ecology and Hydrology)

wetland areas where otters like to live resulting in a significant increase in the number of otters and the habitats in which they are found. This is good news not only for the otters but also because their return indicates a healthy environment as they need clean water and plenty of riverside vegetation to survive.

One biodiversity issue that's getting a lot of attention this year is that of invasive species. In February Defra (Department for Environment, Farming and Rural Affairs) launched their Be Plant Wise campaign. They want gardeners to be more responsible about the plants they grow in their ponds and the way they dispose of unwanted plants. The creation of more ponds is generally encouraged as they are considered good for garden wildlife. They usually support a diversity of plant and animal life but some alien species can take over and cause damage both to pond wildlife and the wider environment.

The floating pennywort, a popular pond plant, was only introduced to the UK from North America in the 1980s. Less than ten years later, in 1990, it was first recorded in the wild. It has quickly become an enemy invader because it can grow an astounding 20 cm a day, re-grows from small fragments and forms dense mats of vegetation that suffocate waterways.

The floating pennywort along with parrot's feather, New Zealand pigmyweed, water-primrose and water fern are the five non-native pond plants being targeted in the campaign because they cause the most damage to local ecosystems if they get accidentally released in



the wild. The rampant growth of alien species means they quickly take over a new habitat by smothering native plants, clogging waterways and taking oxygen from the water leaving fish unable to survive. This not only destroys local biodiversity but also costs the economy millions of pounds to remove and control the invaders.

The National Biodiversity Network is launching their Recording Invasive Species Counts to engage everyone in monitoring non-native species. The public has already successfully helped to plot the spread of the Harlequin ladybird, which first appeared in south east England in 2004. It has spread at an alarming rate, reaching Orkney by 2008. It feeds on the larvae of native ladybirds and insects that are beneficial to our ecosystems, possibly threatening over 1,000 native species. The Centre for Ecology and Hydrology run the ladybird survey and plan to use the results to test how effective natural control measures methods are.

From the end of March, people will be asked to look out for another six invasive species across the UK; three animals (the muntjac, Chinese mitten crab and zebra mussel) and three plants (the water-primrose, tree-of-heaven and American skunk cabbage). The idea is to find out more about the distribution and lifestyle of these species by asking the public to spot them and record the details online.

Gardens are big news for International Year of Biodiversity as it's a good way to encourage everyone to increase the diversity of plants and animals on their doorstep. There is plenty of good gardening advice available from Natural England's Big Wildlife Garden (<http://www.bwg.naturalengland.org.uk/>) and London Wildlife Trust's Garden for a Living London (www.wildlondon.org.uk/gardening). Biodiversity is being championed at Chelsea Flower Show this year but it is also being promoted in less obvious places such as churchyards, bee hives in the City of London and window boxes in Brighton.

A more long-term garden project is being run by the Royal Horticultural Society assessing how different plants attract invertebrate diversity. The Plants for Bugs project will be the first full investigation comparing native garden plants with near native (Northern Hemisphere) and exotic (Southern Hemisphere). They will recreate domestic gardens at Wisley with the three planting regimes and regularly sample the diversity and numbers of invertebrates. Ultimately they will be able to give gardeners the best advice on what to plant to increase biodiversity, but not until the project finishes in three years.

To find out more about what's happening across the UK this year, please see www.biodiversityislife.net or follow IYBUK on Twitter or Facebook.



Mantids found in this area – an update for 2009

by David Keen (3309L)

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

After 2008 had turned out to be a very poor year for the observation of these insects in and around our village (see References below), I had hoped that 2009 would see an improvement. Unfortunately, this did not prove to be the case and the year was worse than the previous one! In fact, throughout the year I only managed to see these insects on six occasions. However, for the sake of good order and because some of the records do add to the information of our local species I have decided to write this article.

Before reviewing the species seen in 2009 perhaps we ought to consider why there are so few records this time. The weather could well have been a major factor with the winter of 2008-09 being cold. It was by far the coldest we had encountered since we moved here in 2004 – with the average temperatures from November to March being the lowest for many many years. It was also very dry as was the following Spring, Summer and Autumn. In addition, I was in England for about two weeks in June/July and for a long weekend in September which meant that I was unable to make any local observations during these periods. Otherwise I am at a loss to understand why these insects were so conspicuous by their absence.

I will now discuss the species which I did manage to see, in the same order in which they appear in my Introduction to this group, published in 2008. *Hierodula bioculata*, our largest mantid, turned up twice in 2009. The first, a male, came to light during the late evening of 9 October. This was the first time that a specimen of this species had come to light and was, also, only the second record that I have of it in or around our house – the previous one was found in the road in front of the house on 2 October 2006. In the hope of finding a mate, I kept this male which fed well on flies and moths until it died suddenly on 27 October. On 13 November another male came to light but this specimen was released in the garden the following morning. It quickly flew away and was not seen again.

The next species, size wise, is The Praying Mantis, *Mantis religiosa*, and again I have two records. On 7 July a large nymph was seen on the garden wall. Despite careful searches during the following few days I did not see the nymph again. A female of the brown form was seen during a walk in the local countryside on 6 October. I left it where it was, sitting on a low bush by the side of a narrow path.



During the years 2005 to 2008 inclusive, nymphs of the distinctive *Empusa egea* had always been regular visitors to our garden. Often individual specimens remained on the same plant or bush for several days, occasionally for two or three weeks. It had not been uncommon to see two or three nymphs at the same time in different part of the garden. However, I never saw even one nymph in or around our garden during 2009. The only nymph seen was in short grass on the edge of a main track in the countryside on 26 March. I did not see any adults of this species at all.

The most exciting observation, for me at least, was made on 12 September. My wife, Wendy, called me into the garden during the early afternoon as she had seen an interesting small mantid flying not far from our front door. Rushing out of the door, I was quickly able to find the specimen which was now resting on the garden wall. It was so different to any mantid I had seen before I thought it must be a "new" species for me to add to our local list. After capture, however, I realised that it was a male and, checking the literature, determined that it was a specimen of *Ameles abjecta*. It was the first male of this species that I had ever seen. In this species the sexes look completely different. The female is squat, has a diamond shaped abdomen and is wingless. However, the male has a thin cylindrical abdomen and its wings protrude beyond the tip of the abdomen when at rest. Although this is a small species, the male readily takes flight and is a relatively strong flier.

I hope that 2010 will produce more records. It will certainly be interesting to see how many specimens turn up particularly as we are currently enjoying (or not actually enjoying) our wettest winter on record! In the three weeks from 17 December 2009 we had the equivalent of two years' annual rainfall in this part of Spain. I recorded 336mm (13.5 inches) in the garden and we have had a lot of rain since. This has caused floods and landslips in the countryside so we will have to wait and see how this will affect the sightings over the coming months.

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Insect Displays

by Archie Murchie

Agri-Food & Biosciences Institute, Newforge Lane, Belfast, Northern Ireland, BT9 5PX.

Communicating science is becoming increasingly important these days, and in addition to events organised for its members the AES has attended events to publicise entomology as well as to publicise the Society and the Bug Club, including countryside and wildlife open days and other societies' events. The National Trust and local government biodiversity officers are often keen to have someone from societies such as the AES take part in local events, such as the 'Wales Biodiversity Week', for example. Very often, a simple table display with leaflets is all that is required (and the AES can supply leaflets – just contact the Secretary if you would like some). Any insects on display – including stick insects which children can handle – usually make a great impression on children – and their parents!

With National Insect Week this year (21-27 June 2010) I thought it might be useful to share some thoughts on manning insect displays or exhibitions for the Public, in particular those aimed at children. I have done this on a number of occasions for previous National Insect Weeks but also as outreach events on behalf of my Institute (a Government agricultural station). Although these have been targeted at farmers, the overall approach has been similar.



An entomology display at the National Ploughing Championship (Co. Kildare).



For an event, we would typically have three tables, with a colourful backdrop. We are fortunate to have professionally produced pull-up displays but what seems to have most effect is a splash of colour. For one event we simply printed out lots of insect photographs on A4, laminated them and blue-tacked them to the wall.

The three tables in front of the display form 'stations'. On the central station we have our laboratory microscope, which has a video camera attached and outputs live images to a monitor just beside it. The microscope is our main display tool. Beside the microscope, we have a selection of live insects and other invertebrates, preferably collected that day from the local environment. One thing that we have found is that the most 'mundane' and common of insects are perfectly suited for exhibition purposes. Most people have not seen a woodlouse or earwig down the microscope. The other advantage of locally-collected insects is that they can be returned to their habitat and new 'volunteer' insects recruited during the day.

It is important to ensure that people manning the stand have some good information about the specimens. Earwigs make an ideal talking point. For example, you can discuss the fact that their large elegant wings are tightly packaged away underneath the small leathery forewings or that the male earwigs have curved pincers, whilst those of



Microscope outputted to a monitor is an ideal display tool.



the females are straight. The maternal care exhibited by earwigs is another good fact and often people are genuinely taken by this. Be prepared however for questions relating to pest control or insect contaminants (e.g. earwigs crawling into peoples' ears)... to name but only a few. Another approach is to have different lifestages of an insect. We have used caterpillars, chrysalises and mounted adults of the Cabbage White butterfly to illustrate this. The options are pretty much wide-open and it is best to go with something with which you are familiar and develop your own spiel as the day progresses.

We have the microscope facing the Public and encourage them to look down the eyepieces, as well as looking at the monitor. Although many of us take microscopes for granted, they can have tremendous educational value in themselves. For example, at one event, we ran an informal 'Dirty Fingernails Competition' using the microscope. For small children, you need to have some sort of solid platform for them to stand on, to allow them to look down the microscope. A fold-out stool, found in most hardware shops, will do at a push but a custom-made wooden platform is better and easy to make. Microscopes are expensive and have to be manned at all times. Although we encourage the Public to focus the microscope for themselves, a determined child (or adult) can strip a focussing column thread if not supervised! We have had no problems at all with theft, even at large Public events; nevertheless the microscope, light-box, and television are all secured with a Kensington lock.

At the second station we have mounted specimens, model insects and a laptop (also Kensington-locked). We run the lifecycle of the 7-spot lady bird on the laptop. Spectacular close-up footage is available from www.entofilm.com on DVD. Another possibility with the laptop is to use a USB digital microscope to present live images. The image is not as good as with a dedicated microscope but it does allow specimens to be examined from different angles and is considerably cheaper (these are available from the likes of Maplins www.maplin.co.uk). The insect models we have are laboratory quality models from Somso Modelle (www.somso.de/english/index.htm). These are not cheap but are excellent teaching tools. We tend to take along the relatively robust housefly head and, as it is just slightly smaller than a child's head, you can hold it up and make a direct comparison of the size of eyes, position of the nose (antennae) and mouth. Mounted specimens, whilst useful, are not as popular as live insects. Again, I would not worry too much about displaying spectacular specimens and definitely not those that are valuable or delicate. What is key here is to have specimens that can be picked up



and looked at, either by eye or down the microscope. As with the live specimens, having a good pattern behind the specimen is paramount and if they can be linked in with other specimens (mounted or live) in a 'story', so much the better. An example that we have used is that of disease transmission by flies, with some mounted blowflies leading on to the housefly head, then the mosquito head and finally some living examples of mosquito larvae collected from about one mile away... leading to the comment "I never knew we had mosquitoes in Ireland!"

The final station is a box containing leaf litter, soil and some stones (or alternatively, pond water, weeds and associated fauna). We use white storage boxes from IKEA. These are relatively shallow and allow children to explore the litter habitat close up, turning over the leaves to see millipedes, centipedes, springtails, slugs, snails etc. We have found that slugs and snails are surprisingly popular, and again, especially if you can explain some of the structures and biology. We allow the children to gently handle the beasts but try and refresh the litter box every so often so no creatures are harmed. Afterwards it is important to make sure that the children wash their hands or that you have an antimicrobial gel wash for hygiene purposes.



Some of the volunteers manning a National Insect Week display at Belfast Zoo.



In our case, each station would be manned by a different person and when we have a group of children then they would be split-up and rotated between stations. As a general rule of thumb, we prefer to have 6-7 children at any one station at a time. That sort of number allows you to talk to each child. Once you get more children, then those at the back cannot see and they start to lose interest. Freebies such as pencils, lapel stickers and information leaflets are always handy to have and appreciated. For school groups, we normally put together a small information pack for the teacher so that he/she can discuss with the class afterwards.

I have found being involved in exhibitions to be hectic and great fun in probably equal measure. There is something rewarding about talking directly to the Public (especially children) and sharing your own passion and enthusiasm. I have also found that the Public do not expect you to know everything about insects (thankfully!) but are often quite content just to hear about your own work or interests. Give it a go.





J W Tutt and the lost world of varieties

by Rob Partridge (8956)

11, New Road, Mepal, Ely, Cambs CB6 2AP

rpartridge3@aol.com

I bought a copy of *Practical hints for the field lepidopterist* as soon as it was published by the Society in 1994. Before that Tutt had been to me little more than a dusty name from a bygone age, appearing in the text books, usually in brackets after some detail of form or variety. The *Practical hints* was a revelation, of course, as it had been to many interested in entomology before me, and my copy is well-thumbed now. One is immediately struck by a number of things: the sheer volume and detail of the knowledge that one man was able to accumulate; the breadth of his interests – he makes no distinctions between butterflies, macros and micros, all are equally fascinating and worth pursuing; his endless suggestions to the amateur as to what further researches might prove interesting, and the number of other lepidopterists with whom he was in regular communication, from lords of the land to humble village parsons. One senses that his energy and enthusiasm were inexhaustible.

A few years ago I managed to acquire another of Tutt's publications – a four volume set of *The British Noctuae and their Varieties*. My first volume was published in May 1891, followed by the others in January 1892, June 1892 and December 1892. To me, they are works of extraordinary scholarship and how he managed to produce them in such quick succession is remarkable – think about how long it takes teams of people to produce successive volumes today! At the same time he was working as a schoolteacher – a profession no more highly paid or regarded then than it is now – and also producing some of the 900 articles, notes and reviews for other parts of the entomological press. As if that isn't enough, he founded in 1890 and edited for the next twelve years the very same *The Entomologist's Record and Journal of Variation* with which the Society has recently joined forces. I am not attempting to write a biography of such a man here, however, but simply drawing attention to one aspect of his work – the subject of variation in our Lepidoptera, particularly the moths.

It is clear that this was Tutt's abiding passion. That he was able to produce four closely written volumes about the variation in just one family of moths is an indication of both the complexity of the subject and of his capacity for getting to grips with that complexity. The main body of the work consists of the description and the naming of the



forms which he felt worthy of the title 'variety' – and there must be thousands of them. It is all done with words – there are no drawings or diagrams. Interestingly, in one of the introductions, he confronts the issue of terminology as far as variation is concerned – race or form or variety or subspecies and so on – and I find that this has yet to be resolved in any scientifically meaningful fashion. The short statement about sub-species and forms in Waring and Townsend's *Field Guide to the Moths of Great Britain and Ireland* summarises clearly the modern view of the matter, simply preferring the word 'form' to Tutt's 'variety': 'It is clear that intergrading regional differences occur in many species... All this variation, and other mutant forms... has been a source of fascination since the earliest days of the study of moths.'

I wonder if most modern moth recorders are as fascinated by this phenomenon as their predecessors. The variation can often be a source of confusion, perhaps even irritation as we struggle to match that odd-looking specimen to some rarity or other in the field guide – it surely cannot be another version of the Common Quaker, *Orthosia stabilis*, though, in the end, it usually is. Now we are concerned, quite rightly of course, with tetrads, distribution maps and population trends, with ecology, phenology and moths as climate change indicators; some of us are mainly concerned with lists of moths, the rarer the better, rather than the moths themselves but they too have a small part to play in the huge harvest of information now taking place as records are digitised and processed into action plans. The study of variation and the naming of subtle forms doesn't seem sexy any more – and it requires years of patient observation, recording and thinking. Finally, of course, some may see it as tainted with the hand of the collector and his rows of not quite identical specimens. Now that we have digital cameras, is it really necessary? Perhaps, perhaps not – though I do wonder if anyone is seriously photographing and cataloguing all the different forms of the Clouded Drab, *Orthosia incerta*, that they catch, year in, year out.

As an experiment, I open my cabinet at the *Agrocholas*, those autumn-tinted moths that tell us as surely as the changing leaves that the year is turning again. There are not many of them and most were collected a good few years ago. What would JW have to say about this short series of the Beaded Chestnut? First of all, of course, he would not recognize the scientific name, *Agrochola lychnidis* – to him it was *Anchocelis pistacina*; if you ever buy his book about variation in the British noctuids, you will find the Society's 'An index to the modern



names, for use with J W Tutt's practical hints for the field lepidopterist' indispensable. But he would recognize the moth itself and, what is more, he would be able to name there, thanks to the prodigious memory that so many remarked upon, some of the varieties described in his book. Those two at the top must be var. *obsoleta* – 'Pale reddish-ochreous, unicolorous'; next, a single example of var. *unicolor-brunnea* – 'Brown (slightly ochreous), almost unicolorous'. Then two of var. *pistacina* – 'Pale reddish-ochreous, with distinct markings and pale nervures', followed by one var. *venosa*, Haw. – 'Brown, with distinct markings and pale nervures'. I'm not sure about the next one but the last two must be var. *serina*, Esp. – 'Pale greyish-ochreous with distinct costal streaks and stigmata'. And if you think that is a lot of fiddling just to sort out one common species, well, as they say, you haven't seen anything yet. When we turn over the page we see not the next species but another *three* pages devoted to the Beaded Chestnut. Each variety has its own paragraph giving, often, the history of the form if it was named before Tutt, further detailed descriptions, often in Latin, and notes about where Tutt himself had found the variety or from which other lepidopterists had sent him examples. The work on *A. lychnidis* is by no means unusual; when he is dealing with species that really excite him – such as the White-line Dart, *Enxoa tritici*, and the Garden Dart, *Enxoa nigricans*, situation, he starts going into *detail!*

I admit to a love-hate relationship with this book. Sometimes it seems to me a work of near-madness, the Victorian love of classification taking us into some strange and almost incomprehensible lost world. At other times it is, surely, the product of genius. We remember Tutt today as a collector, a classifier and as an editor but to his contemporaries, it seems – as stated in *The Aurelian Legacy* - he was much admired as a scientist. Born in 1858, he arrived in the same year as Darwin and Wallace published the ideas that would change the modern world forever, that are changing it still as we find new truths in the theory of natural selection. Tutt embraced Darwinism wholeheartedly, and there can be no clearer evidence of this than the fact that it was Tutt himself who first noticed and drew attention to the rise of melanism in the moths that he was receiving from industrial areas.

Why are some of our moths so variable in their appearance? This apparently simple question, Tutt realised, is perhaps the biggest one of all. If we could answer it, and I mean really answer it the way that Tutt intended to before he died at the early age of 53, we would know so



much more about life itself. Of one thing I am certain: when Tutt looked into a box of moths, or if he was with us now and could peer into a Robinson after a warm night in late July, he would still see more than me.

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An Intermediate Comma Butterfly (Lepidoptera: *Polygonia c-album* L.)

by Jan Koryszko (6089)

3 Dudley Place, Meir, Stoke-on-Trent, Staffordshire ST3 7AY.

At midday on 27th October I was in my garden tidying my shrubs. The weather was quite sunny but rather cold. I noticed a Comma butterfly (*Polygonia c-album* L.) sunning itself on my south-facing lounge wall. Its wings were opening and closing. I could see that it was a rather pale on the upper side, and fulvous brown and ochreous, with some darker patches, on the under side. It looked like an intermediate between the typical form and var. *Hutchinsoni*.

The last time I saw a Comma Butterfly similar to this was in the autumn of 1984, at Barlaston Rough Close Common, Staffordshire. It was flying amongst more typical specimens.

The intermediate form is mentioned in Edmund Sandars' *A Butterfly book for the pocket*. F. W. Frohawk's *Complete book of British butterflies* goes into more details of the life history of the Comma Butterfly – here are some of his interesting points and notes:

“The Comma presents a remarkable feature which is unique among British butterflies: it is double brooded and hibernates in the imago



state. Pairing takes place after hibernation. The females start depositing in April and continue throughout May. Of the total number of eggs laid by a single specimen, between 30 and 40 per cent and always the first eggs laid produce butterflies of the aberration *Hutchinsoni*; while the whole of the remaining eggs produce the normal type. The *Hutchinsoni* pair at once and produce the second brood, all of which are the normal type. These start emerging in August and continue until October. All of the ordinary type hibernate and pair in the spring with the hibernated examples of both the first and second broods. As a rule, the normal type of the first brood enter into hibernation very early, very shortly after emergence. It will be seen that two distinct types of butterflies, both in structure and in colouring, are the offspring of the same parent. I always considered that ab. *Hutchinsoni* belonged to a distinct brood, and was called the summer brood, as it was the first form to emerge, until I disproved this by rearing a large number of both forms from the same parent. In both forms great variation occurs in the entire coloring of the under surface. Some specimens are beautifully mottled metallic green. There have also been some striking aberrations over the years – pale yellow, pearl white and some almost black specimens. On the underside the usual white C is sometimes replaced by a white F.”

I wonder if the intermediate form of the Comma may become more common with the onset of global warming? It may be affected by earlier spring times and longer, warmer autumns.

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The Butterfly Valley (of Tiger Moths) in Turkey

by Paul Waring (4220) and Rachel Thomas

Windmill View, 1366 Lincoln Road, Werrington, Peterborough PE4 6LS.

We spent 20-28th August 2007 in Turkey. The main purpose of the trip was to enjoy a week of sunshine with our seven year old daughter Kirsty while the British Isles was experiencing a summer of generally unsettled weather. Of course we took the “Waring tropical” 6W actinic light-trap with us to record any moths in our travels. This is article is a summary of what we found.

Our home base for the week was the Sahin Apartments on the outskirts of Dalyan. The light-trap was operated here all night every night of our one week stay. It was hung up on the balcony of our first floor apartment, overlooking rather genteel grounds, beyond which there was much disturbed ground, including field edges and building activity. Moths here proved to be thin on the ground. The only frequent species was the Dark Mottled Willow *Spodoptera ciliium*, with 6-10 individuals per night. The only other species seen were one tiny example of the Silver Y *Autographa gamma* form *gammina* on 22nd August, one Vestal *Rhodometra sacraria* (pale yellow form with narrow



Figure 1. Sahin Apartments, Dalyan, Turkey.



pink stripe) on 24th August and two of the pyralid moth *Palpita unionalis* on 25th August. This was no doubt due to the fact that Dalyan was at the height of an unusually intense dry season, with only about five days of rainfall since January, seven months ago! Our apartment was surrounded by mainly exotic plants including a tall *Robinia* by the balcony (Figure 1) and *Lantana* in flowerbeds, but there was a vacant lot adjacent with some native plants and we hoped for somewhat larger catches. The surrounding area comprised rocky countryside with flowering Oleander bushes on the roadsides, Pomigranite trees in orchards and pines on some of the slopes. Virtually no butterflies were seen during our stay. Of more interest was a trip we made to Faralya to investigate a steep coastal gorge known locally as Butterfly Valley. This valley is sufficiently well known in Turkey to be mentioned in some of the guide books and excursions to it by boat are advertised in the nearby tourist resorts.

Some readers may be aware of a famous Valley of the Butterflies on the island of Rhodes which is just 20km off-shore from this section of the Turkish coastline, at the nearest point. The butterflies in question on Rhodes are in fact the Jersey Tiger moth *Euplagia quadripunctaria*, (protected here by an EC Directive). The moths accumulate here in some numbers. This has long been known to PW, who suspected the same might be true of the valley on the Turkish mainland (Figures 2 & 3). When we arrived at the head of the valley, at the village of Faralya, in our hire car, we found a roadside café, and after we had all enjoyed ice creams on the balcony overlooking the valley, we mentioned our interest to the proprietress. "You want butterflies, come with me" she said, and took us down round the back of the café, where she had several basement-like rooms for laundry work etc. These were by a stream in a grotto shaded by trees. There in a sheltered, shaded doorway and windows were eight Jersey Tiger moths, all of the form with the red hind-wings. The time was 18.00hrs and the moths were roosting, but they were sufficiently skittish that four flew away almost immediately we approached them and before we could get a photograph. PW managed to get still photos and video of the others (Figures 4 & 5). The woman was quite clear that the moths accumulated near water, such as the stream, presumably to benefit from the humidity. The vegetation deep in the valley was also notably lush than in the surrounding area, which was arid. From the café it is an hour's steep walking to the floor of the valley and an hour back. It was too late in the day for us to tackle this, but the lady assured us that we would see similar numbers flitting about the stream-side and that in late July and early August numbers were greater (exactly as one



Figure 2. Steep coastal gorge, near Faralya, Turkey.



Figure 3. Closer view of the 'Butterfly valley'.



Figure 4. Jersey Tiger *Euplagia quadripunctaria*.



Figure 5. Jersey Tigers *Euplagia quadripunctaria*.



would expect from the flight season in Britain). Indeed we did see a few more flitting off tree-trunks by the stream. The area is worth visiting for this sight alone, and at the peak of the flight season it must be an even more impressive lepidopteran experience. Visitors to the area will find a number of nearby hotels and guest houses and also some other memorable wildlife encounters. While at Dalyan we were able to go on an excursion early one morning to see large wild turtles being fed. We also had a go at a scuba-diving excursion amongst a range of fish species, and there were many boat trips which took us into the marshes of the Dalyan delta. The weather was superb, the local people friendly and helpful and the destination can be recommended as an economic European package holiday with more wildlife-viewing opportunities than the average.



Figure 6. Watching Sea Turtles by boat.



Figure 7. View of the Turkish coast.



Notes and Observations on *Rhagium mordax* Col.: Cerambycidae

by Jamie C. Weir

32 Paul Drive, Airth, Falkirk, Stirlingshire, Scotland FK2 8LA
E-mail jw@jweir.orangehome.co.uk

Suspected Mating Behaviour Exhibited by *Rhagium mordax*

Last year, on the 30th of June, I was surprised to witness some interesting behaviour, which I believe to be mating behaviour, shown by *Rhagium mordax*, when collecting on the shores of Loch Earn, in Scotland (4-Figure Map Reference for Location 6524). I was beating some Downy Birch trees (*Betula pubescens*) when a pair of scurrying beetles caught my eye on the gravel, at the very edge of the loch. Naturally intrigued, I proceeded to walk over and take a closer look at them. I realised at once that they were Cerambycids (Longhorn Beetles) but it was not until identification guides were consulted later that I was able to say conclusively to which species they belonged.



I watched the two beetles run around for a while and noticed that one was noticeably smaller than the other. This smaller beetle swiftly gained speed on the larger beetle and then pulled itself up onto the latter's abdomen. Despite the larger beetle's desperate attempts to escape the smaller one was now firmly clamped on. The larger beetle, which I now guessed was the female, appeared very alarmed and she frantically ran around in an attempt to throw the 'male' off. Occasionally she would use her rear pair of legs to try and push him off, however this never succeeded. (Another observation which may account for the males strength of grip is his ability to climb with ease vertical objects, and even adhere to glass. The female does not seem capable of this.) After a while the actual mating occurs and the male appears to simply drop off. The whole process then repeated itself for several times.

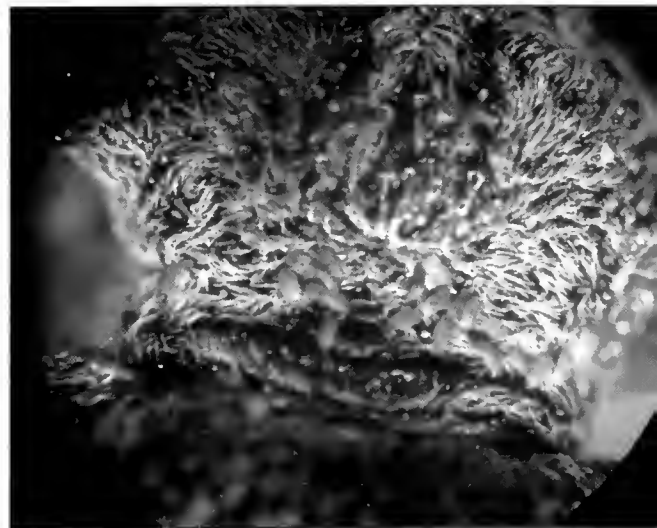
Both beetles are shown in Figure 1, the insect on the left I suspect is the female and on the right the male. The figure clearly shows the size differences between the sexes.

Parasites of *Rhagium mordax*

The two beetles described above were collected, as I had never come across the species before, and was thus unsure of their identity. However, after they were pinned I never had a good look at them under the microscope until very recently. When I did examine them I noticed many mites present on the thorax of one of the insects (Figure 2), the beetle which I suspect is the male. Strangely, there is none whatsoever on the female beetle.

The parasites have probably remained on the beetle because it was placed in the freezer to kill it, rather than using ethyl acetate, so they were 'frozen' in place on the specimen. Figure 2 shows the number of mites and the area of the insect which they covered. (Note, Figure 2 is shown at 60x magnification)

Unfortunately, my microscope is not powerful enough to allow me to examine these parasites closer, and thus I cannot describe them in much detail. All that can be gathered is that they are definitely mites, but very tiny ones.





25 Years of Butterfly Recording 1984-2009

by Ashley Whitlock

Hampshire & Isle of Wight Butterfly Conservation
Duke of Burgundy and Purple Emperor Co-ordinator
61, Adames Road Fratton Portsmouth PO1 5QE.

'You ask what is the use of Butterflies
I reply to adorn the world
And delight the eyes of men'
John Ray 1710

My interest in butterflies began in 1984 when I joined Butterfly Conservation, but I never thought 25 years later I would have seen so many species of butterfly and moths in my home county of Hampshire, the Isle of Wight and outlying counties in the south-east corner of England. I have always loved photography, with ship's photographer being one of my many jobs whilst serving in the Royal Navy between 1972 and 1996. Much of my spare time between long voyages to exotic places was spent photographing insects. Butterflies would cut a very deep groove in my quest to conquer photographing insects in the wild, and opened a window into their secret world. I started in my Father's back garden with the Small Tortoiseshell, (when they were very common!) on an old Buddleia bush.

I had bought the book *Butterfly Watching* by Paul Whalley, which gave good tips of where to go and what to see, but looking at it now it certainly looks a bit dated. Never the less it is a very important book for novices, like I was so many years ago.

Things have really moved on with the landmark publication *The Millennium Atlas of Butterflies of Britain* published for 2000, which highlighted the difficulties many of our species were having over the country. This really paved the way for many other publications, none more so than Hampshire's flagship publication, *The Butterflies of Hampshire*, which was published for the millennium and highlighted the great enormity of the geology and wealth of Flora and Fauna in Hampshire which aided particular species to breed and survive.

Media coverage has expanded beyond all recognition, with Television, the Internet, and Newspaper and Magazine coverage being almost a weekly event during the main butterfly season now. Twenty five years ago it was certainly a different story.

I remember a very good weekly television programme called *The Living Isles*, presented by Julian Pettifer, showing a high rise



observation platform in the main ride of Pamber Forest, which was quite a revolutionary idea in an English wood at the time but now this sort of 'canopy' intrusion into the lives of butterflies is almost common place.

The programme quoted 'On top of the Oak canopy could be seen multitudes of Silver-Washed Fritillaries, White Admirals and Purple Emperors'. I seem to remember nobody batted an eyelid at this statement, at the time, however this would be a very welcome sight today.

Of course Sir David Attenborough, as patron, has done Butterfly Conservation a great service with his excellent programmes on wildlife especially those portraying butterflies, other associated insects and plants associated with these glorious insects.

My career in the Royal Navy took me to many foreign places, far and wide, one of the highlights was Venezuela in South America. In 1990 I was part of a group from *HMS Birmingham* visiting Angel Falls, we all stayed at the site where the 'infamous' film *Arachnophobia* was filmed, fortunately I never saw any large spiders, but the butterflies were fantastic. Several Swallowtails and Bird Wings were seen flying around our huts in the very early morning light, and the visit to Angel Falls is one of my most treasured memories.

While serving on *HMS Birmingham* I visited Kenya in 1991, when I climbed Mount Kenya doing the 'Kip Kino' route which took three days. On the plateau of the Mountain there was plenty of wildlife, with many species of butterflies, I noted halfway up the Mountain the landscape and the vegetation looked very similar to Hampshire and I felt right at home. At the last camp before reaching the top, I saw the Milky Way in all its glory, which is a sight I've always thought as a highlight of my life, this together with the view of the sunrise over the Serengeti Plain from the top of Mount Kenya are unforgettable experiences.

In Florida, on another occasion, I saw many new species that I had never seen before and of course Monarch butterflies, famous for flying in their multitudes, were everywhere.

In the West Indies I visited many of the Islands; the most notable for butterflies was Cuba which is one of the hottest places I've ever been to. I saw one day, just in the middle of an old dirt track, hundreds of Whites and Yellow Sulphurs mud puddling. As I walked through them, they flew around me like confetti then they just settled down to feed again.



Typical Hampshire downland
– part of the new South
Downs National Park



A Purple Emperor 'assembly point' – A tall oak tree on the edge of woodland



In 1988 the Aircraft Carrier *HMS Illustrious* was anchored off the coast of Majorca, where at night I noticed large 'insects' flying around the upper deck lighting; at closer inspection they were hundreds of Painted Ladies. They were obviously on their long migration to Europe. I also saw them during the day feeding in puddles of salt water on the upper deck where I rescued many from a sailors' boot.

Since I left the Navy in 1996 I have visited several European countries such as Italy, France and Sicily, looking for their native species of butterflies. I visited the Lake District in Italy, in the northern part of the country, where in 2001 there were good numbers of Rock Grayling, Meadow Fritillary, and Spotted Fritillary in the many wooded areas. However in the woodland rides a '*Valezina*' Silver-Washed Fritillary decided my leg was a tree trunk, where she laid many eggs from my walking boots upwards, she then duly flew off never to be seen again. I hasten to add that all the eggs must have perished the next day on a visit to the Matterhorn, due to the very cold temperatures.

A few years later I also had a wonderful experience with a Silver-Washed Fritillary – a bit closer to home in Butterwood near Basingstoke. I encountered what is known as an *ab* '*Nigrizina*', a black female which flew around some Bramble like a bat. Although she never settled I was totally mesmerised by this wonderful spectacle, she promptly flew up into a nearby Oak tree where I could see her very clearly through binoculars in the glorious afternoon sunshine.

Several years ago, near Mount Blanc in France, I saw many species of butterflies and moths in the many meadows amassed with wild flowers. These glorious meadows remain as they were in the far off days as there is no crop spraying there. Here Marbled Fritillaries, Swallowtails and Black Veined Whites are very common, with Field Pansies being one of the most common species of wildflower. At this altitude, amongst the frost and snowy conditions, the Queen of Spain Fritillary could be found. In milder conditions, in a park opposite our hotel, I found a female Map butterfly busying herself with laying her eggs in amongst a good stand of Nettle. She was completely oblivious to me as she went about her business, laying her 'strings of pearls' underneath a leaf. I went back the following day, to see how the eggs were getting on, only to be confronted with a park attendant with trimmer in hand 'tidying' up the park. I do wonder how long this delightful butterfly will take to naturally colonize this country, let's hope this species can enhance Britain's flora and fauna very soon.



I took a more active part in Butterfly Conservation, when I became the Co-ordinator of the Duke of Burgundy butterfly for Hampshire and the Isle of Wight in 1999. Straight away the task for this butterfly was enormous; records only came from a handful of sites, however over the years the butterfly has been noted far and wide over Hampshire, even though most of the colonies are very small, (between 2-10 individuals). The butterfly was recorded in 2009 at more than twenty sites in Hampshire, but over the last decade there have been no record of sightings from at least five previous sites, and is probably extinct from the Isle of Wight. However Hampshire is blessed with some of the best sites in the country, particularly in the Meon Valley.

The new '*South Downs National Park*' could and should enable a viable and detailed study of this butterfly, at its eleventh hour of need.

I became the Purple Emperor Coordinator for Hampshire in 2001, knowing this spectacular species from Bentley Wood, Butterwood and particularly Botley Wood, my local woodland. Before the building of the village of Whiteley I used to see it on the ground on a regular basis. One particular day in July I had a very friendly male imbibing on my camera case for well over two hours. He was sucking up the 'mineral salts' which the males require during mating. The sight of a male 'wing waving' on the ground flashing its Purple Sheen and catching the sunlight on his forewings is the sort of experience which stays with you a very long time, and certainly gets you hooked.

In 2002 a study of the Purple Emperor was started in several areas in the country where this butterfly flies in good numbers. Where did it disappear to in the afternoons was often asked and the enigma of '*assembly points*' has answered this question, but like all the laws of nature, each year we learn more and more.

In 2005, a particular male Purple Emperor in Alice Holt Forest was christened 'Brian' after a butterfly friend of mine, and he was very spectacular, in despatching his adversaries trying to vie for some of his territories around his Oak stands. He was noted at this site between the 4th July and 31st July. He wasn't the only Emperor to have a name, as the Emperors at this site become a part of the scenery. Each has their own particular traits and characteristics, which makes identification easier for counting and studying how particular males and females behave around their assembly points.

One afternoon a 'wounded' female Emperor was brought to me, she had been found in a large wood near to the village of Denmead. It appeared she'd had a bird strike; she was in a cardboard box, unable to fly. She had a good left wing, but her right wing was all shot away.



Duke of Burgundy *Hammeccaris luteina*



Timed Purple Emperor *Abathia iris*



Silver Washed Fritillary *Argynnis papilio*



Mating pair of Silver-studded Blues *Plebejus argus*



She lasted 16 days in this condition being and fed on sugar soaked cotton wool although she never took to the sprig of Sallow put in the box.

I hoped she had already laid her batch of eggs before this mishap had befallen her.

The butterfly was known from many sites in Hampshire, but since the study of its 'assembly points' the butterfly has taken on a new dimension. The Purple Emperor is now reported from far more sites than when I began coordinating this magnificent species. Looking up into the heavens in the afternoon is a far better proposition now, to most Emperor Recorders. With the aid of binoculars and a deck chair, looking at butterflies in the 21st Century is now what it should be, why should 'twitchers' have all the fun?

The year 2009 will go down as one of my best years for butterflies, I had travelled to Borneo and Singapore in June and encountered numerous tropical butterflies in and around the resort we stayed at in Kota Kinabalu, also around Mt Kinabalu which is the highest Mountain in South East Asia. In Singapore I went to the local gardens just up from the hotel and the butterflies were everywhere, and the locals were fascinated by my camera technique!

Before I left for Borneo in May I did a full survey of the Butser Hill complex in Queen Elizabeth Country Park in Hampshire and the Duke of Burgundy is quite common there, probably making the site one of the largest in the country. I also had the privilege to venture onto MOD land known as Porton Down in May, visiting a site known as the Isle of Wight Hill, which had been 'under-surveyed' in the past. Here in beautiful Beech woodland, there were excellent counts of Duke of Burgundy, and good clumps of Primrose for their caterpillars to feed on, and the rarer Pearl-Bordered Fritillary, where there were good areas of Common Dog-Violet.

Of course the migrating Painted Lady numbers were breathtaking in May and June, and equally again in August, when the next generation hatched out. The Small Tortoiseshell managed to make amends for several poor years. The Purple Emperor also had an excellent year, with good numbers flying in many woodlands, with the top prize going to Straits Enclosure, where males were 'playing' tag, flying in threes and fours up and down the main ride.

So what about the butterflies in Hampshire's future? I'm optimistic for some of the species which are on the *Priority species list*. The Adonis Blue has colonised several new sites since my inauguration into BBCS in 1984, although it is struggling to hold onto several sites, mainly due to weather factors I feel. The Silver-Spotted Skipper is holding its own,



also colonising several new sites, and re-colonising old ones. The Marsh Fritillary unfortunately has not fared the same fate. In 1984 I could still find it in isolated colonies in and around Hook and Camberley in the northern part of Hampshire, only succumbing large concentrations of house building. However, it still crops up in several places year in year out, and hopefully these sites can survive, with the aid of proper management. The Small Blue is still quiet common on several downland sites I visit, along with the Silver-Studded Blue on the Heathland areas in Hampshire. The Pearl-Bordered Fritillary is holding its own in the New Forest, but I suspect being so isolated in other parts of the county, it is very hard to keep the management right for such a species, having lost it over the last 25 years at Botley Wood, Crab Wood, Alice Holt Forest, and Spearywell Wood to name a few.

An ambitious project known as '*The Tytherley woods project*', aims to secure many of the woods in and around the Romsey and Winchester areas. Linking these with woods on the borders of Wiltshire and Dorset, and create natural corridors, with traditional management, which should in turn secure such species as the Duke of Burgundy, and the Pearl-Bordered Fritillary.

The Small Pearl-Bordered Fritillary has fared no better, with losses in Botley Wood, Alice Holt Forest, and last year in Pamber Forest in Northern Hampshire. The species is just about hanging on in the New Forest. The Wall Brown butterfly has almost disappeared from the south-east coast of Hampshire except for around Hurst Castle, but most notably on Portsdown Hill, where 10 years ago it was fairly common.

I am a great believer that we cannot and should not give up. Our flora and fauna are very important indicators of how well our landscape is adjusting to the challenges of the 21st Century. These challenges include Global Warming, a human population explosion and the added pressures of more houses being built on our ever decreasing Green Belt land.

Our precious butterflies and moths are one of the first indicators of how well the environment is doing. It is important to understand that media coverage can help us gain 'recruits' to our cause. Landowners, and especially farmers, who own so much of the land which borders the very isolated habitats suitable for butterflies, where most of our common and rarer species live – should be vital allies.

Set aside land is definitely helping in the problems we now face, and most importantly to try and build corridors, with the help of woods, hedgerows and grassland for these important indicators, to move about and re-colonize other sites, so we can all enjoy these precious insects for ourselves and future generations to come.



Book Review

Butterfly Gardening in Israel and the Middle East

by Dubi Benyamini, 2009. 357pp., fully illustrated in colour. Hardbound, 285 mm x 240 mm. Price: USD 50.00 plus postage. In Hebrew. Enquiries to the author at: dubi_ben@netvision.net.il

Dubi Benyamini has written extensively on the butterflies of the Middle East region over many years and is a recognized authority on butterflies of the Levant and elsewhere. His work is perhaps less well known in the UK, largely because Hebrew is his natural tongue and often represents the preferred language for his publications, particularly his books. This book is no exception. What, then, is the value of a butterfly gardening book written in Hebrew, and in an unfamiliar format (pages flowing right to left), to readers of the *Bulletin*?

The book's title, *Butterfly Gardening in Israel and the Middle East*, is somewhat misleading, as it does the book a disservice by suggesting that it is little more than an illustrated list of garden plants having value as nectar sources or larval hostplants. This is far from the case and, indeed, it would be difficult to fill 357, large format pages with such a modest goal. As one might expect upon seeing the size and quality of the book, it goes a great deal further.

An introductory section includes well illustrated notes on the importance of the butterfly garden and the value of the butterfly as an ecological indicator, before moving on to an explanation of the aims of the butterfly garden and how to attract them into the garden. However, before addressing the central theme of the book, the author provides helpful notes on butterfly biology, metamorphosis, flight and daily activity, followed by notes on butterfly vision and perception of colours. Several pages are devoted to the methods used by the butterfly as a defence against predators and the introductory section concludes with comments on butterfly ethology and the co-evolution of butterflies and flowers.

There then follows a section dealing with nectar plants, with the order of the plants listed from best nectar source to those of minor attraction. In general, a double-page spread is allocated per plant species, beginning with, for example, *Lantana monteridensis*, which is nicely illustrated as a specimen plant, accompanied by photographs showing nine different species of butterfly nectaring on this food source. Familiar (e.g. Buddleia; Verbena) and less familiar (e.g. *Echinum*



angustifolium; *Chrozophora tinctoria*) nectar sources, numbering 35 in total, are similarly treated, each page additionally showing a selection of nectaring butterflies. Photographs of hostplants are identified by their scientific name. While many plants are, indeed, cultivated garden flowers, the scope of the book extends well beyond the garden fence and into the deeper countryside in order to illustrate wild flowers that may be introduced into the garden.

The next section takes a different and very valuable approach, detailing various larval hostplants along with, for the most part, illustrations of the butterfly species (adult or larva) associated with them. Hostplants are again identified by their scientific name, but it is unfortunate for those lacking an ability to read Hebrew that the names of the butterfly species are *not* so identified. On Page 148, for example, a page headed 'Caesalpiaceae' shows a photograph of an adult Lang's Short-tailed Blue (*Leptotes pirithons*) alongside a photograph of a larva of the African Migrant (*Catopsilia florella*), neither of which is identified with a recognisable colloquial or scientific name. By a process of elimination, through careful reference to the index, it is possible to put a name to unfamiliar species, but it is hard work! From Asclepiadaceae to *Tribulus terrestris*, 64 well illustrated pages cover 40 families, or species, used as hostplants.

Pages 172-227 illustrate a selection of butterfly species found in the region and which may be tempted into the garden. The initial species to be dealt with in these pages (*Papilio machaon*, *Archon apollinus*, *Allancastris cerisyi* and *A. deyrollei*), followed later by *Danaus chrysippus* and *Charaxes jasius*, remind the UK reader that the Israeli butterfly gardener has rather more incentive to encourage butterflies into the garden! In most cases, each of these species is accompanied by excellent photographs of all stages of the life-cycle. Each butterfly is introduced by its scientific name, so for the most part the identity of each species is clear, but where more than one species shares a page, as happens occasionally, the Hebrew-captioned photographs will be of little help to most readers. However, this rarely happens, and this is a minor criticism of an otherwise well illustrated and informative section.

There follows a section on larger moths, particularly the hawk-moths, of the region, leading to several pages on bees, beetles and other insect families likely to be encountered during daylight hours in the (Israeli) garden or local countryside.

The next 32 pages explain butterflies' affiliation for particular countryside zones in Israel from the northern Palaearctic (Mediterranean) zone to the Afrotropical dry Negev Desert in the



south. The author also provides comments on seasons, before discussing gardens and garden design – with numerous photographs of appropriate formal and informal gardens, all sharing the common theme of being butterfly friendly.

The concluding sections embrace butterfly photography and also demonstrate that the author and his colleagues are to be commended for their activities in support of education (as shown by various activities involving local kindergartens and schools) and conservation (e.g. groups of enthusiasts drawing attention to the plight of threatened species of butterfly).

Among the indexes, it is reassuring to note a comprehensive A - Z *List of Insects*, and a separate index listing *Nectar Sources and Hostplants*; these will be welcomed by non-Hebrew readers.

Once again, Dubi Benyamini's dedication to his subject has provided an invaluable and unique contribution; the reviewer is not aware of another 'butterfly gardening' book to cover the subject so comprehensively. This is a book not only to be recommended for its approach to butterfly gardening, but also for the section (pages 172-227) depicting the life-cycle stages of the various butterflies, albeit with the reservation that more use could so easily have been made of scientific names*. The book is well priced, beautifully and lavishly illustrated and represents excellent value for those prepared to negotiate the layout.

Eddie John (7937)

* The author has since advised that a detailed English 'Contents' page, to include appropriate scientific names of plants and butterflies, will be available for purchasers outside Israel.



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by M. Shaw
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by Peter May
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by Peter Sinton
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Any member joining on or after 1st October will be deemed to have joined for the following year unless he or she specifically requests membership for the current year. If such a request is made, the publications already published that year will be sent with the enrolment confirmation letter and the remaining ones will be sent when they are published. A further membership subscription will be necessary for the following year.

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The Amateur Entomologists' Society

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The
Bulletin
of the Amateur Entomologists' Society

Volume 69 • Number 489

April 2010

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The Bulletin



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of the Amateur Entomologists' Society

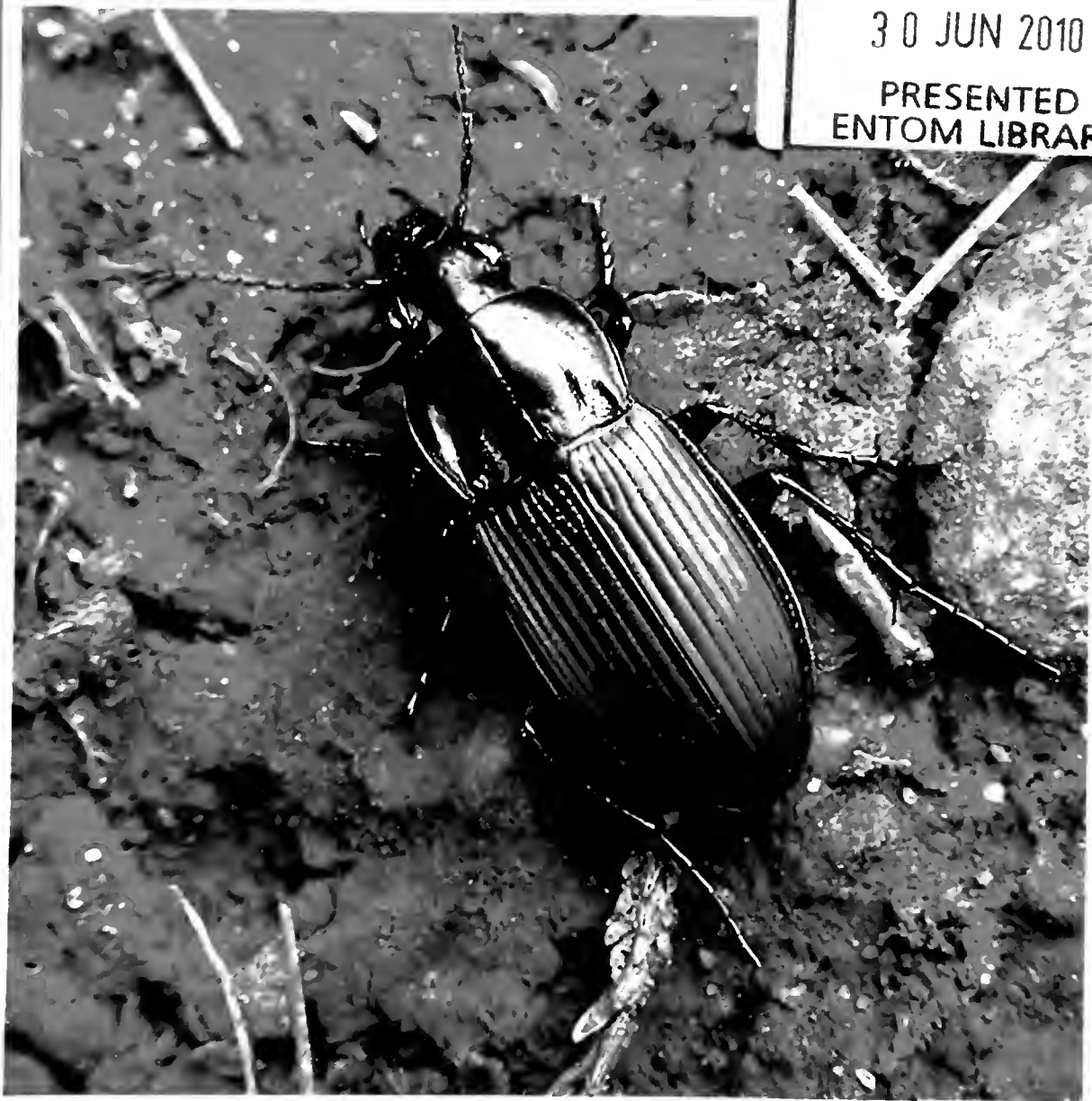
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It is to be distinctly understood that all views, opinions, or theories, expressed in the pages of this Journal are solely those of the author(s) concerned. All announcements of meetings, financial grants offered or sought, requests for help or information, are accepted as bona fide. Neither the Editor, the Officers and Council of the Society, nor its Trustees, can be held responsible for any loss, embarrassment or injury that might be sustained by reliance thereon.

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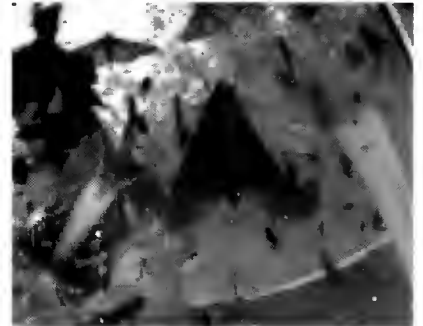
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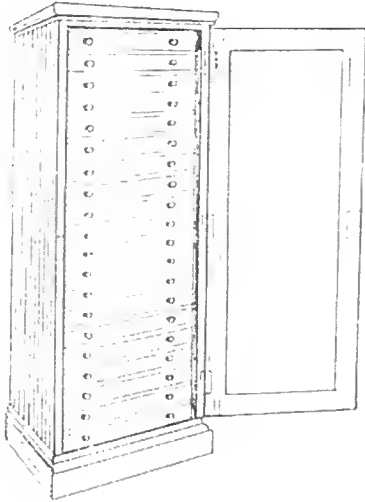
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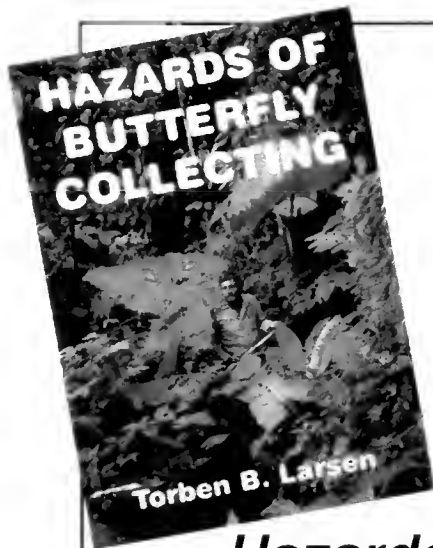
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Bulletin Cover



This month's cover picture shows an adult Kugelann's Ground Beetle, *Poecilus kugelanni*, (Coleoptera: Carabidae). The photo was supplied by John Walters – for more information about this attractive Red Data Book species see his article on page 111 of this *Bulletin*.

The Bulletin

of the Amateur Entomologists' Society

Volume 69 • Number 490

June 2010

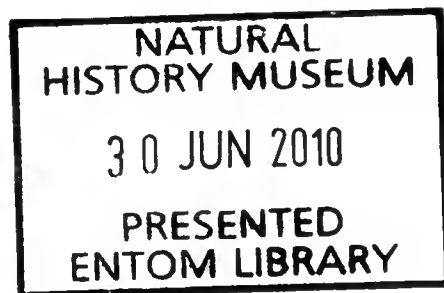
Editorial

One of the most gratifying things about our recent Members' Day was the number of young people who came along. Over its seventy five years of history the society has made it a high priority to promote entomology as a hobby for youngsters. Captain Robert Scott of the Antarctic famously wrote to his wife "Try to interest the boy in natural history if you can; it is better than games." His advice initiated the career of one of our finest naturalists.

Nowadays there are so many distractions for children, and, unfortunately, deterrents from solitary exploration, that promoting entomology to the young is more important than ever. The Royal Entomological Society has joined the AES in supporting the Bug Club, and as you will see in the report reproduced in this journal, some sterling work is being done – not least with the *Bug Club Magazine*.

So with the usual thanks to the excellent contributors to this magazine, and exhortations to everyone to produce further articles for publication, I'd like to add that the *Bug Club Magazine* would very much welcome puzzles and interesting pictures and snippets to entertain and inform their enthusiastic young readership. Send them to the usual address: PO Box 8774, London SW7 5ZG.

Martin Hough





Society Matters

AES Newsletter: We are currently reviewing the *AES Wants & Exchange List* and exploring how this could be improved to provide more value to members. More information will be made available in future issues of the *Bulletin*, and it is hoped to pilot the new service before the end of the year. We aim to implement the improvements without in any way affecting subscription rates.

A snippet from AES history: The first *AES Wants & Exchange List* was produced in July 1948, in order 'to increase the space in the *Bulletin* for articles and other matter (*sic*) of permanent interest...' The first editor of the *Wants & Exchange List* was Ernest Lewis, of Parry Road, London SE25, and 'Advertisements of articles offered for sale will be accepted on payment of a fee of 1/-, and provided that their inclusion will not involve the withholding of exchange notices'. There was only one 'for sale' advertisement in that first list – for a 'type collection' of British Lepidoptera contained in a five drawer cabinet, advertised by W.E. Collison (member number 247).

An announcement in the List forewarned that '...Mr B.A. Cooper will broadcast on "Butterfly Migration" in the "Countrylover" programme, in the Midland Home Service (296.2 m.) at 7 p.m. on Thursday, 15th July.' This was a radio programme – it was of course only in the years following 1948 that television began to become generally available to British households.

A scanned copy of the July 1948 *Wants & Exchange List* is available in the Members' section of the AES website.

Forthcoming AES Events

Late June

Saturday 26th June: A visit to Horsenden Hill, Greenford, Middlesex.

This event will involve looking for butterflies, including the White-letter hairstreak, and examining moths caught in the previous night's moth trap. Meet 10.00 Horsenden Farm (TQ163840). This is a joint event with Butterfly Conservation and the London Natural History Society and will be led by AES member David Howdon (email: davidhowdon@yahoo.co.uk; tel: 020 8426 6621). The event is free of charge but booking is necessary.



Saturday 26th June

Joint event, AES & Bug Club and the British Entomological & Natural History Society.

The Pelham-Clinton Building, Dinton Pastures Country Park, Davis Street, Hurst, Reading, Berkshire RG10 0TH.

The day will start at 10am, examining the moth trap catch from the previous night, followed by a talk about the park and the BENHS collections and library.

After lunch (at the on-site cafeteria, or bring a packed lunch) there will be a field trip/bug hunt to sample insects at Dinton Pastures Country Park, followed by reviewing the day's discoveries and using the BENHS facilities to identify insects. Experts and novices alike welcome.

July

Saturday 3rd July, 12:00 - 4:00 pm

AES & Bug Club 75th Anniversary Garden Party

Colin Hart, Chair of the AES Council, invites members to join us at a garden party at his home in Buckland (near Reigate), Surrey. This will be similar to the party held 25 years ago on the Golden Jubilee of the Society.

Owing to space constraints the numbers are limited to up to 50 members and their guests. Members can only bring one guest and a charge of up to £18 per person is likely. Early booking is advised – first come, first served! To book your place please email secretary@amentsoc.org (or telephone 07733 444 731) or write to AES Garden Party, PO Box 8774, London SW7 5ZG.

September

Saturday 11th September, 11.00am - 4.00pm:

Annual AES Open Day at the Oxford University Museum of Natural History Parks Road, Oxford OX1 3PW. 11:00 - 4:00.

Meet up at the Museum's entomology department (upstairs) at 11:00 am.

This event will involve a 'bug hunt' in the nearby University Parks, employing various field methods including a vacuum sampler, followed by lunch and examination of insects in the Museum. Microscopes and other equipment will be provided.



There will also be a tour of the Hope Entomological Collections and for younger (or young at heart) members there will be opportunities to handle live insects and tarantulas etc. This event will be led by Darren Mann. It would help with the arrangements if you could please let the AES secretary know beforehand if you plan to attend – secretary@amentsoc.org.

Outreach Events during the summer

The Society also plans to attend the following events, among others, in order to publicise the society and entomology in general.

Sunday 20th June 2010 (Father's Day)

Wildlife Aid Open Day, Wildlife Aid, Randalls Farmhouse, Randalls Road, Leatherhead, Surrey. 10:00 am - 4:00 pm.

Sunday 27th June

Osterley Day, Osterley Park & Gardens, Isleworth, Middlesex TW7 4RB

Sunday 4th July

'Go Green at Gatton', Gatton Park, Reigate, Surrey, RH2 0TW (1:00 - 5:00 pm).

Thursday 5th August

Family Insect Day at Osterley Park & Gardens, Isleworth, Middlesex TW7 4RB.

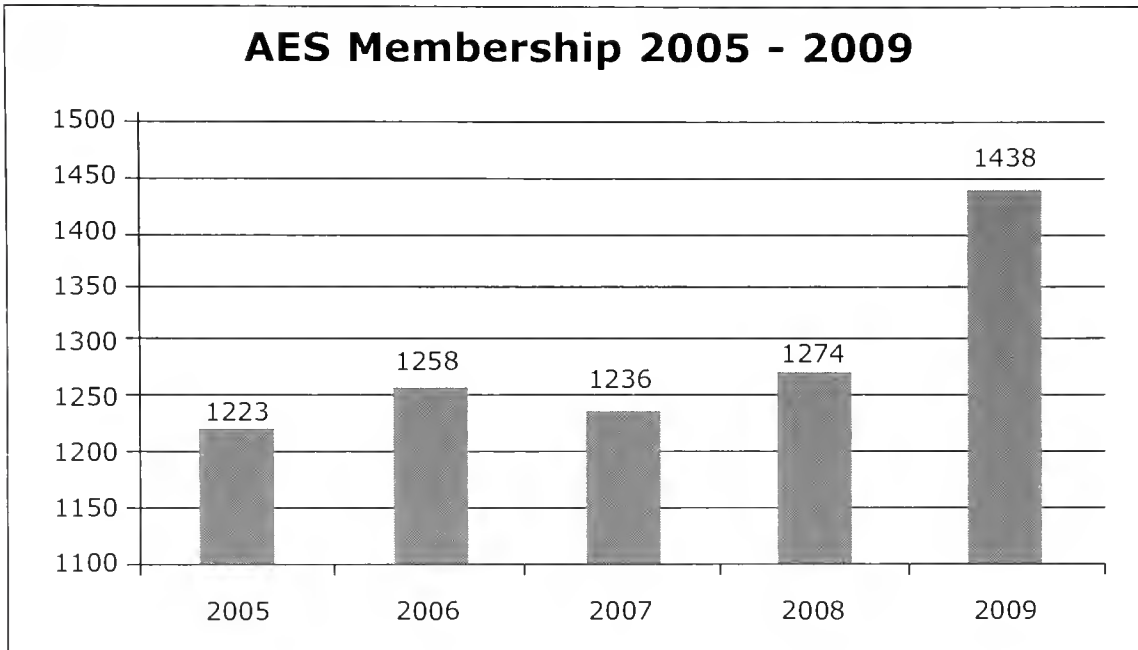


AES Annual Report for the year ended 31st December 2009

Membership

Total membership of the Society at 31st December 2009 was 1438, an increase of 161 over the previous year's total (see Fig on next page).

Part of the increase in membership numbers is accounted for by subscribers to the *Entomologist's Record*, which became an AES periodical in 2009. (The increase is less marked than some might expect due to the fact that many members subscribe to both publications).



Conservation

The Society continues to participate in appropriate conservation bodies, including Invertebrate Link, on which body our Conservation Secretary, Dr David Lonsdale, is a member of the Executive. David Lonsdale drafted the revised InvLink paper '*Insect translocation – a code of conservation practice*'. Dafydd Lewis attended a Board meeting of Buglife - the Invertebrate Conservation Trust, as an observer.

The Society's conservation newsletter *Invertebrate Conservation News* is now in its 40th year, and has been edited for most of that time by David Lonsdale, who this year received the Marsh Award for Insect Conservation by the Royal Entomological Society. In September an AES poster was presented at the Royal Entomological Society's special interest group meeting on the importance of gardens for insect conservation. Copies of the poster are available on our website, or as hard copy on request to the Secretary.

Publications

We assumed responsibility for the bimonthly *Entomologist's Record and Journal of Variation* from January 2009, and the number of *Entomologist's Record* recipients increased by 33% over the year. Many members subscribe to both this journal and to the bimonthly *AES Bulletin*. *Invertebrate Conservation News* was published three times during 2009. We were able to produce every issue of the bimonthly *Bug Club Magazine* in full colour, thanks to our affiliation with the RES.



Events

Fifteen events for members and others were held during 2009, at locations ranging from Liverpool to London. Some of these were collaborative events with our affiliates and some were organized by non-council members, which is a development to be encouraged. Further such events are planned for 2010, which marks the 75th anniversary of the Society. We also attended six outreach events during the year. Our 2009 Members' Day and AGM was held at the Cambridge University Zoology Museum and was dedicated to the memory of Michael Majerus, AES President 2005-2009. Our autumn visits to the Oxford University Museum of Natural History became a permanent annual fixture in 2009.

Development, Publicity and Affiliations

Our affiliation with the Royal Entomological Society was extended to include a partnership effective 1st January 2009 involving the management of the AES Bug Club, which has been renamed 'The Bug Club'. Copies of the Letter of Affiliation with the Conchological Society of Great Britain and Ireland were signed at that society's January meeting by their President, Julia Nunn, and by the AES Hon Secretary. Bug Clubber Theo Tamblyn was in attendance and had brought with him numerous shells to have their identification confirmed.

Two Bug Clubbers, Sam Baylis aged 13 and Rachel McLeod aged 9, addressed the Quekett Microscopical Club at their Young Scientists meeting in February. This event was attended by some 50 people including AES members and was deemed to be so successful that the Quekett are considering making it an annual event. A joint AES/Quekett meeting was held in June, at the Museum. These affiliations extend the opportunities open to members to engage with invertebrates and provide new perspectives for the membership of all affiliates.

The Society received a grant of £800 from the OPAL Project during the year, towards the cost of IT equipment and publicity materials; and we received £1000 from the WF Southall Trust to fund a wildlife garden and moth trap.

Awards

The Hammond Award [Best contribution to the AES *Bulletin* during 2009] was awarded to Peter Holland, for his articles on Emma Hutchinson.



The Gardiner Award [Best *Bug Club Magazine* article] was awarded as follows.

Under 9 age group: First Prize Winner: Magnus McLeod (aged 4). Highly Commended: Sophie Brown (aged 5).

9-13 age group: First Prize Winner: Rachel McLeod. Highly Commended: Matthew Sutton; Adila Stratford; Bethany Wildash.

14-17 age group: First Prize Winner: Joe Robertson.

The Bradford Award [Best exhibit from an adult member at the Kempton exhibition]. This was awarded to David Oram. The following were Highly Commended for their exhibits: Henry Berman, and Alan Rix of the British Plant Gall Society.

The Anson Bequest [Best exhibit by younger members at the Kempton Exhibition]. First Prize Winner was Theo Hamblyn, for his exhibit on phorid flies. This was a remarkable year and the judges had difficulty in choosing prize-winners among the very high standard of all exhibits. It was decided to award Highly Commended awards to the following: Isabella Baylis; Sam Baylis; Jody Holland; David May; Rachel McLeod; Daniel Osmond.

Cribb Award: There were no nominations for the Cribb Award during 2009.

Entomological Grant Scheme: It was decided to terminate the existing AES Grant Scheme in 2009. The scheme will be replaced in 2010 with a new grant scheme, to be known as the Michael Majerus Grant.

Governance

AES President Michael Majerus died in January at the age of 54 years. The Society was represented at the funeral by Brian Gardiner, Nick Holford, Martin Hough and Malcolm Simpson, all of whom have a long history with the Society. Martin Hough and Mike Majerus were on Council together in 1969, when Mike was a junior representative; and Mike had said that it was Brian who put him on the road to his entomological career, when he was a junior member of the Society. At the AGM in April Dr Robin Wootton was elected as President for 2009-2010.

The AES Council met on four occasions in 2008 at the rooms of the Ethical Society in Conway Hall, Bloomsbury. Dafydd Lewis (Hon Secretary) who has acted as Registrar since October 2008 formally assumed the role of Registrar on 1st November 2009.



The Governance and the Development and Fundraising Committees became permanent committees reporting to Council during the year.

Two new Council members were elected at the 2009 AGM: Colin Plant, Editor of the Entomologist's Record, and Mr David Tatham, who has valuable experience in dealing with fundraising and charitable trusts.

The following retire from Council by rotation at this meeting and have expressed their willingness to remain on Council if nominated and duly elected: Colin Hart; Martin Hough; Jacqueline Ruffle; Phil Wilkins. Miss Kara Majerus was co-opted as a member of Council at our December meeting and is therefore subject to election at the AGM. The AES Council nominee for AES President, 2009-10 is our current president, Robin Wootton.

Deaths

Finally, it was with great regret that we received notice of the deaths during 2009 of the following members of the Society:

Professor Michael Majerus (4027). Mr J E Wilson (5272).

Conservation Report for 2009

The AES Conservation Committee

The Committee continued its work with only four members (i.e. the two undersigned, together with Phil Wilkins and Peter May) and remained in need of a new AES Habitat Conservation Officer. Anyone with an interest in promoting the conservation work of the Society would therefore be welcome as a prospective committee member.

National and international representation

In 2009, there were no further announcements regarding the fifth quinquennial review of the listing of species for legal protection in the UK, but a final consultation began early in 2010, after the period covered by this report.

Invertebrate Link (InvLink) again expressed concern about the failure of the UK's statutory conservation agencies to continue employing invertebrate specialists in adequate numbers. This deficiency is causing problems for various invertebrate conservation activities, including the review of legally protected species and the development of action plans for other "species of conservation concern".



The invertebrate specialists who are still in UK government employment have helped to ensure that national anti-collecting laws apply only to the very small percentage of species that warrant such measures. An increasing number of other countries have imposed blanket bans on collecting, sometimes with the intention of preventing 'biopiracy', rather than in the interests of species-conservation. Even in the UK, there are many designated sites where blanket bans on collecting exist, but there is a general perception that individuals discreetly taking a few specimens of non-endangered species for personal study are unlikely to be prosecuted. There was therefore some consternation when a Czech coleopterist was fined and imprisoned for collecting beetles in a national park in India. A compatriot was also fined but released from custody. It remains to be seen whether the policies of countries outside the UK could be guided by InvLink's own guidelines on the appropriate use of legislation in invertebrate conservation.

The InvLink Code for Re-establishment reached its final stages for approval, having been re-drafted by AES representative David Lonsdale. The scope of the new draft was been widened to include novel introductions beyond the current geographic ranges of species. Such introductions might be needed in order to move species beyond man-made obstacles that could otherwise prevent them from colonising new regions in response to climate change. After the launch of the code, which is expected in 2010, it will be made available through the AES, together with a short version for ready reference.

The UK Biodiversity Action Plan remains a major topic at InvLink meetings. After the Priority Species Review, further discussion focused on the implementation of species-plans. This will involve Natural England and other national agencies, including those that run the Higher Level Scheme of Countryside Stewardship.

Displays, events and fieldwork

The AES displayed posters and other items related to conservation at various events organised by other societies, including a meeting on the theme of insect conservation in gardens, held jointly by the Royal Entomological Society (RES) and the Royal Horticultural Society at Wisley Gardens, in Surrey. There was an AES stand also at the RES annual meeting in Sheffield in July, at which *ICN* editor David Lonsdale was presented with the 2009 Marsh Award for Insect Conservation.



As reported elsewhere, the Society held a number of field and indoor events which were intended to encourage young people to learn about insects in the wild and about the need to conserve their habitats. These events included a field trip to Bersted Brooks, near Bognor in West Sussex, where AES and Bug Club members provided some new invertebrate records. Recording was a key aim also at Osterley Park, Middlesex, now a regular venue, where members conducted a 'BioBlitz'. This involved a weekend survey of ancient grassland and woodland at Osterley Park. Members also began a study, initiated by Council member Jacqueline Ruffle, of the effects of grazing by Banded Galloway cattle at Headley Heath in Surrey.

Publications

The many articles in *Invertebrate Conservation News* covered topics as wide-ranging as the threats to corals in relation to 'climate engineering', plans for a third new nuclear power plant at Dungeness, south-east England, an alert about the Citrus longhorn beetle *Anoplophora chinensis* in the UK, the new guidelines on the feeding of invertebrates to captive bats, the principles for legal protection of invertebrate species by law, captive breeding of the Pearl mussel *Margaratifera margaratifera* in Wales, an endangered snail in Iowa, USA, Australian butterflies threatened by climate change and a possible new threat from the use of veterinary drugs based on avermectins.

David Lonsdale

Dafydd Lewis

Bug Club: Annual Summary for the year 2009-10

Membership

Total membership of the Bug Club as reflected in the number of recipients of the Magazine at 31st December 2009 was 236.

Publications

The bimonthly 28 page *Bug Club Magazine* was produced in full colour this year for the first time, something which would not have been possible had the AES not been able to obtain additional funding, in this case from its partnership with the RES.



Events

The Bug Club was catered for or promoted, either solely or partially, by the AES at around 20 events, including at the RES York Insect Fair. The main AES events were held at the Cambridge University Department of Zoology (AES Members' Day, which included Bug Club speakers and exhibitors) and at various museums (National Museums Liverpool, Oxford University Museum, Horniman Museum, London) and there was a two-day BioBlitz at Osterley Park, Middlesex. The Bug Club Young Entomologists' Day at Oxford on February 20th 2010 was particularly successful and it is planned to repeat it in February 2011.

We also participated in meetings organised by our affiliates, the Quekett Microscopical Club and the Conchological Society. Further such events are planned during 2010, which marks the 75th anniversary of the AES, and regional events organized by RES Fellows are hoped for.

Development, Publicity and Affiliations

The Bug Club became governed by a partnership effective 1st January 2009 between the AES and the RES, and the former 'AES Bug Club' is now known simply as 'The Bug Club'.

Publicity materials including a Bug Club display banner, promotional leaflets and merchandise (Bug Club pencil, ruler, pencil case, naturalist's notebook) were produced.

Donations

The Bug Club was donated a Heath moth trap and a digital microscope during the year. A number of stick insects were donated to the Bug Club table at the AES Exhibition in October 2009 for the purpose of being given away to Bug Clubbers. Funding from charitable trusts applied for by the AES was used to run an entomology project at two scout groups.

Awards

The Gardiner Award [Best Bug Club Magazine article] was awarded as follows in 2009: Under 9 age group: First Prize Winner: Magnus McLeod (aged 4½). Highly Commended: Sophie Brown (aged 5). 9-13 age group: First Prize Winner: Rachel McLeod. Highly Commended: Matthew Sutton; Adila Stratford; Bethany Wildash.



The Anson Bequest [Best exhibit by younger members at the Kempton Exhibition] was awarded as follows in 2009: First Prize Winner was Theo Hamblyn, for his exhibit on phorid flies. This was a remarkable year and the judges had difficulty in choosing prize-winners among the very high standard of all exhibits. It was decided to award Highly Commended awards to the following: Isabella Baylis; Sam Baylis; Jody Holland; David May; Rachel McLeod; Daniel Osmond.

Other activities

We ran two successful drawing competitions, one online and open to all and one for Bug Club members via the *Bug Club Magazine*. Six books were donated as prizes by Kingfisher Books (part of Pan Macmillan).

Governance

Michael Majerus, Chair of the Bug Club Committee, died in January at the age of 54 years. Dr Robin Wootton was elected to chair the Bug Club Committee at the annual meeting held on 17th November 2009 at the RES headquarters in St Albans. Committee members Nov 2009 – Nov 2010 are Bill Blakemore, Lin Field, Archie Murchie (RES) and Dafydd Lewis, Peter May, and Kieren Pitts (AES).

Dafydd Lewis 28.ii.2010

AES Members' Day and AGM – The Darwin Centre 24th April 2010

The Society was very fortunate in being one of the first amateur groups to take advantage of the new meeting rooms at the Darwin Centre, at the London Natural History Museum, and our members' day was indeed the first large event to take place there. This superb facility is lavishly set up to support and promote active interest in Natural History. Not only is there a well-equipped seminar room and smaller meeting rooms, but the Angela Marmont Centre for UK Biodiversity has library facilities (incorporating the library of the London Natural History Society), reference collections of all manner of British natural history specimens, and helpful and expert staff members to give information and advice. Although there will be a formal opening next month, most of the centre is already open for anyone to visit and use, or it will respond to "things in jars" sent in postally.



The day started with the Society's AGM – see the reports and the minutes of last year's AGM elsewhere in the *Bulletin*. It's best to get the pain over quickly, so by distributing documents beforehand, and holding most of the votes en bloc, President Robin Wootton managed to rattle through it all in about half an hour. Nobody enjoys an AGM, but it did provide the opportunity for the new Michael Majerus Grant – launched on the day – to be announced by Mike's daughter Kara, who was also formally elected to Council at this AGM.

The AGM is also an opportunity to make presentations of awards for Prizewinners. It was announced that Peter Holland had won the Hammond Award for the best article in the *Bulletin* last year, and the Gardiner Awards for articles in the *Bug Club Magazine* went to Magnus McLeod (under 8 – highly commended Sophie Brown), Rachel McLeod (9 and over – highly commended Matthew Sutton, Adila Stratford and Bethany Wildash) and Joe Robertson (14 and over).

On to the Members' Day, and after Stuart Hine, Manager of the Insect Identification Service, gave us an exciting description of all the facilities that are now available at the Centre for every amateur naturalist, it was the turn of three young people to tell us about their discoveries in entomology. Firstly 14-year-old Samuel Baylis talked about "What the Bug Club has done for me" and delighted us with some of his prize-winning amateur photography, then 10-year-old Georgette Beaunier told us what she had learnt this year whilst studying shield bugs, and one can only admire the application and thoroughness in one so young. After this, our friend and last year's Tesch Lecturer Remy Ware introduced eight-year-old Ella Roy, who told of her discoveries of the effect (or lack of effect) of altitude upon Harlequin ladybirds.

If I have a complaint about our Members' Days, it is simply that there is too much going on – one simply can't take proper advantage of all that is available. I could not stay and give full justice to the talk on Beetles in History by Sarah Beynon of Oxford University (though before I left I could see the rapt attention that our coleopterist members were giving her) because I wanted to be present at the launch of a new AES-supported children's book. Sonia Copeland Bloom was signing copies of *Basil the Beetle's Scary Adventure*, a charming "faction" book launched at this event, that was proving popular with the young and, I confess, not so young. Understandably exploiting her family, Sonia added some Hollywood lustre to the



occasion by bringing along the movie star Orlando Bloom and his sister Sam – also an actress – who were kind enough to pose for photographs and chat with AES Members.

This took place in the Public Area, so I was also able to spend time there looking through the various poster displays (some on the history of the AES, celebrating our 75th Anniversary, some on National Insect Week with our friends from the Royal Entomological Society, some from the People's Trust for Endangered Species). The Open University's i-Spot project sent along a representative to tell us about how successfully their service has grown, and the Quekett Microscopical Club provided publicity material and a Microscopy Workshop for AES attendees, where million-year-old insects embedded in amber could be examined at high magnification. There was also a banner displaying information about the UK Ladybird Survey, an information stand about Buglife, the Invertebrate Conservation Trust, and the AES had a display of information on its affiliates who could not make it on the day – including the Conchological Society, the Wildlife Gardening Forum and Moths Count.

The AES itself had displays, of course. These included items from the archive, and from the Simpson Collection of Entomological Memorabilia, covering the past 75 proud years of our society, and looked after on the day by Treasurer Peter May. Our publications and merchandise were on sale, supervised by Jacqueline Ruffle, whilst AES



The Seminar Room begins to fill



Magnus and Rachel McLeod receive their prizes



Insects in amber under the microscope.



The Bloom Family launch *Basil the Beetle's Scary Adventure*.



Young speakers: Top left: Sam Baylis; Top right: Georgette Beaumer; Bottom left: Ella Roy (with Remy Ware).

Bottom right: Max Barclay shows some of the centre's collection of beetles.

members had brought along some livestock – young (and not so young) members were seen to be taking home some of Judith Rose's silk moth larvae (*Brahmaea bearseyi*) in round plastic tubs at the end of the afternoon.

And then – oh gosh! – the Museum tours, all of which were run twice during the afternoon. Spoilt for choice once more, one could elect to join Max Barclay visiting the beetle collection, or Erica McAlister with the Diptera, or Alessandro Giusti and Martin Honey with the moths.



For the non-specialist, Stuart Hine and Hannah Cornish conducted a more general British Insects tour. I chose Max and the Beetles (well, he's an old friend of the AES) and thoroughly enjoyed the visit. The British Natural History Museum has an unrivalled collection, including a significant percentage of the world's Type Specimens, and Max was able to show us some spectacular examples, as well as demonstrating Malaise Traps, Sweep Nets and other entomological paraphernalia.

This finished just in time for me to get back to one of the most important events of the day – the annual Tesch Lecture. This year it was given by our own President, Dr Robin Wootton, and provided a switch of focus from Taxonomy to Anatomy and Physiology, being on the subject of “How and Why do Butterflies Fly?” Among the illustrations were fascinating slow motion films of various species of butterfly in flight, and one could see the difference between a Satyrid's fold and a Vanessid's swoop. Before the lecture I asked Robin if he could let me have his notes to make an article for the *Bulletin*, but I don't think the presentation would translate into a journal article – one had just to be there, to enjoy Robin's expert delivery, and to witness the superb examples.

Matt Shardlow of Buglife (Britain's main invertebrate conservation trust) then gave the final lecture – a half hour talk on “Why and How Insect Conservation has Come a Long Way”. The whole day has been an illustration of Matt's point. The study of Natural History is as vibrant and active now as it has ever been – and with an ever-strengthening conservation focus.

Thanks are due to AES Secretary Dafydd Lewis, the Darwin Centre and everyone who participated in and helped organize this superb day, not forgetting the excellent refreshments provided.

Martin Hough



Minutes of the Annual General Meeting of the Amateur Entomologists' Society, held on Saturday 18th April 2009 at the Department of Zoology, University of Cambridge, commencing at 12:05 hrs.

Attendance: 43 members signed the AGM attendance register (additional members were present who did not sign in).

Members were welcomed by AES Acting President Dr David Lonsdale, who chaired the first part of the meeting before handing over to Dr Robin Wootton, following the election of the latter as President of the Society for the period 2009-2010.

A one minute silence was observed in memory of Michael Majerus, AES President 2005-2009, and other members deceased.

David thanked those who had organised the day, especially members of the Cambridge Genetics and Zoology departments whose contributions were very much appreciated, in particular Dr Remy Ware and Dr William Foster. The presence at the meeting of Brian Gardiner and Nick Holford, whose past contributions to the AES have been substantial, was also noted by the Chair.

1. *Apologies for Absence*

Apologies were received from Peter Hodge, John Howells, Wayne Jarvis, Peter May, Paul Sokoloff and Dr Phil Wilkins.

2. *Minutes of the Previous Annual General Meeting*

Copies of the minutes were circulated prior to the meeting and had also been made available to members via the AES website. It was proposed that the minutes be agreed to be correct.

Proposed Martin Hough; seconded Kieren Pitts; agreed *nem. con.*

3. *Matters Arising*

There were none.

4. *Hammond Award*

This year's Hammond Award was made to David Keen for his article on dragonflies as well as in recognition of his other contributions to the *Bulletin* during the relevant period. David was unable to be present in person and the Award and Certificate will be sent to him by the Secretary after the AGM.



5. *Cribb Award*

It was announced that this award would not be presented this year.

6. *Brian Gardiner Award*

Those Gardiner Award winners present received their prizes, the remainder will be sent their certificates and cheques by the Secretary after the AGM. They were as follows. Age Category 9-13, Winners: Calum Lyle & Rachel McLeod. Age Category 9-13, Highly Commended: Samuel Baylis, Luke Andrews, Freya Carter, Harry Poore, Ella Wilkins, Bethany Wildash. Age Category Under 9, Winner: Magnus McLeod. Age Category Under 9, Highly Commended: Jodie Brown, Sophie Brown, Ben Newman, Ella Roy.

7. *Reports of the Society*

Report of Council: The Report of Council for the year ending 31st December 2008 was circulated prior to the meeting and had also been made available to members via the AES website. It was proposed that the report be accepted as an accurate account.

Proposed Martin Hough; seconded David Tatham; agreed *nem. con.*

Report of the Treasurer: The Treasurer's Report for the year ending 31st December 2007 was circulated prior to the meeting and had also been made available to members via the AES website.

It was proposed that the report be accepted as an accurate account. Proposed Martin Hough; seconded Kieren Pitts; agreed *nem. con.*

Report of the Conservation Committee: The Conservation Committee Report for the year ending 31st December 2007 was circulated prior to the meeting and had also been made available to members via the AES website. (Formal acceptance of this report at the AGM is not required under the AES Constitution).

Report of the Youth Secretary: Bug Club matters were included in the Report of Council and therefore a separate report by the Youth Secretary was not considered necessary this year. (Formal acceptance of this report at the AGM is not required under the AES Constitution).

All the above reports will be published in the *Bulletin* during 2009.

8. *Election of Council Members of the Society*

(i) Election of President (2009-10)

It was proposed that Dr Robin Wootton be elected President of the Society. No other nominations had been received. Proposed Nick Holford; seconded Martin Hough; agreed *nem. con.*



Following the election of the President, the chairing of the meeting passed to him.

(ii) Election of Council Members (2009-12)

Council Members standing down by rotation were Peter Hodge, John Howells, Wayne Jarvis, David Lonsdale, Kieren Pitts.

Those standing for election were Peter Hodge, John Howells, Wayne Jarvis, David Lonsdale, Kieren Pitts and David Tatham.

There were also four vacant positions for which no nominations were received prior to the meeting and none were offered from the floor.

It was proposed that as there was no contest for any of these positions that these people be elected en bloc. Proposed Nick Holford; seconded David Humphries; agreed *nem. con.*

9. *Election of Officers of the Society (2009-10)*

The following council members were willing to stand for election into the indicated posts.

Secretary	Dafydd Lewis
Treasurer.....	Peter May
Bulletin Editor	Phil Wilkins
Bulletin Co-Editor	Martin Hough
General Editor.....	Jacqueline Ruffle
Exhibition Secretary	Wayne Jarvis
Advertising Secretary	Peter Hodge
Conservation Secretary	David Lonsdale
ICN Editor.....	David Lonsdale
InvLink Representative 1	David Lonsdale
InvLink Representative 2	Dafydd Lewis
Wants & Exchanges Editor	Peter May
Youth/Bug Club Secretary	Kieren Pitts
Bug Club Magazine Editors.....	Dafydd Lewis Kieren Pitts

It was proposed that as no positions were contested these people be elected en bloc.

Proposed David Humphries; seconded Kieren Pitts; agreed *nem. con.*

10. *Independent Examiner of Accounts 2008-9*

It was proposed that John Flynn should continue as the Independent Examiner of Accounts.

Proposed Kieren Pitts; seconded Martin Hough; agreed *nem. con.*

11. *Any Other Business.*

No items had been received and none were raised from the floor.

There being no further items raised the meeting closed at 12:35 hrs.



Spanish winter butterflies – an update for 2009-2010

by David Keen (3309L)

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

When I wrote in my update for 2008/9 (see references below) about the bad weather in that winter, I had no idea that the following winter would prove be a good deal worse! As a result, I have to commence this review by discussing the weather once again. The first six weeks of the winter were, like the preceding autumn, abnormally dry and warm for this part of Spain and this meant that butterflies were seen more than in the same period in previous years.

However, there was a dramatic change in the weather on 17 December – when we had a lot of rain. Over the next three weeks we had the equivalent of twice the annual rainfall for the village. Further, rain continued to fall through the rest of January, February and well into March 2010. All rainfall records were re-written. For example, the normal amount of rain in the city of Sevilla for February is around 16 litres, but from 1 to 22 February 2010 a staggering 91 litres were recorded. In our village the annual rainfall is around 200mm but by the end of February over 1000 had been noted. Even the ITN News on 10 March mentioned that Gibraltar and southwest Spain had had their wettest winter on record.

All this rain has caused no end of difficulties locally with flooded streets and real problems with the olive harvest. It also meant that I was only able to venture into the local countryside on three occasions during four months. Having got the weather out of my system, I will now review the species of butterflies that have been seen.

I expected that with the 'good' weather in November I would have seen the Swallowtail, *Papilio machaon*, but, as in the previous winter, I did not see even one. Thus my first records relate to the Pieridae and I am pleased to say that the Small White, *Artogeia (Pieris) rapae*, was once again seen on every single trip in the local countryside throughout the year. It was also seen in Zahara de la Sierra, Cadiz Province, on 9 November.

The Large White, *Pieris brassicae*, was the most frequently seen member of the family and was seen in or around the garden almost



every day in November. It was also seen in Zahara de la Sierra on 9 November and in the nearby village of Algamitas two days later. It was common in the countryside on 16 November, 6 December and again on 29 January. The only other “white” to be seen was the Bath White, *Pontia daphidice*. This was seen in the countryside on all three of my visits, and appeared several times in the garden in November. It was another species seen in Zahara de la Sierra and also almost certainly on a trip to Rio Tinto, Huelva Province, on 10 November. The only other member of the Pieridae to mention is the Clouded Yellow, *Colias crocea*. This was seen, in good numbers, on all three trips to the countryside. One specimen seen on 29 January was a very small male.

We now turn to the two species of the Nymphalidae which were seen during the winter. The Red Admiral, *Vanessa atalanta*, was only seen locally twice – in Algamitas on 11 November and in the countryside five days later. However, one specimen was seen in the park near the sea in Cadiz on 6 November, another in Zahara de la Sierra three days later and yet another in Pruna, Sevilla Province, on 11 November. The Painted Lady, *Cyathia cardui*, however, was seen on all three trips in the countryside and also on my trips to Zahara de la Sierra, Rio Tinto, and Pruna.

I only saw satyrids twice during the winter. The Speckled Wood, *Pararge aegeria*, was seen as expected in the countryside on 16 November and the Wall Brown, *Lasiommata megera*, was observed during my trip to Zahara de la Sierra on 9 November.

We now come to the Lycaenidae and I am pleased to confirm another winter sighting of the Geranium Bronze, *Cacyreus marshalli*. Two or three were seen in Zahara de la Sierra which was also the second time that I had seen this species in the Province of Cadiz.

The second of the “blues” to be seen was the Long-tailed Blue, *Lampides boeticus*. This species was present in good numbers in the local countryside on both 16 November and 6 December. It was also seen in Pruna on 11 November. A species that resembles this one is Lang’s Short-tailed Blue, *Syntarucus piritibous*. This latter species was also common in the countryside on both 16 November and 6 December. The Common Blue, *Polyommatus icarus*, was also common locally on both 16 November and 6 December. One other member of the family was also recorded during the winter – the Small Copper, *Lycaena phlaeas*, was present in Zahara de la Sierra and also in the local countryside on 6 December.



No Skippers were seen during this winter, so there are no more records to report.

Let us hope that the weather is more typical next winter and that there will be more interesting records to discuss.

References

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- Keen, David. 2008. Some Spanish winter butterflies – an update. *The Bulletin of the Amateur Entomologists' Society*, **67** (477) 70-74.
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Altitudinal limits of grasshoppers in the Lake District

by David Horsfield (6642)

131 Comiston Road, Edinburgh EH10 6AQ.

The article by Gardiner and Gardiner (2008) reminded me of observations I made during the summer of 1976 on grasshoppers on Scafell and on Black Combe in the Lake District. Observations were made over a period of three days from 13th to 15th August. The warm sunny weather over the three days was ideal for tracing the altitudinal limits of grasshoppers, though the main aim of the work was to gather data on the frequency of different colour morphs. Meadow grasshoppers (*Cborthippus parallelus*) and mottled grasshoppers (*Myrmeleotettix maculatus*) were caught by both walking them up and catching them in a glass tube and by sweep-netting. Common green grasshoppers (*Omocestus viridulus*) were caught by stopping every few metres to listen for singing males and catching them in a tube. All grasshoppers were released where they were caught after examination.

Meadow and common green grasshoppers were first seen in grassland along the path above Wasdale Head at the top of Fence Wood between an altitude of 180-210 m above sea level (asl) (grid ref: NY182063). Meadow grasshoppers were found to be plentiful in mixed grassland with purple moor grass (*Molinia caerulea*), deer-sedge (*Trichophorum cespitosum*) and a little mat-grass (*Nardus stricta*) above Wasdale Head, just north-west of the Maiden Castle cairn (around grid ref: NY183055) at an altitude of 290 to 305 m. From the Maiden Castle cairn I went up the south-westerly facing slope in a direct line heading towards the summit of Scafell across Hard Rigg to the head of Hardrigg Gill. Meadow grasshoppers were found all along the route either in mixed grassland (as above) or in wet areas with cotton-grass (*Eriophorum vaginatum*) and/or bog moss *Sphagnum*, but always where *Molinia* occurred, all the way up to 472 m asl (grid ref: NY192059).

The meadow grasshopper appeared to be especially associated with *Molinia* in damp grassland or wet mire. At 472 m asl where the last meadow grasshopper was found at the head of Hardrigg Gill the *Molinia* was becoming sparse in a wet cotton-grass (*Eriophorum vaginatum*) and bog-moss (*Sphagnum*) mire. This wet mire was searched from 472 m up to 580 m asl but no more meadow grasshoppers were found. However, little *Molinia* or other



broad-leaved grasses were found in the wet mire above 472 m asl and none above about 488 m asl. Above 580 m the wet mire on gentle slopes gave way sharply to dry dwarf-shrub heath developed on steep slopes with much scree. The heath consisted of bilberry (*Vaccinium myrtillus*), wavy-hair grass (*Deschampsia flexuosa*) and hypnaceous moss and was generally lacking in broad-leaved grasses. No grasshoppers were found in this grassy dwarf-shrub heath.

Common green grasshoppers were found in small numbers at 300 m, 374 m, 380 m and 410 m asl in grassland dominated by mat-grass with sweet vernal grass (*Anthoxanthum odoratum*), wavy-hair grass and common bent grass (*Agrostis* spp.). The mat-grass grassland in which the common green grasshopper was taken was generally drier or better drained than the damp grassland or mire with *Molinia* in which the meadow grasshopper was found.

From Maiden Cairn to the head of Hardrigg Gill only a single mottled grasshopper was seen in the same kind of grassland as common green grasshopper at 396 m asl (grid ref: NY190057), on Hard Rigg.

The mottled grasshopper was found in numbers on the southerly facing slopes of Black Combe in the south of the Lake District. Specimens were found around 550 m asl (grid ref: SD134849) on the slopes on the southern edge of the gently-sloping summit cap which rises to 600 m asl but not on the summit itself. Most specimens were found in the predominant grassland, which consisted of a short sward of sheep's fescue (*Festuca ovina*), though odd specimens were walked up from patches of mat-grass. On the east side of the hill large numbers of mottled grasshopper and common green grasshopper were seen at about 305 m asl (grid ref: SD146852) in a short grassland of sheep's fescue and common bent grass around the bases of rocky outcrops.

The highest elevation at which Gardiner and Gardiner (2008) found common green grasshopper on Snowdon was 378 m. They also found it in heathland in North Wales up to 405 m asl and at 440 m on the top of Haytor on Dartmoor. These elevations compare with my highest elevation of 410 m in the Lake District. Marshall and Haes (1988) note that the meadow grasshopper occurs in wet grassy moorland to over 800 m in the Highlands, much higher than my maximum of 472 m on Scafell.

None of my observations can be said to have established an altitudinal limit for any of the species due to confounding factors of



change in vegetation or slope. The meadow grasshopper appeared to be associated with *Molinia* in damp grassland and grassy mire. When the mire gave way to *Eriophorum vaginatum* mire lacking *Molinia* or other broad-leaved grasses and then to dwarf-shrub heath no more meadow grasshoppers were found. Similarly, the drier grassland in which common green grasshoppers were found was not found higher on the slopes than the highest grasshopper. Mottled grasshoppers were found at the very top of south-facing slopes in *Festuca* grassland but not in similar habitat on the summit on gentler and therefore less sunny slopes. Given suitable habitat or southerly slopes, with similar grassland extending higher up the slopes possibly all the species could have occurred at higher altitudes.

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The ecology of the Kugelann's Ground Beetle *Poecilus kugelanni* (Coleoptera: Carabidae)

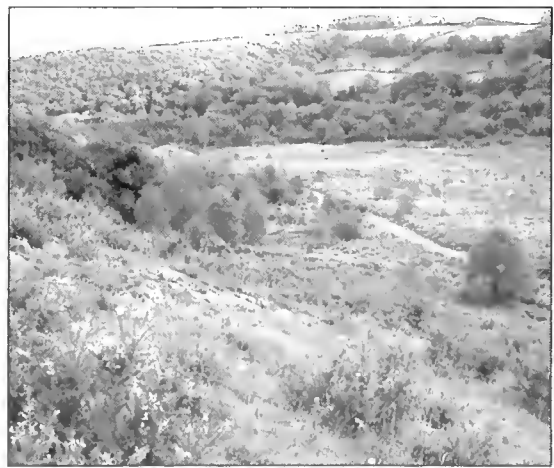
by John Walters

47 Oaklands Park, Buckfastleigh, Devon TQ11 0BP www.jobnwalters.co.uk

Introduction

The Kugelann's Ground Beetle *Poecilus kugelanni* (Panzer, 1797), formerly *Pterostichus kugelanni*, is an attractive, 12-14 mm long, metallic green and bronze beetle. It occurs on a few lowland heathlands in southern England and south Wales. It is a rare *Red Data Book 1* (RDB1) Endangered (Hyman and Parsons, 1992) species with records from only 25 sites since the 1800s.

I first became interested in ground beetles in 1996 after discovering a colony of the Blue Ground Beetle *Carabus intricatus* in woodlands near my home in Devon. In 2000 I became aware that Kugelann's Ground Beetle occurred on Dartmoor at Aish Tor, which is adjacent to the woods where I was studying the ecology of the Blue Ground Beetle. So in July 1999 I set two pitfall traps there and was immediately rewarded with the capture of three specimens of Kugelann's Ground Beetle. By good fortune I was given the opportunity to work on this beetle for English Nature (now Natural England) under the Scarce Ground Beetle Project which was managed by Dave Boyce and Roger Key. I was contracted to work on Kugelann's Ground Beetle from 2000-2003. The information given below is the result of this work and further studies, concentrating on the longevity of the beetle, conducted between 2004 and 2008 at Aish Tor.



Kugelann's Ground Beetle habitat at Parc Pale, near Lyndhurst, New Forest, Hants (LEFT) and Aish Tor, Dartmoor, Devon (RIGHT)



The main aims of this project were to assess the present distribution of the beetle in Britain and to find out more about its ecology. As part of the work I conducted a mark-recapture study which led to some interesting discoveries relating to the longevity of the beetle. After the contract had finished I continued the study with an aim to discover more about how long these beetles live. As most ground beetles seem to lead a nomadic life it is difficult to obtain any significant data from mark-recapture studies. I found this whilst studying the Blue Ground Beetle. One year I marked over 100 individuals in a small area of woodland, but only recorded a few recaptures in the first few weeks after marking. This probably indicates that the beetles move over a considerable area during their adult life. On my study site at Aish Tor the Kugelann's Ground Beetle is concentrated within small areas of heathland surrounded by dense stands of bracken. It seemed unlikely that the beetles would stray far from these areas allowing an opportunity to follow individual beetles over a longer period of time.

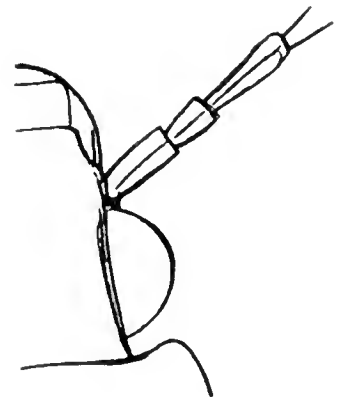
The history of Kugelann's Ground Beetle in Britain

The earliest British record is from Newquay, Cornwall in 1911. The beetle's historic range covers Cornwall, Devon, Dorset, Hampshire, Surrey, East and West Sussex, Middlesex, Norfolk and Nottinghamshire, with a further records from south Wales. Between 1960 and 1990 it was recorded only once from the New Forest in 1970 and based on this it was given the status of RDB1. Prior to the current work it was found at Stagbury Hill, New Forest, Hampshire 1996 and 1998, Bicton Common, Devon in 1994 and Aish Tor, Dartmoor, Devon 1996. As a result of the present study and other recent discoveries the beetle is currently known from 15 sites. Since 2000 it has been recorded from Cornwall, Devon, Dorset, Hampshire and Norfolk.

Identification

Identification of Kugelann's Ground Beetle was made using the *Royal Entomological Society Handbook* (Lindroth, 1974) this Handbook has since been revised (Luff, 2007). The following notes refer to these references combined with my own experience of identifying this beetle and other members of the genus in the field.

Four species of *Poecilus* (pronounced "poik-e-lus") occur in Britain. All are small to medium sized ground beetles (9-15 mm)



Poecilus



Harpalus affinis (left) and *Poecilus kugelanni* (right). Note the difference in the head size.

long which have metallic colours and diurnal habits. They may be confused with some *Harpalus* species. *Harpalus affinis* and *Harpalus rubripes* are ground beetles which are similar in size and appearance. *Poecilus* can be distinguished by their general appearance, smaller head and the ridge along the basal antennal segments (see diagram). The four species are readily split into pairs. *Poecilus cupreus* and *Poecilus versicolor* can be distinguished by the two pale basal segments of the antennae. *Poecilus lepidus* and *Poecilus kugelanni* are larger and more robust in appearance and both have darkened or black basal segments to the antennae.

Poecilus kugelanni Kugelann's Ground Beetle

12-14 mm long. Usually bicoloured with metallic green elytra (wing cases) and copper coloured pronotum (thorax) and head but brown and black individuals occur. All of the completely black specimens I have seen have been males. Bright coloured individuals are distinctive but duller specimens may require checking more closely. The key feature in distinguishing this species is the two basal segments to the





antennae which are dark brown, slightly paler on the underside. The elytral striae (lines on the elytra) have rows of small pits along them.

(See also picture on front cover of this *Bulletin*)

Poecilus lepidus

11-15 mm long. This species has completely black antennae. It is slightly larger and more elongate in appearance than *Poecilus kugelanni*. It varies in colour from metallic pink-brown to black. All the specimens I have seen have been uniform in colouration. It occurs on warm heathlands though I have never found it in the same location as *Poecilus kugelanni*.



Poecilus cupreus

11-13.5 mm long. Usually a uniform metallic green or brown above but individuals occur which are bicoloured and resemble *Poecilus kugelanni*. The two basal segments of this species are clear reddish-brown. The elytral striae have very few pits along them. The head of *Poecilus cupreus* is obviously pitted. A common species found in a variety of habitats. It flies readily and may be found running on paths especially during the spring and autumn.



Poecilus versicolor

9-12 mm long. Like *Poecilus cupreus* it has two pale reddish-brown basal segments to the antennae. The head is almost smooth between the eyes, it may have a few small pits. It is variable in colour from metallic green, blue or pink. It can be found on heathland and moorland.

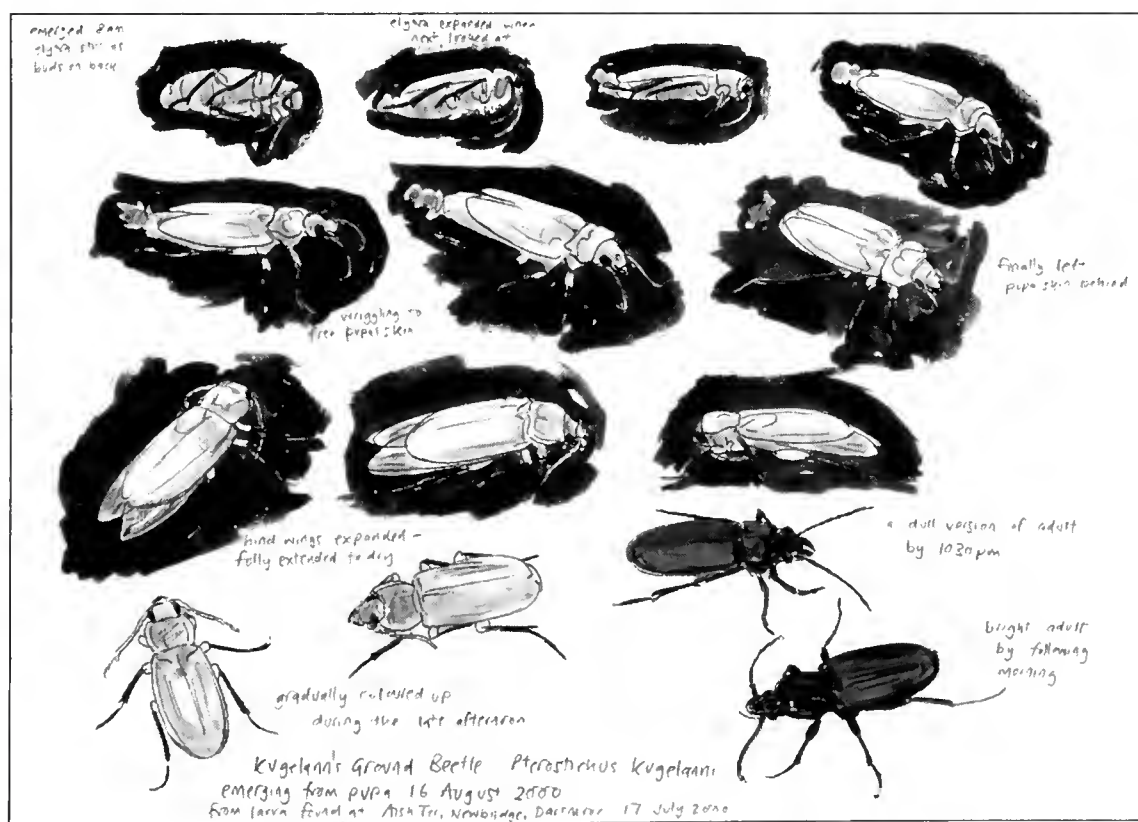




Ecology of Kugelann's Ground Beetle

This beetle inhabits warm heathlands especially where there is bare ground between the heather and grasses. Warm, south-facing slopes are particularly favoured. My study in 2000 at Aish Tor, Dartmoor (Walters, 2001) showed that the beetles do not stray far from their favoured habitat. A series of pitfall traps were set in a line across heather and bracken covered areas of a steep south-facing slope. Very few beetles were found in bracken covered locations even just a metre away from optimum habitat. Also few beetles were found on the flat area at the top of the slope which was not south-facing.

At most known sites in Britain the beetle has been recorded in small numbers but at two sites the beetle is common. These are: Parc Pale, New Forest, Hampshire where the beetle occurs on heathland which has many eroded paths amongst the heather creating bare ground; and Aish Tor, Dartmoor, Devon where the beetle inhabits several small patches of heathland on a very steep south-facing slope in valley of the River Dart.



The adult beetles are active between March and October with a peak of activity from mid-April to mid-June. There is usually a marked reduction in numbers during July and August then a small peak in September when teneral individuals can be found. Adults are diurnal



and may be found running on bare ground amongst heather. Despite their bright colours they are well-camouflaged in this habitat. Mating pairs have been observed during May, June and July and egg-laying probably occurs at this time. Searches under heather, soil and rocks during the winter failed to locate any adults of this species though small numbers of another ground beetle *Harpalus rufipalpis* were found.

Adults have been observed feeding on small dung beetles *Aphodius* sp. in the field but take a wide variety of invertebrate prey including insect larvae in captivity and probably do so in the wild. They also feed on apple placed in the pitfall traps.

The only observation of predation I have made was made at Aish Tor on 30 July 2002 when an adult was attacked and eaten by a Devil's Coach Horse *Ocyptus olens*.

Larvae have been found crawling over rocks and soil during the day and hiding below stones and heather plants. A larva taken into captivity on 17 July 2000 was fed on caterpillars and grew rapidly to 20 mm in length before forming a pupa in soil provided. It pupated on 24 July 2000. On 14 August 2000 the



legs and eyes of the pupa had changed colour from creamy white to black. The adult emerged on 16 August 2000 at 8am. This date is probably earlier in the season than would occur naturally. By 10.30pm the beetle was a dull version of the adult and by next morning had gained its bright metallic colouration although the elytra were still soft. The larva keys out to *Poecilus lepidus* using the Luff (1993) key – the larva of *Poecilus kugelanni* is undescribed.

Mark-recapture study

The aim of this study was to conduct further work on the phenology of Kugelann's Ground Beetle and also to attempt to estimate the population size. A small area (size 70 x 12 metres) was chosen as the main study area as it is known to hold a good population of the beetle. It is also isolated from other areas of suitable habitat being surrounded by extensive stands of bracken.



Two methods were used to locate Kugelann's Ground Beetles. These were baited pitfall trapping and hand searching. Using baited pitfall traps is a very effective method for locating this beetle. The trap consists of a large plastic pot, with drainage hole in the base, buried with the top flush with the soil surface. Some soil and small stones are placed in the pot as cover for the trapped beetles and pieces of apple added for them to feed on. Netting is placed over the trap to prevent small animals such as lizards and mice from falling in. Chilli powder sprinkled around the trap helps to deter badgers and foxes from disturbing it.



Baited pitfall trap.

A plastic bottle containing slices of apple is half-buried beside the pitfall trap. Holes are punched below the lid of the bottle to allow the scent of the fermenting apple to escape. Further slices of apple are placed in the bottle every few weeks to keep this fermentation going.



Kugelann's Ground Beetles in pitfall trap.

Three baited pitfall traps were run in the study area and checked at least once a week. Further traps were set in some years on nearby areas of heathland in an attempt to study movement between pockets of suitable habitat at the site. Kugelann's Ground Beetle is fully-winged though flight has not been observed in Britain.

The pitfall traps were set over the following dates:

- 21 March - 23 October 2002
- 2 May - 28 September 2003
- 29 March - 6 October 2004
- 21 April - 27 September 2005
- 3 April - 20 October 2006
- 27 April - 24 September 2007
- 24 May - 5 June 2008



Hand-searching involves looking under stones, heather and in grass tussocks for the beetles, this is a productive method at one site (Aish Tor) where the beetle is locally abundant but not always effective at sites with smaller populations. The beetles are often seen running on open ground especially on sunny days early in the season (March to early May).

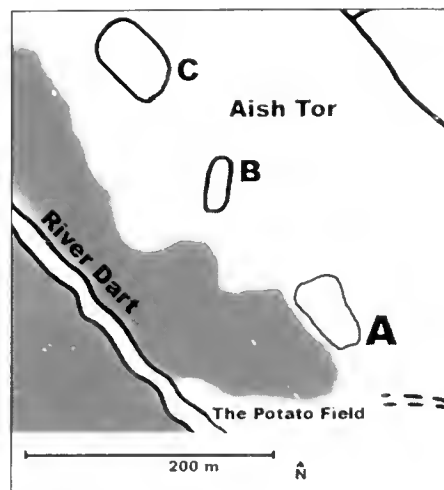
After capture the beetles were marked by scratching numbers on the elytra using a sharp scalpel blade. These marks are permanent and appear to cause little harm to the beetles. The beetles were marked on-site and released a few metres from the traps. They quickly dispersed into the heather. General individuals were kept in captivity for a week before release to ensure that the elytra had hardened enough to permit marking.

The first stage of the project involved giving the same mark to all beetles caught on a particular day. Between 25 March 2002 and 12 June 2003 809 individuals were marked in this way.

Further studies on the longevity of the beetle involved individually marking 300 individuals (182 males: 118 females) between 24 June 2003 and 18 May 2004. Some of these had been marked in previous years so the date they were first captured is known. Of the 300 marked individuals 204 were recorded again in the pitfalls on at least one occasion. Of these 95 were recaptured once, 67 twice, 30 three times, 7 four times and 5 five times.

Results

The mark-recapture study was very successful. Initially I had set it up to attempt to assess the population size at the site but after finding individuals in more than one year I concentrated on working on the longevity of the beetle. A larger proportion of males were captured than females. This is typical when pitfalling ground beetles and probably relates to males being more active as they move around searching for females. In my study of the blue ground beetle I found a much higher proportion of males when searching for active beetles at night in the spring but the proportion of the sexes was almost exactly 50:50 when searching for hibernating individuals in the winter.



Map showing main study site a and sites B and C. Aish Tor, Dartmoor, Devon.



Table showing number of individuals recorded in more than one breeding season (April - July)

No. of breeding seasons	2	3	4
Total	118	36	3
male:female	74:44	26:10	1:2

The results above clearly show that a significant proportion of beetles are active in more than one breeding season and it is likely that the majority of individuals are active in at least two breeding seasons.

More detail is given below on six interesting life histories including the longest-lived individual in the study. Note that two of the individuals were marked as teneral so would have been just a few days old at the time. Old individuals can usually be recognised by their worn appearance including missing and broken legs and antennae, this is probably true for most ground beetles.

No. 64 male

First marked 17 June 2002

Retrapped 5, 13, 27 July; 10 August 2003

22 March 2004 – found running on ground.

Seen in 3 breeding seasons – probably emerged in August/September 2001.

No. 92 female

First marked 13 April 2002

Retrapped 13 July 2003

24 May 2004

Seen in 3 breeding seasons – probably emerged in August/September 2001.

No. 102 male

First marked 13 July 2003

Retrapped 24 April, 18 May 2004

27 April, 28 May and 19 July 2005

Seen in 3 breeding seasons - probably emerged in August/September 2002



No. 132 male

First marked 17 September 2003 (teneral)

Retrapped 15 April, 6 May 2004

4 and 7 May 2005

First marked as a newly hatched teneral individual. Recorded in 2 breeding seasons.

No 134 female

First marked 17 September 2003 (teneral)

Retrapped 24 April, 6 and 25 June 2005

24 July 2006 2 years, 10 months after first capture.

First marked as a newly hatched teneral individual. Recorded in 3 breeding seasons.

No 297 female

First marked 18 May 2004

Retrapped 25 June 2005

28 May 2007 3 years after first capture.

This individual almost certainly emerged in August/September 2003 and then was recorded in her 4th breeding season.



Female 297 on day of recapture 28 May 2007, 1113 days after initial capture. She was very worn but still ran off quickly when released.

Movements between patches of suitable habitat

In 2003 a number of individuals were marked at sites B and C (see map) in an attempt to investigate movement between pockets of suitable habitat. The following movements were recorded:

No. 63 male

Marked at site B on 9 June 2003

Retrapped at Site A on 5 July 2003

No. 148 male

Marked at site B on 9 June 2003

Retrapped at Site A on 15 April 2004

No. 286 female

Marked at site C on 24 June 2003

Retrapped at Site A on 18 May 2004 - a distance of about 200 metres, the longest movement recorded.



These records show that some movement between patches of suitable habitat occurs. It seems most likely that the beetles disperse by flight as the areas between the sites are covered in thick bracken, though I have never seen one take flight or even attempt to do so. As the beetle occurs in small patches of habitat often within large areas of heathland flight would be the most likely dispersal method. Its close relative *Poecilus cupreus* is known to disperse by flight and can frequently be found running on roads and pavements, particularly in the spring and autumn.

Discussion

There are records of some of the larger ground beetles eg. *Carabus* living for two or more years but the standard textbooks give the impression that most of the smaller species have an annual life cycle. I thought this would be the case with Kugelann's Ground Beetle and the first year of pitfall trapping seemed to confirm this. There were large numbers in spring and summer then very few in late July and August followed by teneral adults in late August and September indicating that the new brood had emerged. The mark-recapture study soon revealed that many adults live for more than one year. The adults which 'disappeared' in mid-Summer appear to become inactive and if they survive, probably do not emerge again until the following spring. From the results given here it seems likely that the majority of Kugelann's Ground Beetles live for two years with a few individuals surviving for three and exceptionally four years.

It seems likely that other smaller ground beetles also live for more than one year but proving this would be difficult. The problem is marking enough individuals in a given area and then being able to recapture a large proportion of these in succeeding years. It seems likely that most species will quickly disperse throughout large areas or move between suitable patches of habitat.

Acknowledgements

Thanks to English Nature (Natural England) for funding the initial work under the Scarce Ground Beetle Project overseen by Dave Boyce and Roger Key. Thanks also to Dave for his advice and help in the field. Devon Wildlife Trust, especially Jackie Gage, for allowing me to study the beetle on the nature reserve and for managing the site for this and



other heathland invertebrates. Tony Allen, Norman Baldock, Peter Hodge, Dave Bilton, David Hance, Ian Middlebrook, John Hunnisett, Andy Schofield and Bryan Sage for additional information. The colony at Aish Tor was first discovered by Peter Skidmore.

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Letter from Spain – 8th in a series – A Tiger in the Garden!

by David Keen (3309L)

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

On the afternoon of 19 June 2009, I ran from my garden into the house and very excitedly said to my wife “Guess what, I have just seen a Tiger in the garden!” I had to explain to her, of course, that it was not the large cat that I had seen, but a specimen of the Plain Tiger, *Danaus chrysippus*. It really was a case of being in the right place at the right time – I had just walked out into the garden a few moments earlier and as I rounded the corner of the house I saw the shadow of a large butterfly on the patio in front of me.

The butterfly then appeared at about head height, right in front of me, brushed against my face and flew off over the garden wall. This brief, but very definite image will remain with me for ever – what a wonderful sight. Certainly it was a butterfly that I had not expected to see so close to home.

What is the history of this butterfly in Spain? The literature that I have consulted is listed under “References” below and the chronological comparison makes for interesting reading. Writing in 1970, Higgins and



Riley say that the species appears to be resident in the Canary Islands on Tenerife, La Palma and Gomera. They add that it occasionally reported from the Mediterranean area, especially from Greece and southern Italy and is a rare migrant in Morocco. The flight period is given as “throughout warm months.”

In the 1998 edition of his book, John Feltwell gives the distribution as “Canaries, occasional (sic) in Morocco, Italy, Greece” and the flight period as “June-October”.

In his publication of the same year, Manuel Diaz, gives a much more detailed account of the history of this butterfly in Andalucia. He says that it is establishing itself not only in the coastal areas, within the eastern third of Andalucia and also in inland areas in that part of Spain. He goes on to say that the food plant – *Asclepias curassavica* – is an ornamental plant which has been introduced into Spain and has become well established in the costal areas of the Provinces of Malaga, Granada and Almeria. Where there are established colonies, the butterfly is multi-brooded and appears in all months of the year.

On the Lepibase CD, 2000 version, Antti Roine, concurs with Diaz’s flight period but says the species is resident in the Canary Islands of Fuerteventura, Gran Canaria, Gomera and La Palma and is only given as a migrant in coastal areas of the south of Spain.

Thus, it would seem from these references that my sighting of this species in our Province of Seville is very interesting. Regular readers of my “Letters from Spain” – (I hope there are a few!) – will be aware that I live about 100 kilometres inland from the sea. I have to say that I doubt very much that there is any chance of seeing the food plant locally. There are no ornamental municipal gardens in the local villages and the people who do have gardens tend to grow only native flowers, roses and various Jasmynes.

If any members have seen this butterfly whilst on holiday in mainland Spain I would be interested in hearing from them.

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Observations of egg laying behaviour by the RDB-Nb crane-fly *Tanyptera atrata* (Linnaeus 1758)

by Dr Dave Skingsley

<http://www.bugbotherer.org.uk>

I was made aware of the presence of the RDB-Nb crane-fly *Tanyptera atrata* by members of a local photographic society in May 2008, who asked for my advice on identification of a large wasp/fly they had encountered on one of their nature walks (Figure 1a). I was glad to confirm the identification of a male of the striking fly: *Tanyptera atrata*.

Having succeeded in getting an approximate grid reference (Salt line Alsager SJ794566) I waited for some good weather and set out to see if I could confirm the sighting at that grid reference. To my delight I encountered three female *Tanyptera atrata* resting in foliage near a gap in the tree-line at the side of the path (figure 1b). I thought it unusual to see that many females in one place so I decided to stop and watch their behaviour.

After observing them for a few minutes they all left the trees and descended into the undergrowth, which on closer inspection contained some rotting oak logs. These logs had been left there from some clearance work undertaken by the Ranger service over the previous



Figure 1a. male *Tanyptera atrata*.
(photograph supplied by Ms S. Crawford,
Alsager Photographic Society)



Figure 1b. female *Tanyptera atrata*.
(photograph D. Skingsley)



Figure 2a. female *Tanyptera atrata* probing the surface bark of an Oak log. (Photographs D. Skingsley)



Figure 2b. female *Tanyptera atrata* searching the gap between the bark and rotting heartwood of an Oak log.

few years (personal communication with the ranger). It was these logs, and in particular the larger logs (30-50cm diameter), that the females showed most interest in. They all spent several minutes walking the bark surface and probing with their ovipositors (figure 2a) in the deeper folds of the bark. Each probing took less than a second to perform but my subsequent observations make it unclear whether oviposition had taken place. At some time during this probing behaviour all the flies encountered the cut end of the log at which they got very interested in the gap between the bark and the heartwood. More time was spent probing this gap from a stationary position compared to the bark. In addition a much longer time was also spent inserting the ovipositor (and abdomen) into the gap between the bark and heartwood (approximately eight seconds. Figure 2b). Although I returned to the site the following May (2009) I could find not find evidence of adult flies. Unfortunately this means I am unable to confirm if the behaviour I observed was associated with successful egg laying, or that this fly has a larval cycle that results in biennial (or longer) adult emergence. I will however return this May (2010).





Ebay buyers beware!

by Malcolm Simpson 2735

Harvest Lodge, Foxenfields, Abbots Ripton, Cambridgeshire PE28 2PW

P. B. M. Allan would turn in his grave if he knew what astronomic prices British butterflies are now being sold at on ebay. Allan famously campaigned against rogue dealers selling Continental examples of rare British species, with appropriate false data labels, to unsuspecting collectors at prices most advantageous to the seller. He dubbed a certain group of these rogue dealers as 'The Kentish Buccaneers' and their antics make for interesting reading in *Talking of Moths* (1943) where a complete chapter is devoted to their dubious dealings.

But what has this got to do with ebay? My attention was drawn to a butterfly advertised for sale on ebay (January 2010) which was described as "British Swallowtail, *P. machaon* Britannicus. Black Ab." A rather indistinct image accompanied the advertisement. The advertisement offered the additional information. "Here we have something very special. This specimen is a massively aberrated 'black' version of the British Swallowtail. Data tag reads, Cambridge 1968, B.O.C. Gardiner. Such a specimen is never likely to reappear for sale". No doubt encouraged by this description the successful buyer paid the enormous price of £255!

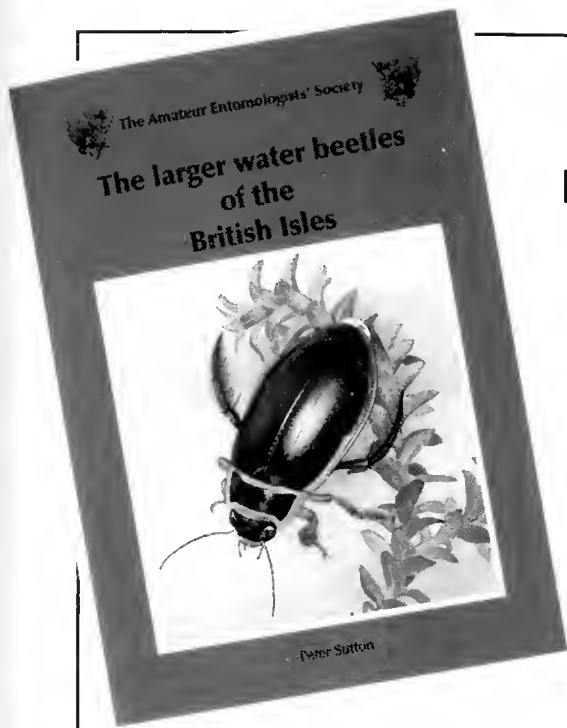
I sent a copy of the ebay advertisement to Brian Gardiner, still living in Cambridge, for his comments. The following is his reply.

"Thanks for info re my alleged black swallowtail which is actually the North American *P. polyxenes* worth about £1. Be very wary about what you find on ebay. I hope the £255 buyer is happy about his purchase!

If I had bred it, which I did not, it would have been exhibited, published and still in my cabinet of Swallowtails. All *P. machaon* I bred are labelled 'ex Norfolk stock' so the Cambridge label will have been taken from one of my Cabbage Whites."

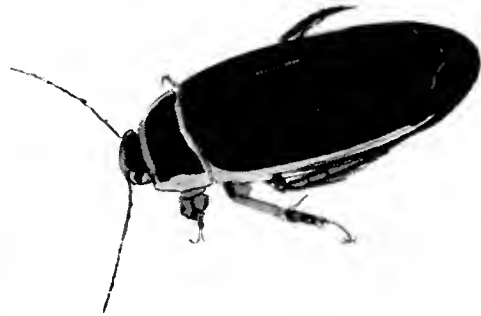
P. B. M. Allan opens his chapter on 'The Kentish Buccaneers' with these words: "So long as there are auction-room collectors, so long, I suppose, will there be dealers ready to take advantage of them."

Ebay buyers beware!



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The
Bulletin
of the Amateur Entomologists' Society

Volume 69 • Number 490

June 2010

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The Bulletin



75th Anniversary
1935-2010

of the Amateur Entomologists' Society

Volume 69 • Number 491

August 2010

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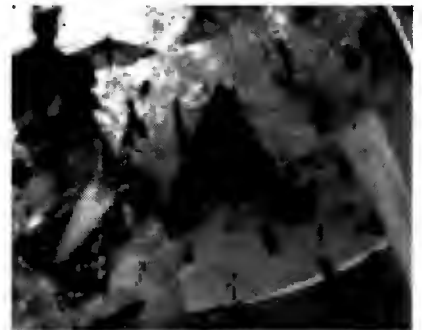
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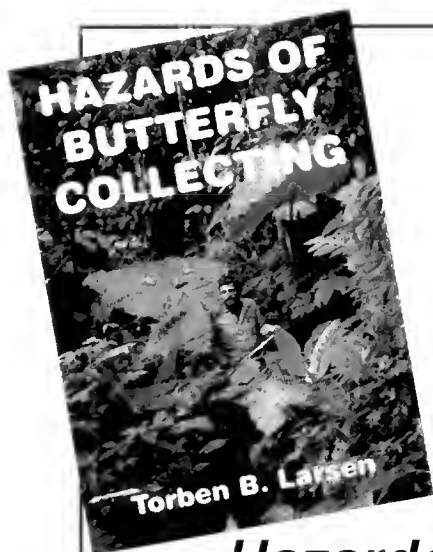
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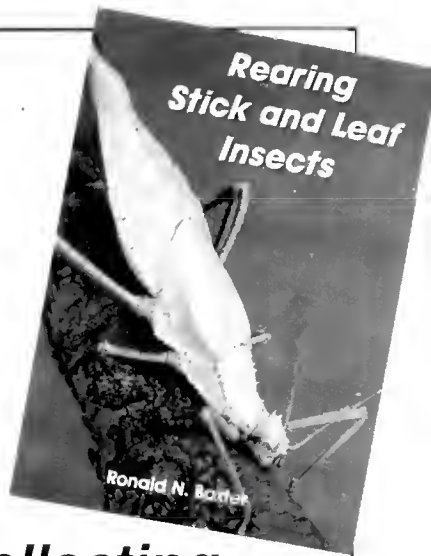


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Bulletin Cover



This month's cover picture shows a mating pair of the weevil *Phyllobius pomaceus*. This species is sometimes known as the Green Nettle Weevil. There are ten species of *Phyllobius* in Great Britain, all of which are quite similar.

The photo was taken by Dr. David Skingsley. More of his work can be found on his website "The Bug Botherer's natural history picture archive from near Alsager in South Cheshire" <http://www.bugbotherer.org.uk/>

We are most grateful to him for allowing us to use his pictures.

The
Bulletin
of the Amateur Entomologists' Society

Volume 69 • Number 491

August 2010

Editorial

Welcome to the *Bulletin* for August 2010. So far the summer has been quite mixed in terms of weather, which has meant that some insects have had poor years, while others seem to be having a bumper time. For example, while I write this, in Norfolk, we are having exceptional numbers of Silver-Y moths *Autographa gamma* and Gatekeepers *Pyronia tithonus*, whereas levels of the Soldier Beetle *Rhagonycha fulva* are nowhere near their usual abundance. Similarly, early moths were very low in numbers, whereas the midsummer quantities were much higher. It has been a good year so far for dragonflies in Norfolk. There have been fine populations of Norfolk Hawker *Aeshna isosceles*. It is also reassuring to hear from Suffolk that Willow Emerald Damselflies *Chalcolestes viridis* seem to have survived the harsh winter.

As you should be aware from the front cover, 2010 is the 75th anniversary of the Amateur Entomologists' Society, you will also find enclosed with this issue a window sticker to help celebrate the event and promote the Society. Having weathered several stormy periods, the Society is in a stronger position than it has been for some time. The Bug Club, our youth section is thriving and there are more activities than ever. Hopefully, this is reflected in an enthralling *Bulletin*. I hope that you agree with me that there is an interesting mix of articles. Hopefully, also members will be inspired to contribute to future editions!

Phil Wilkins



A Brown Argus *Aricia agestis* enjoys the sun at Minsmere, Suffolk. August 2010. Photo by Eleanor Wilkins



Society Matters

New AES Membership Benefit

AES members now qualify for a **25% discount** on the first year of individual membership of the Society of Biology (www.societyofbiology.org). To join, please email jonkudlick@societyofbiology.org, stating that you are a member of AES, and you will be sent the application form to complete.

The Society of Biology has grades of membership suitable for all levels of skills and qualifications, including interested amateurs. See their website for full details of membership grades: <http://www.societyofbiology.org/membership/individual-membership/membership-grades>.

The Society of Biology represents many biological learned societies and other organisations, as well as thousands of individual biologists. Its membership represents a total of over 80,000 biologists around the world. By joining, you could work towards becoming a recognised Chartered Biologist (CBiol).

Membership benefits include a quarterly journal ('The Biologist'), access to local branch events and discounts on publications and on certain memberships, such as the Science Museum and Kew Gardens (and Virgin Wines).

AES Anniversary Window Sticker

Enclosed with this mailing you should find a window sticker to mark the 75th anniversary of the Amateur Entomologists' Society.

Join The 'Big Society'!

1. AES Council Opportunities: Charitable volunteering is increasingly popular these days, and is often seen as a good way to gain new skills and experience. It is also something the new coalition government is keen to promote in its 'Big Society' initiative!

We currently have four vacancies on Council (the full complement is 18 members). Council members are trustees of the charity and meet on a Friday evening in London four times each year.

Some Council members take on Officer roles. For example, Peter May has ably acted as our Treasurer for the past ten years, but we will be looking for his successor in the coming months (Peter will stay on Council in a different role). We will also need a suitably qualified volunteer who is not a Council member to act as independent



examiner of the accounts at the end of this year, following John Flynn's retirement from that role after many years of valued service.

If you would like to join this happy band and help set the future direction of the Society please contact the Hon. Secretary (email: secretary@amentsoc.org; tel. 07733444731) or any other Council member for further information. The current incumbents range from those who have served the Society for decades to those who have joined very recently. Whilst expert entomologists and conservationists are welcome, so are those whose primary expertise lies elsewhere – such as in organisational matters, planning or running events, or just those with plain old common sense who would like to make a difference and 'put something back'.

2. Promoting the Society: Members who would like to support the Society but do not wish to become trustees could usefully display information leaflets or display banners promoting the Entomologist's Record, the Bug Club or the AES, as appropriate, at events they are organising or attending. These materials are available from the Hon. Secretary. Help to run AES events is always welcome too.

Snippet from AES History: It is a little known fact that in July 1947 an Australian Branch of the Amateur Entomologists' Society was started by K. D. Fairey, a timber entomologist in New South Wales, aided by Miss E. C. Chugg of Melbourne. To start with, because members were scattered through several States, no meetings were held for some time. From 1950 to 1952 meetings were held in Sydney, and the first President was L. H. Mosse-Robinson. Two mimeographed volumes of the *AES - AB Bulletin* were produced, as well as three parts of a volume of *The Australasian Entomologist*. In 1952 the organization changed its name to the Entomological Society of New South Wales, with L.H. Mosse-Robinson as first President.





Forthcoming AES Events

Details of AES and other events are listed in the Events section of the AES website www.amentsoc.org. The following are the main AES-organised events in the coming period.

Saturday 11th September:

Annual AES Open Day At The Oxford University Museum Of Natural History

Parks Road, Oxford OX1 3PW. 11:00 – 4:00.

Meet up at the Museum's entomology department (upstairs) at 11:00 am.

This event will commence with a 'bug hunt' for younger members in the nearby University Parks, employing various field methods including a vacuum sampler, followed by lunch and examination of insects in the Museum. Microscopes and other equipment will be provided.

There will also be a tour of the Hope Entomological Collections, and for younger (or young at heart) members there will be opportunities to handle live insects and tarantulas etc. This event will be led by Darren Mann. It would help with the arrangements if you could please let the AES secretary know beforehand if you plan to attend – secretary@amentsoc.org.

Saturday 2nd October

AES ANNUAL EXHIBITION & INSECT FAIR

Please note the earlier date of the AES Exhibition this year. The Exhibition is the largest of its kind in the UK and has served as a major meeting place for the entomological community since 1946. We are always grateful to those members who are able to donate equipment or livestock they no longer need to the Bug Club on the day, or who can spare an hour or so to help man the stand. Do come along and bring an exhibit - don't forget that there is a generous prize (The Bradford Award) for the best exhibit by an adult at the Exhibition!

Saturday 9th October

Annual Exhibition Of The Quekett Microscopical Club

We will have a stand at the annual exhibition of our affiliates the Quekett Microscopical Club, at the Natural History Museum in London. If anyone would like to show a microscopical exhibit at the event please do come along.



More spectacular beetles and other insects from the island of Corfu (Kerkyra)

by Dr Peter G. Sutton (7388)

2 Fir Tree Close, Flitwick, Beds. MK45 1NZ.

At the end of May 2010 I returned to Corfu to complete the photography for a forthcoming book describing the wildlife of the island. The purpose of the visit was twofold: to catch up with the elusive handful of reptiles and amphibians that I had not yet captured on film, and to continue to search for some of the spectacular invertebrates to be found on the island including, among other species, the European Rhinoceros Beetle *Oryctes nasicornis*. I knew that this huge beetle must exist, perhaps even in good numbers, on the island. Its presence was betrayed through the regular observation of its nemesis, the largest European solitary wasp, *Megascolia maculata*¹, which parasitizes its gigantic larvae. (The larval cocoons of *Oryctes* can apparently attain the size of a duck egg.) However, where to begin looking was anyone's guess, although it is well known that in addition to its traditional deadwood habitat, it can often be found in large compost heaps and piles of sawdust. It is also crepuscular, flying, as does the Stag Beetle *Lucanus cervus*², from twilight onwards.

I began my dual quest near the southern tip of the island at Kavos where I knew that I could search for the Aesculapian Snake and find a myriad of invertebrate species in its flower filled meadows and woodlands. The olive groves that backed onto the main town strip clanked with the bells of tethered goats as I headed toward the meadows above the distant wooded ridge. In the dappled woodland, each shaft of light that came through the canopy seemed to illuminate the fluorescent pink orchids like beacons. The woodland was alive with butterflies and other insects, and I had not encountered Wood White butterflies in such numbers before, slowly fluttering their dainty forms to the next nectar source with characteristic delicacy. It was not long before I had discovered a new species of chafer beetle, nestled in an astral formation of pink and white petals. At first glance it looked like a hairy humbug, unlike any chafer that I had seen before, and indeed, I could not recall seeing this species in any book. It was the beautiful *Eulasia pareyssei* (Plate 1). Soon to follow was the

¹ See Plate 17 in *AES Bulletin* Vol 68 (No. 485)

² From the Superfamily Scarabaeoidea, both the Stag Beetle (Lucanidae) and the European Rhinoceros Beetle (Scarabaeidae: Dynastinae) belong to groups which exhibit marked sexual dimorphism, and occasionally, extraordinary hypertrophic growths (e.g. 'antlers' and horns.) The tropical representatives of these families in particular are among some of the largest and most remarkable species in nature.



unmistakably large metallic green species, *Potosia aeruginosa* (Plate 2) which was found in leaf litter under a sheet of tarpaulin. Until I found an example of this impressive species, I was under the impression that only the Rose Chafer *Cetonia aurata* existed on the island. Meanwhile, a clearly irate specimen of the red banded spider (which is occasionally mistaken for the Black Widow spider), *Steatoda paykulliana*, raised its frontlegs at the hand I was leaning on to lift the tarpaulin, so I quickly removed it from danger. A few minutes earlier I had also encountered the largest European centipede, *Scolopendra cingulata*. Both species are reputed to have a very painful bite, which is toxic, although not life-threatening to humans, and it is clear that a degree of caution must be taken when lifting dead wood and other objects in this region. Certainly, in the case of the centipede, there have been cases of hospitalization where symptoms, including local tissue necrosis, have required lengthy medical treatments. Interestingly, on two counts: the unpleasant tissue necrosis caused by the centipede is not, apparently, susceptible to subsequent bacterial infection on account of the inherent antibacterial properties of the centipede venom (along with research on Alligators, could this provide another potential lifeline in these days of bacterial resistance to antibiotics?); and research into the qualities of *paykulliana* venom has revealed the presence of a potentially useful high molecular weight compound with insecticidal properties.

At the end of the olive grove, I located a familiar winding lane that took me to the top of a hillside, and I viewed a track that led across the shallow sloping meadows to a hidden stream flanked on each side by olive groves and woodland. The hedgerow flowers on each side of the track danced with a profusion of satyrid and lyceanid butterflies and the occasional chafers, *Cetonia aurata* and *Oxytbraea funesta*. In a split second, I found myself diving into the grassy scrub of a bank, only to be left wondering whether the bold-scaled apparition that seemed to pass straight through my glove was another rare quarry, the Large Whip Snake, or the more commonly encountered Balkan Whip Snake. I dusted myself down and continued on my journey. As the track split into two, I followed the path that led towards the laughing calls of what were almost certainly Balkan Marsh Frogs in the stream, and spied a minute, and as yet, still unidentified jewel beetle (*Anthaxia* sp.) on a solitary flower in the middle of the track. I was led away from the path by another snake, this time, the beautifully marked (and impossibly fast) Dahl's Whip Snake, but again, to no avail. I lifted a small log which revealed the ubiquitous cockroach, *Loboptera*



decipiens, and its possible predator, the relatively harmless scorpion *Euscorpius flavicandis*. On previous visits I had seen large fritillaries in these woodlands which I had hoped to see again. It would have been nice to positively identify and photograph the Cardinal *Argynnis pandora*, but the only fritillary on show (in the meadows) was the Spotted Fritillary, *Melitaea didyma*. At the end of the woodland track was another meadow and a number of species, notably a very large Balkan Green Lizard, were using a cluster of molehills as basking stations. As I walked past each one, a firework display of orthopterans leapt into the air and cascaded into the surrounding grasses. I saw what I thought was another specimen of the black and white chafer *Oxytrea funesta*, and had to do a double take. This one was smaller than usual and looked as if it had recently crawled out of a bottle of hair restorer. It was its close relation, the appropriately named *Tropinota hirta* (Plate 3). A particularly nice species was the orange and black meloid, *Mylabris variabilis* (Figure 1) which was found nectar feeding alongside a number of butterflies, which included the Grizzled Skipper *Pyrgus malvae*, and the Green-underside Blue *Glaucopsyche alexis*.



Figure 1. The meloid beetle, *Mylabris variabilis*.



It was time to move on, and relocate to the dunes of Lake Korission to see if they would yet yield a specimen of the nocturnal and mammal burrow dwelling Sand Boa. After getting carried away with a final twilight search for the Aesculapian Snake, I cut my losses and travelled along the Lefkimmi road towards Agios Georgios, knowing full well that I would be too late to book into any respectable form of accommodation. Then, as I passed through the village of Argirades, an almost subliminal message made me pull into the side of the road. I had seen something glinting in the road that demanded investigation and began walking the full twenty yards towards it. As I drew closer, I noticed that the object shining in the moonlight was moving slowly across the road, and I began to smile, ever more broadly with each step, as I realized that my instincts had led me to what I had been looking for. It was a magnificent male specimen of the European Rhinoceros Beetle *Oryctes nasicornis*! (Plate 4). I held the magnificent dynastid in the palm of my hand, fully aware of the fact that it was absorbing body heat and getting ready to fly again, and so I stored it safely in a container with some wood soaked with fruit juice (which it immediately fed from) until it could be photographed in the morning. I did manage to get some accommodation, albeit at a predictably exorbitant price, but it was worth it to get away from the deteriorating fragrance of the car. Being frequently perfumed with the malodorous exudates of reptiles, amphibians and invertebrates, coupled with excursions into swamps and certain other habitats, does not lend itself well to the maintenance of an acceptable aroma, and frequently reminds one of that immortal line delivered by Rowan Atkinson in *Blackadder*: "Good Lord, this place smells like a pair of armoured trousers after the 100 years war!"

Korission, as ever, was wonderful. I will never tire of walking out onto the dune system before sunrise and watching the whole place come to life. From the time the Scops Owl hoots its last, and the first birdsong from the darkness heralds the distant glow of dawn, the transition from dew-filled dormancy to sun-fuelled activity can occur within an hour. This golden spectacle is briefly accompanied by the heady, intoxicating fragrances that are lifted from the flowers, herbs and shrubs of the dunes, as the rapidly increasing warmth of the Mediterranean sun shrinks every last glistening bead of moisture to nothingness. On this day, the focus of my attention was a small track at the southern edge of the dune system, which was surrounded by trees, walls of wild roses, and verge side flowers on each side. Soon after sunrise, the throng was in full flow. It seemed that at every turn, this amazing corridor would reveal something new to observe and photograph, being inhabited at each level by grasshoppers and



crickets, mantids, beetles, butterflies and dragonflies. On the ground, I sat and watched a small juvenile Hermann's Tortoise chewing at the petals of a dune flower. Within a yard, (after making way for a determined column of large black ants), I found what I took to be *Pentodon idiota*, a large black beetle that looks like a cross between a *Geotrupes* and a typical chafer (Plate 8). This species is, apparently, a great rarity across most of Europe, having its main foci elsewhere in Africa and Asia. Another chafer, *Hoplia praticola*, was caught by hand in mid-air, and this was immediately followed by a very pleasant highlight. In front of me, a crimson blur that had moved rapidly into view fixed its form onto one of the many blossoms and began feeding. It was the showy cerambycid, *Stictoleptura cordigera* (Plate 5). It was absolutely frenetic in the ever increasing heat but I managed to get three reasonably focused quickfire shots from the camera before it rose rapidly out of reach to higher, inaccessible blooms. As I traced its path upwards, I became aware of a squadron of large blue hawking dragonflies. For a while I watched their masterful display, as they deviated from straight trajectories with abrupt angled turns when the time came to scan new flight paths for prey or competition. Any crossing of territory between these gaudy aerial predators resulted in a brief clatter of gauzed wings as the dogfight quickly established who had the upper hand. I had learnt how to catch these dragonflies from my efforts with a large Emperor Dragonfly *Anax imperator* that I had caught at a hillside quarry lake near Scripero. Sweeping the net to catch them was futile. The trick is to wait until you are directly under a flight path, and as the insect flies above you, thrust the net skyward so that it flies straight into it. It takes a little practice, but it is very effective, and within a couple of minutes, I had caught male and female specimens of the Blue-eyed Hawker (also known as the Southern Migrant Hawker) *Aeshna affinis* (Plate 9). This species has very small antehumeral stripes at the front of its thorax, and characteristic fine black markings on the side of its thorax. The males, in particular, are brightly coloured and have stunning blue eyes. There were also many damselflies and *Sympetrum* species flying, and the latter led to one of the more spectacular hunting sequences that I have seen. I was trying to photograph the extent of the black markings on the face (frons) of a *Sympetrum* dragonfly, which provides an indication of species. Having disturbed the specimen, it took off, only to be dive-bombed by a large robber fly, which immediately gripped it by the thorax and plunged its sharp proboscis between the dragonfly's head and thorax. From that point, it was only a matter of time before the potent neurotoxins that the fly had delivered did their job, and



after five or six seconds where the fly held on to the dragonfly as it tried to escape, the dragonfly suddenly stopped moving and the pair landed in the bushes. The robber fly then began to consume its prize, which was probably three times as big as its assassin (Plate 10).

Later that morning, I photographed the European Rhinoceros Beetle and also a large Mole Cricket *Gryllotalpa* sp. that I had found under an algal mat in a now overgrown concrete leat that flowed into the sea at Issos Beach.

Another destination that proved to be productive for beetles was the mountainous region around Mount Pantokrator. I was also particularly interested in a fairly large yellow scorpion *Mesobuthus gibbosus* that lived in that region, but as yet, had been unable to locate it. By a stroke of luck, I had managed to meet up with fellow herpetologist, Will Atkins and his family at Danilia, whilst studying frogs at the famous lake that Gerald Durrell frequently visited with his great friend and mentor, Theodore Stephanides. Had I known that Will's boys were searching for the Mole Cricket and the Rhinoceros Beetle, I would have kept them for longer. They were doubly disappointed when they learnt that not ten minutes earlier, I had finally caught up with and photographed the rare and highly elusive Cat Snake! Will was staying in the mountains near Vinglatouri, and he and his boys informed me that they had encountered the potentially dangerous scorpion under almost every rock on the mountainside above their cottage. Of course, I went up there and couldn't find a single one. However, on one visit with my son, (who had been fully drilled regarding the dangers of spiders, centipedes and scorpions) and his Grandfather, we literally stumbled across one of the most exquisite European beetles, the jewel beetle, *Anthaxia hungarica* (Plate 6) on the petals of a yellow composite. Like *Oryctes*, this species has long been on the lifetime list of species that I would like to encounter in the wild, along with other, perhaps predictable, species: *Dytiscus latissimus*, *Rosalia alpina*, *Anthaxia candens*, *Ampedus quadrisignatus* etc. A few days later, I did, eventually, find a specimen of the scorpion, and among the many butterflies on the mountainside, I found one more impressively large jewel beetle that looked as if it had been freshly cast in copper, *Capnodis tenebricosa* (Plate 7). Corfu continues to provide all number of surprises regarding its rich flora and fauna. I have no doubt that there are many more to come!





Altitudinal limits of the Common Green Grasshopper *Omocestus viridulus* (L.) (Orthoptera: Acrididae) in Britain

by John F. Burton (13428)

In der Etzwiese 2, 69181 Leimen-St. Ilgen, bei Heidelberg, Germany

Tim and Michelle Gardiner's (2008), and David Horsfield's (2010) interesting articles in this journal on the above subject have prompted me to look through my diaries for some similar observations I made in past years.

From 27 to 29 August 1958, when staying at Capel-y-ffin in the Black Mountains, close to the border between Powys, Wales, and Herefordshire, England, I looked for grasshoppers (Acrididae) on the adjacent mountains (Burton, 1959). On 27 August I crossed the Black Mountain from Longtown to Capel-y-ffin in rather unsuitable weather conditions and found a single Meadow Grasshopper *Chorthippus parallelus* (Zetterstedt) on a rough, grassy slope on the Herefordshire side at about 185 metres above sea-level (asl) and two Common Green Grasshoppers *Omocestus viridulus* (L.): one at 305 metres asl on the Herefordshire side and the other at 366 metres asl on the Welsh side. The next morning, one with frequent sunny spells, I walked up the valley of the Afon Honddu between Darren Lwyd and the Black Mountain, and was soon attracted to a large colony of *O. viridulus* on the steep slope of Darren Lwyd at altitudes of between 550 and 580 metres asl. All the individuals I examined were of the beautiful, intensely emerald-green mountain form mentioned by Burr (1936).

In August 1964 I visited the Isle of Man to try to ascertain the precise distribution of the Lesser Mottled Grasshopper *Stenobothrus stigmaticus* (Rambur), which had only been discovered there in 1962 (Burton, 1965). In pursuit of this aim I travelled over most of the island and naturally made notes of the other Acridids I encountered. During searches on the highest Manx mountain, Snaefell (621 metres asl), I found *O. viridulus* common on the grassy slopes up to at least 396 metres asl. Near Cronk Dhoo (Cronkdoo) this species was numerous at around 300 metres asl above the main road skirting the southern slopes of Sartfell. Again, the majority of the individuals examined, especially the males, were of the same green mountain form mentioned above, although I did come across a few brown ones. They also seemed to be rather smaller than lowland males.



On Exmoor, Somerset, I found the Common Green Grasshopper to be numerous on heather *Calluna* and heath *Erica* moorland interspersed with grass at up to 440 metres asl on Wilmersham Common and around 400 metres on Dunkery Beacon in early August 1969. On Dartmoor, Devon, it was numerous on 17 August 1973 in rushy grassland around the Merrivale ancient hut circles at about 300 metres asl and amongst *Calluna* and bracken at the Grimspound prehistoric settlement at 450 metres asl. I was not then, however, making a special attempt on either Exmoor or Dartmoor to determine the highest elevation at which this grasshopper was to be found. The southerly locations of these two areas and the Black Mountains in South Wales possibly explains its presence at higher altitudes than its populations in Snowdonia and the Lake District. Marshall and Haes (1988), incidentally, stated that *viridulus* has been found up to about 1000 metres in upland Britain, but unfortunately did not give any particulars.

The above observations may be compared with those made by Gardiner and Gardiner (2008) in North Wales, where the highest elevations they recorded for *viridulus* were at 378 metres asl on Snowdon, 405 metres asl at Llyn Brenig reservoir and at 440 metres asl on Haytor, Dartmoor, Devon; and by Horsfield (2010) in the English Lake District, where the highest elevation recorded was at 410 metres asl on Scafell. All the colonies I investigated in South Wales and the Isle of Man inhabited the same types of rushy, fairly dry or well-drained grassland as described by the Gardiners and Horsfield. With the current climatic warming it will be interesting to see if these altitudinal limits will gradually be extended by *viridulus* and other grasshoppers to higher elevations in response to likely vegetational changes.

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Hiking in Switzerland – Butterflies in and around Zermatt

by Owen Hulatt (13903)

1 Victoria House, 13 Huntington Road, York, North Yorkshire, YO31 8RB.

My wife and I spent a week (03/08/09 – 10/08/09) in Zermatt, to celebrate our honeymoon. We resolved to spend the holiday hiking, spending three to five hours on foot each day, following the trails that lead away from Zermatt to the villages higher up the valley. What follows is a record of our expeditions, and the butterflies I was able to note on the way.

Our first full day, a Tuesday, began with a hike from Zermatt to Zum See, a small village about 40 minutes uphill. On climbing the trail, I first encountered what would strike me so often during our time in the uplands – the sheer abundance of butterflies was overpowering, particularly as my only prior experience of butterflies had been on British soil. The trail was somewhat busy, and so the butterflies were often disturbed. This made reliable identification difficult – a problem not encountered on our later hikes, as we left the popular trails and reached higher into the mountains. On this lower trail, there were mainly Whites, Yellows and Blues, with a few Browns (most notably Ringlets). This day, I reliably identified the following – Marbled White (*Melanargia galathea*), Chalk-hill Blue (*Lysandra coridon*), Mazarine Blue (*Polyommatus semiargus*), and Small Tortoiseshell (*Aglais urticae*). Particularly notable was my first ever sighting of the beautiful Scarce Copper, in this case a male of the montane subspecies (*Lycaena virgaureae* ssp. *montanus*). This species was abundant, and could be found adorning the majority of the lower trails. On the way home, we encountered a Spurge Hawk-Moth (*Hyles euphorbiae*) larvae, rather hurriedly trying to make his way across the trail before being trampled (See Colour Plate 11).

The following Wednesday, we hiked to Zmutt, a larger village somewhat higher in the mountains, about 2km above sea level. The trail soon grew quiet, and I was able to (my wife's patience permitting!) take a good look at the butterflies about. The variety of butterflies soon grew as we ascended, too, most notably in Skippers and an abundance of Nymphalidae. The walk to Zmutt was demanding, with plenty of stops. On the way, I identified – Carline Skipper (*Pyrgus carlinae*), Peacock (*Inachis io*) and Stygian Ringlet



Figure 1 (above) and Figure 2 (below). There was an abundance of butterflies



Figure 3. Small Apollo (*Parnassius phoebus*).



Figure 4. Female Scarce Copper (*Lycæna virgaureae* ssp. *montanus*).



(*Erebia styx*). We finally arrived at Zmutt, which is a charming collection of wooden chalets and restaurants, with an excellent view of the North Face of the Matterhorn. In between passing a few Swiss on the trail (and the endless call and response of 'Grüß Gott' this entails!) I spotted the following – Idas Blue (*Plebejus idas*), Chalk-hill Blue (*Lysandra coridon*), Meadow Fritillary (*Melitaea parthenoides*), Red Underwing Skipper (*Spialia sertorius*), Long Tailed Blue (*Lampides boeticus*), Heath Fritillary (*Melitaea atbalia*) and Eros Blue (*Polyommatus eros*). Also abundant was the day-flying moth Narrow-bordered Five-spot Burnet (*Zygaena ionicerae*). Particularly enjoyable, and something I have never seen in Britain, was the extent to which these various species mingled and competed at this altitude. (See Figures 1 and 2). This walk was fairly arduous, and after resting and refreshing ourselves at Zmutt's small water fountain we made our way back to Zermatt. Unexpectedly, the walk down provided the (lepidopteran!) highlight of our holiday – the appearance, in quick succession, of both the Apollo (*Parnassius apollo*) and Small Apollo (*Parnassius phoebus*). These large alpine butterflies are now sufficiently rare to be protected by law, and their scarcity is more than matched by their beauty. I encountered them low on the trail – I spent about ten minutes chasing and trying to photograph a rather old Apollo, faded to the point of transparency. This then flew away, and was almost instantly replaced by a pristine Small Apollo, which proved slightly more receptive to being photographed (see Figure 3). While both of these butterflies are reputed to be somewhat lazy fliers, this was certainly not my experience. Happy and exhausted, we returned to the hotel.

On Thursday, we embarked on our longest hike, to the village of Findeln. This is about three hours walk, up a rather steep set of switch-backs. Again, the length and height of this walk meant the trail was quiet. As a result, there were often great mixed masses of butterflies on the trail, predominantly Whites and Blues, which would swarm into the air on being disturbed by us. Being otherwise alone on the trail, this lent the walk an otherworldly quality. No new butterflies were identified on this day, but particularly noteworthy was the abundance of Skippers on this trail (mainly Red Underwing Skippers). Half-an-hour's walk on from Findeln, we swam in a small lake fed by melt-water. Relaxing afterwards, we found ourselves attended by a Hawkmoth, grasping a blade of grass and slumbering. Unfortunately, seemingly sensing it was being observed, it departed before being identified.



The following day, we were a little worn out by our trip to Findeln, which took about seven hours in total, and so resolved to take the shorter hike to the Gornegrat Gorge, via Blatten, another small village just beyond Zum See. Gornegrat Gorge is fed by glacial melt-water. Above this, one walks along a rather rickety wooden walkway bolted in the rock. Foliage was a little scarce, and so too attendingly were the butterflies. A notable exception was a small outcrop of blooming purple flowers, dancingly attended by a group of Gatekeepers (*Maniola tithonius*).

On Saturday we decided to return to Zmutt. On arriving in Zmutt, I was struck by a beautiful female Scarce Copper (*Lycaena virgaureae* ssp. *montanus*), which was feeding on a small alpine shrub. It was greedy enough to be too involved in feeding to notice me, and so I was able to capture a good photograph (see Figure 4). Coming to Zmutt, we decided to walk on a further 45 minutes to a waterfall, formed by glacial meltwater. En route, I encountered a Small Pearl-Bordered Fritillary (*Boloria selene*). Coming to the waterfall, we sat by the river formed by its flow, refilled our water bottles, and washed our hair to cool down. The water was ice-cold, and had a strong scent of camomile. As we walked away, we encountered the last new butterfly of our holiday – the Mountain Clouded Yellow (*Colias phicomone*). We were a little lower than its customary 2km above sea-level. Perhaps it was drawn to the waterfall by the heat, as we were.

We were exhausted after this final five hour hike, and spent the last few days on less taxing walks in the woods adjoining Zermatt. Hiking in Zermatt brought us into contact with countless butterflies, of varieties I could have never hoped to see in Britain, in the beautiful setting of the Alps. Zermatt is mentioned in Nabokov's short story *The Aurelian*, as a place the main character, a butterfly enthusiast, pines for, dreaming of the butterflies to be found there. This is a feeling I can now sympathise with, and can recommend Zermatt for anyone interested in experiencing a variety and abundance of European Lepidoptera.





Altruism in butterflies, love's labours lost

by Guy Broome

Cairn House, Cumrew, Heads Nook, Brampton, Cumbria CA8 9DD.

Email: Guy.Broome@ncub.nhs.uk

On 19.6.2010 I was photographing butterflies at Arnside Knott, North Lancashire. A freshly emerged female Dark Green Fritillary (*Mesoacidalia aglaja*) was drying its wings. On close observation there was a spider (*Xysticus* sp.) perched on the hindwing of the butterfly. (Colour Plate 12).

A male Dark Green Fritillary (easily distinguished with one hindwing missing) persistently approached the female. I assumed the male was attracted by pheromones and was attempting to copulate with the female. On analysing multiple frame digital photos, I realised that it was persistently trying to knock the spider off the hindwing (Figure 1) and eventually succeeded.

After accomplishing this chivalrous feat. The male with three wings was usurped by a second, intact male. The pair flew, paired a short distance to the romantic location of a red anthill. Sadly, the females wings were not yet fully dried. The second male's attentions left the female in a crumpled and crippled state that would almost certainly have prevented successful ovipositing (Figure 2).

Insects have ganglia, rather than sensate brains as possessed by vertebrates. They clearly are capable of deliberate learned actions but I am not aware that they can exhibit true altruistic behaviour. Unfortunately altruism did not pay off in this case. The first male's DNA was not passed on and it is unlikely that the second male's or the female's was either.

Fritillaries (Argynnae) are closely related to Heliconidae, where males are known to mate with mature female pupae, about to emerge (ref. De-Vreis P. *Butterflies of Costa Rica*). Presumably pupal mating has the advantage of avoiding damage to un-dried wings.

I would be interested in other member's observations or knowledge of altruism in butterflies or other insects.



Figure 1. Male Dark Green Fritillary possibly attempting to dislodge the spider.



Figure 2. Male Dark Green Fritillary attempting to mate with the crippled female.



More runs, fewer crickets!

by Tim Gardiner (11826)

2 Beech Road, Rivenhall, Witham, Essex, CM8 3PF.

My passion for the study of crickets (Orthoptera) is equalled by my enthusiasm for the game of cricket. Indeed, the many hours I've spent cricket hunting have probably been matched by those on the cricket pitch (with varying success with bat and ball). Thoughts of cricket in the dark winter months remind me of long, hot, summer days as much as the familiar chirps of grasshoppers in hay meadows and field margins. I play for a local team, Chignal Cricket Club, whose ground is situated 3-4 km north-west of Chelmsford in Essex (Ordnance Survey grid reference for the ground is TL 668117). The ground is in my opinion, one of the finest in Essex, being located in an idyllic rural setting, surrounded on all sides by thick hedgerows, with arable farmland on its north side, rural gardens to the west and south, and horse paddocks along the eastern boundary. The ground is also graced by the presence of the local parish church which looms over its south-western boundary. Rumours suggest that players of yesteryear have hit sixes into the churchyard, but having never come close, I would suggest that this target is one hit too far!

It is with some interest that Linda Bird (Hon. Fixture Secretary for Chignal CC and maker of the finest cricket teas north of the Thames!!) gave me a copy of *Chignal Cricket Club The First Hundred Years 1900-2000*, which is a fascinating historical record of the club's history since its inception. A thorough read of the booklet illuminates some of the major changes that have occurred in the English countryside, which have affected the game of cricket as much as the landscape itself. For example, in the 1930s and 1940s it was estimated that eight to nine players in the team were working on the land in the Chignal and Mashbury area. The same cannot be said of the current team who generally have few links to the local area and often commute long distances to get to the games (one stalwart of the club comes from west London every week to play!). Of the current 1st team, only one player could be regarded as working on the land, showing just how much farming and the local community have changed since World War II (WWII).

Many Chignal players from the pre-WWII era have reflected on a bygone age, of cricket being played in a meadow which during the week was used for grazing the local cows, to car free roads, and whited players on bicycles. You may be wondering what any of this



has to do with crickets or grasshoppers in the countryside, but the pitches (22 yard long cut strip also known as the wicket) and outfield in the 1930s and 1940s were in essence local meadows, which were cut annually (at best) with a scythe, or grazed by cows or horses. The resulting outfields were often covered in tall grass all over (some players mention grass as high as a foot!) and the actual pitches (or wickets) were said to be treacherous, both factors combined made batting difficult as the batsman could never rely on how high the ball was going to bounce off the pitch (e.g. it either bounced around the batsman's ankles or his nose!). If the unlucky batsman did manage to hit the ball, the long grass in the outfield slowed the progress of it towards the boundary and made it difficult to get more than one run for a shot hit all along the ground (it was never fashionable in those days to hit the ball in the air as in the modern 20/20 games). If you inspect the scores of the Chignal team in the pre-WWII era it can be clearly seen that it was a bowler's game, with 50 runs for an entire team of 11 batsmen often being a winning score. There are several instances of teams being bowled out for less than 10 runs in total (batsman accumulated plenty of ducks in those days!).

We can only imagine how good the grazed outfields, with patches of tall grass, would have been for insects. For example, the insect diversity of grazed pastures can be quite high, with patches of tall vegetation forming a refuge for grasshoppers such as the Meadow Grasshopper *Chorthippus parallelus*, which use such areas as shelter from avian predation, inclement weather and excessively 'hot' microclimatic temperatures. Butterflies such as Common Blue *Polyommatus icarus*, Meadow Brown *Maniola jurtina* and the Biodiversity Action Plan (BAP) species, Small Heath *Coenonympha pamphilus*, would no doubt have been in abundance in the outfield. The latrine areas, where livestock dung was deposited, would also have had tall vegetation due to avoidance of these patches by grazing animals, these tussocks would have been bustling with grasshoppers and bush-crickets. Movements of Meadow Grasshoppers from heavily grazed, short vegetation to tall grassland habitats in latrine areas have been noted in a recent study on the Writtle College Estate near Chelmsford. Movements were highly directional, possibly instigated by grasshoppers 'seeing' favourable habitat over short distances (<10 m) and orienting and moving towards it (Gardiner & Hill 2004). It is therefore possible that a basking grasshopper, disturbed by the passage of the ball through the sward, would have leapt to the nearest tussock!



The change to using gang mowers to cut outfield in the late 1950s has led to much more intensive management of outfields, with it possible to cut the entire playing area to an extremely low sward height on a weekly basis. Such outfields produce more runs as the ball travels quickly across the ground in short grasslands (the vegetation of most outfields is now cut to a height of less than 2 cm). The intensification of cricket ground management has led to the eradication of weeds and tall grassland to such an extent that outfields now resemble intensively grazed pasture or amenity 'parkland' swards which are regularly cut. Grasshoppers are known to suffer mortality during mechanised mowing of hay meadows in the UK (Gardiner & Hill 2006). It is thought that the large size of mature nymphs and adults, and their location in the lower layers of the sward (<20 cm; Gardiner & Hill 2005), may render them particularly susceptible to death or damage through contact with the cutting blades. However, grasshoppers that survive the physical process of mowing may find the resultant short, homogenous sward (<10 cm in height; Gardiner 2006) unsuitable for sustained reproductive or feeding activities, possibly due to the lack of tussocks that provide shelter from inclement weather and avian predation (Gardiner *et al.* 2002). Some authors suggest that short grasslands may be unfavourable for grasshoppers due to high microclimatic temperatures (>44°C), which lead to shade seeking behaviour and vigorous escape responses in several grasshopper species (Willott 1997). The optimum air temperature for development of grasshoppers in the UK is thought to be 35-40°C (Willott 1997). In 'spatially' hostile environments such as cut and heavily grazed habitats, nymphal and adult grasshoppers may disperse to taller patches of grass that provide the required conditions for sustained feeding and reproductive bouts (Gardiner & Hill 2004; Gardiner 2006), leading to a low abundance of grasshoppers in short grasslands with vegetation <10 cm in height (Gardiner *et al.* 2002).

Therefore, less intensively managed cricket grounds with patches of taller vegetation in the outfield and its surrounds are likely to have a higher insect diversity. One such ground can be found at Matching Green (grid reference TL 536110) near Harlow in Essex. This is a lovely ground and the surrounds of the outfield have very long grass and unimproved grassland (unploughed, not sprayed with pesticides) plant species such as Heath Bedstraw *Galium saxatile*, Lady's Bedstraw *Galium verum* and Sheep's Sorrel *Rumex acetosella*. The hay meadow also contains an abundance of grasshoppers and butterflies such as Common Blue and Small Heath. The surrounding ponds are frequented by dragonflies such as the Black-tailed Skimmer *Orthetrum*



Plate 2. The chafer (Scarabaeidae) *Potosia aernigmosa*.



Plate 4. The European Rhinoceros Beetle *Oryctes nasicornis*.



Plate 1. The chafer (Scarabaeidae) *Enlasia parcyssel*.



Plate 3. The chafer (Scarabaeidae) *Tropinota birta*.



Plate 6. The jewel beetle (Buprestidae) *Anthaxia hungarica*



Plate 8. The European rarity *Pentodon idiota* (Scarabaeidae)



Plate 5. The longhorn beetle (Cerambycidae) *Stenoleptura cordigera*



Plate 7. The jewel beetle (Buprestidae) *Cymodis tenbricosa*



Plate 9. The Blue-eyed Hawker (aka Southern Migrant Hawker) *Aeshna affinis* showing characteristic fine black lines on side of thorax.



Plate 10. A large robber fly (Asilidae) with a *Sympetrum* dragonfly that it spectacularly caught and subdued in mid-air.

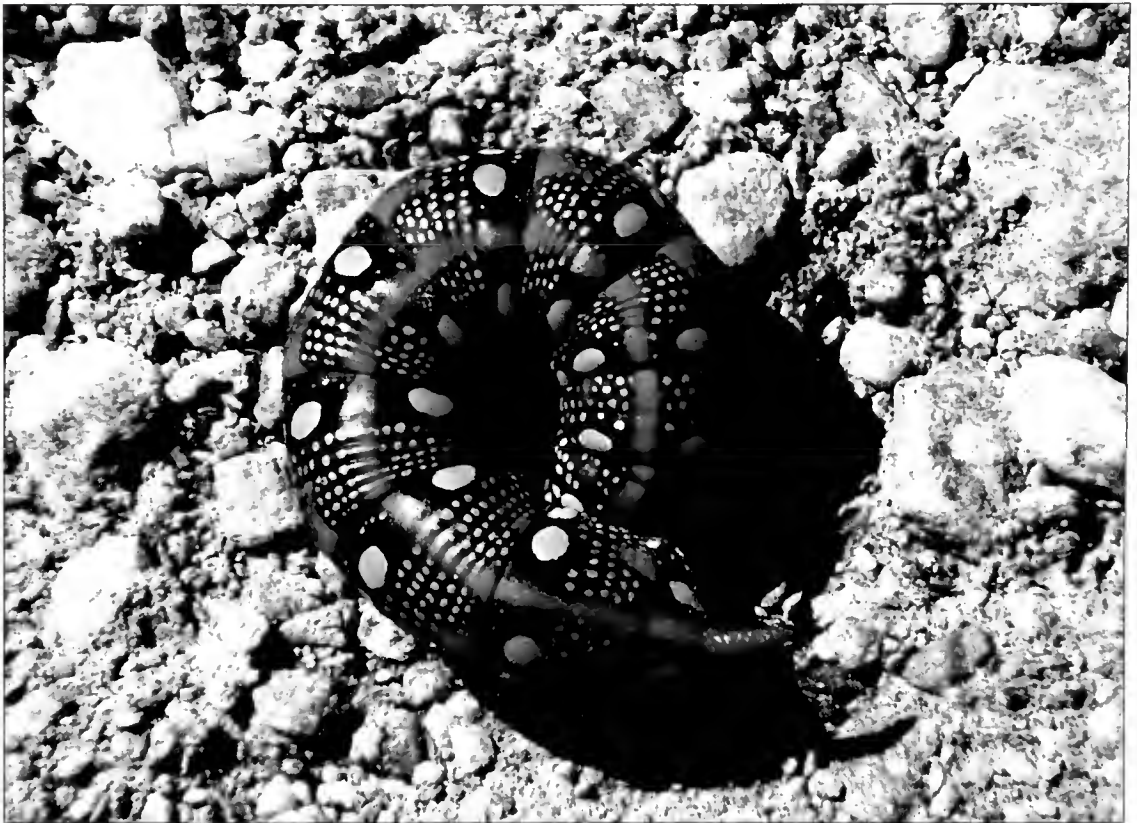


Plate 11. Spurge Hawk-Moth (*Hyles euphorbiae*) larvae



Plate 12. Spider (*Cysticus* sp.) on the hind wing of a female Dark Green Fritillary (*Mesochrysalis aethon*)



cancellatum. These grounds remain a link to the cricket fields of the past, which were more than likely as important to insects as to leather on willow. Due to its high wildlife value, the Matching Green cricket ground and surrounding unimproved grassland have been designated as a Local Wildlife Site (LoWS), covering 4.9 ha, of which the cricket ground (outfield and pitch which are mown regularly in summer) covers approximately 0.8 ha. At Matching Green, cricket takes place in harmony with the flora and fauna, and the experience of the cricketer is immeasurably enhanced by it. It is one of my favourite grounds in the county.

However, unimproved grassland is still under threat from recreational activities such as cricket. An area of unimproved grassland (grid reference TQ 6889) in Basildon (Essex) was surveyed in 1997 by Neil Harvey of Essex Wildlife Trust before the construction of a cricket and rugby ground. The area to be turned into the cricket and rugby ground was old meadowland, grazed by horses, where nine species of Orthoptera were recorded as part of the pre-development surveys (Table 1). This meadowland was reminiscent of the cricket ground outfields of the 1930s and 1940s and could be considered a key site for Orthoptera in Essex. The old meadows contained the Common Green Grasshopper *Omocestus viridulus*, a locally rare insect in Essex included in the Essex Red Data List, and Slender Groundhopper *Tetrix subulata*. The meadows were to be lost to the new rugby and cricket ground, although a small area to remain undeveloped was designated as a LoWS.

Table 1: Orthoptera recorded from the Basildon Rugby Club site before development of sports pitches in 1997 and after construction in 2010 (X indicates presence)

Species	1997	2010
Common Green Grasshopper <i>Omocestus viridulus</i>	X	
Conehead <i>Conocephalus</i> spp.	X	
Dark Bush-cricket <i>Pholidoptera griseoaptera</i>	X	X
Field Grasshopper <i>Chorthippus brunneus</i>	X	X
Lesser Marsh Grasshopper <i>Chorthippus albomarginatus</i>	X	X
Meadow Grasshopper <i>Chorthippus parallelus</i>		X
Oak Bush-cricket <i>Meconema thalassinum</i>	X	X
Roesel's Bush-cricket <i>Metrioptera roeselii</i>	X	X
Slender Groundhopper <i>Tetrix subulata</i>	X	
Speckled Bush-cricket <i>Leptophyes punctatissima</i>	X	X



A visit to the site in July 2010 revealed that seven species of Orthoptera still remained (Table 1), despite the majority of the sports pitches being necessarily mown short for recreational activities (including cricket). It seems that the Common Green Grasshopper has disappeared from the area as the intensive mowing regimes do not leave much tall grass habitat for Orthoptera. The probable loss of the grasshopper comes despite the presence of a fenced 8m wide grass strip along a mature hedgerow, presumably to allow grassland to remain unmown throughout the summer for wildlife. This strip contained grasses of unimproved grassland such as Crested Dog's-tail *Cynosurus cristatus* and Sweet Vernal *Anthoxanthum odoratum*. Despite the apparent absence of the Common Green Grasshopper, the unmown grass strip did contain populations of the Field Grasshopper *Chorthippus brunneus* and Roesel's Bush-cricket *Metrioptera roeselii*, which suggests that some insect diversity has been retained on site, despite the construction of the pitches. A narrow linear strip (1m wide) of unmown grassland remained along a fence dividing two rugby pitches, this surprisingly contained the Meadow Grasshopper and Field Grasshopper. An attractive patch of Tufted Vetch *Vicia cracca* was left unmown (1 m²) around the base of one of the rugby goal posts, but did not support any grasshoppers! Most of the mature hedgerows appear to have been retained as borders between the pitches and these still harboured Oak Bush-cricket *Meconema thalassinum* and Speckled Bush-cricket *Leptophyes punctatissima*.

There have been unsuccessful attempts at establishing cricket grounds in Essex that would have had a highly detrimental impact on Orthoptera had they become active sports pitches mown regularly throughout the summer. However, abortive attempts at establishing sports grounds are not necessarily detrimental to insects of registered commons. In the late 1970s, an attempt was made to create a cricket ground on Mill Green Common (grid reference TL 637013) in Writtle Forest and vegetation cover and soil were removed. This clearance inhibited scrub and Bracken *Pteridium aquilinum* encroachment, and may have caused the regeneration of a small area of Ling *Calluna vulgaris* in the north-east corner of the common. Mill Green Common forms part of the Writtle Forest ancient landscape and much of the common is woodland with relict areas of heathland vegetation and acidic grassland. Despite the removal of vegetation and soil, the locally rare Common Green Grasshopper survived on the common as the disturbed areas were allowed to naturally revert back to heathland after attempts to establish the cricket ground were abandoned. Ironically, the small area of heathy vegetation is almost directly opposite The



Cricketers Pub, perhaps there is a history of cricket playing on the common. The regeneration of heathland vegetation due to the soil disturbance may have inadvertently maintained the heathy grassland needed by this grasshopper, which unfortunately became extinct at Mill Green Common due to a lack of scrub control since 2000 (Gardiner & Gardiner 2009).

Cricket playing was encouraged on other commons in central Essex, such as Norton Heath Common (grid reference TL 601043), where it was actively promoted in a management agreement signed by Ongar Rural District Council in 1909 (Gardiner 2010c). The scraping off of topsoil to create a cricket ground would have prevented the succession from open heath to dense, shady woodland that occurred due to a lack of active management on the common since the 1950s (Gardiner 2010c). The encroachment of woodland had a devastating impact on the flora of this small site (c. 4 ha), which included rarities such as Sickle-leaved Hare's-ear *Bupleurum falcatum*, now found at only one site in the UK (a roadside verge about 1 km distant from the common where it was reintroduced in 1988, Roscoe *et al.* (2009)), and Lousewort *Pedicularis sylvatica*, which is recorded at just three sites in Essex and is yet to reappear on the heath. Tree felling and soil scraping were reintroduced to the common in 2007 by Epping Forest Countrycare in an attempt to regenerate the heathland plant communities that had disappeared. The species richness of Orthoptera was greatly enhanced by this management, increasing from just two sp. in 2007 (when tree felling and soil scraping began) to nine sp. in 2009, proving the importance of opening up the tree canopy for grasshoppers and crickets to provide a warmer microclimate (Gardiner 2010a). The assemblage on the common includes both groundhoppers to be found in Essex (Slender Groundhopper and Common Groundhopper *Tetrix undulata*). The groundhoppers were observed in areas where the humus-rich topsoil had been scraped off to regenerate heathland vegetation.

The common currently supports interesting butterflies such as the Purple Hairstreak *Neozephyrus quercus* and Small Copper *Lycaena pblaeas*, the latter insect is indicative of the heathy vegetation being encouraged by Epping Forest Countrycare, who commenced tree felling and soil scraping on the common in 2007.

At Tiptree Heath (grid reference TL 882147), a registered common, Site of Special Scientific Interest (SSSI) and Essex's best preserved heathland, an unsuccessful attempt to create a football pitch in the 1960s involved the bulldozing of a large area of scrub and woodland,



which is now the best example of dry and wet heathland in the county, with all three heather species recorded (Ling plus Bell Heather *Erica cinerea* and Cross-leaved Heath *Erica tetralix*). It seems that the scraping off of the topsoil led to the germination of all three heathers and halted the process of succession of the heath to scrub and woodland (Forsyth 1978; Gibson 1999; Dagley & Samuels 1999). The abandonment of the football pitch area inadvertently led to the preservation of the largest patch of heathland in the county. There is little doubt that the disturbed east side of Tiptree Heath has the highest concentrations of the Mottled Grasshopper *Myrmeleotettix maculatus* (Gardiner 2010a), a locally rare (and Essex Red Data List) insect found at less than ten sites in the county. The football pitch area also has a high species richness of Orthoptera (nine sp.). It seems that the scraping off of humus-rich topsoil is particularly good for the conservation of Orthoptera on heathlands, particularly those species of early successional stages such as the Mottled Grasshopper (Gardiner & Benton 2009; Gardiner 2010a).

Even intensively managed cricket grounds have some good features, for example, Bee Orchids *Ophrys apifera*, Burnet Saxifrage *Pimpinella saxifraga*, and Cowslips *Primula veris* are found by the edge of the outfield at Pleshey (grid reference TL 664142), suggesting remnant unimproved grassland. The hedgerows surrounding Pleshey cricket ground are good for bush-crickets (such as the Oak Bush-cricket), earwigs, and butterflies. Indeed, the hedgerows around Pleshey cricket ground could be as old as 400 years, an age determined by them having four tree and shrub species/30m using Hooper's rule of hedgerow dating. Old hedgerows are particularly important for the Oak Bush-cricket in Essex; this insect could be considered a good indicator of ancient, species-rich hedgerows in the county (Gardiner 2010b). Glow-worms *Lampyris noctiluca* light up an old hedgerow along the edge of Dunmow cricket ground in west Essex. This locally common beetle is often found in scrubby vegetation at the base of mature hedgerows where its larval food (snails and slugs) is presumably abundant. Therefore, even if the outfield and surrounding grassland is mown short throughout the summer, old hedgerows may still retain some insect diversity at the more rural cricket grounds in Essex.

As with so many facets of change in the UK countryside it will be difficult to turn the clock back (and undesirable from a batting viewpoint) to those halcyon days when batsmen hopped around on the wicket (Pleshey CC once bowled out Chignal CC for four runs) and



crickets hopped around in the outfield! Future development of cricket grounds on sites with unimproved grassland must be resisted to ensure that high insect diversity remains in the last surviving flower-rich meadows and pastures. Having already lost 95% of old meadows in Essex, it is not acceptable to lose any more however high the interest in the game of cricket.

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Letter from Spain - 9th in a series - *Drilid* larvae found locally

by David Keen (3309L)

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

Drilidae is a family of the *Coleoptera*, the larvae of which feed on snails. There is one British species, *Drilus flavescens* (Fourcroy), but I never encountered either the adult or the larva during the years I lived in England before moving to Spain at the end of 2004. Even over here, at the time of writing, I have yet to find an adult.

However, I have found three larvae locally here in Spain. The first time I saw one was during a summer holiday that I spent with friends in their home in the nearby village of La Mezquitilla in June 2001. Just outside their front door I saw this strange looking beast running across the patio. Once collected, I realised that it was a larva and I guessed from its shape and size that it was some sort of beetle larva. However, it was like nothing that I had ever seen before so I decided – without knowing what it fed on – to try to rear it out.- I had to return to England within a day or two so I took it back with me and tried every type of food I could think of (other than snails, I have to say) but with no success and the larva eventually died. It was then dry mounted for my collection.

At this point, let me try to describe the larva. It is 23mm long and 10mm wide – at its widest point towards the tail. The head and legs are dark brown and the rest of the larva is reddish brown. Behind the head, the larva is flat and squat in form. On each side of the abdomen there are a total of eight flat projections, which stick out to the side, and two more at the tail. These projections look like feathers as they are very hairy.

I took the specimen to the next couple of AES Exhibitions and showed it to various members. One or two agreed with me that it was a beetle larva but the majority had no idea what it was. Thus the identity remained a mystery and it was brought over to Spain with the rest of my collection in 2004. Once here, I re-sorted my collection and placed the specimen in the space reserved for “unidentified *Coleoptera*”.

Then, one afternoon, whilst walking home from a trip to the local countryside, I came across another of these larvae which was scurrying across the main road near the top of our street. It was quite a bit smaller than the original specimen but was otherwise the same colour



and shape. Still not knowing what it was or what it fed on, I tried to rear it. All sorts of vegetable matter and insects were tried but, like the first one, this larva duly died a few days later. It was then dry mounted and placed in the collection.

In June 2009, I visited the University Museum at Oxford and showed the two larvae to members of Darren Mann's team. They said "Ah, beetle larvae" which confirmed my own partial identification. A little later Darren arrived and he agreed with this but could not say for sure to which family the larvae belonged. It was agreed that I would retain the original specimen and Darren kept the second one, in order to try, time permitting, to identify it to family if not to species.

In the autumn I received an e-mail from Darren to say that he had established that the larva was from the family Drilidae and that the larvae fed on snails. Thus, it was now down to me to find another larva and snails on which it could feed. On 6 December 2009 I found my third larva during another of my visits to the local countryside – it was running over the main track. This larva, like the one that Darren has, was a good deal smaller than the one I found in 2001. Now I had the larva, could I get it to feed?

There are usually a few snails to be found in our garden and I was quickly able to locate two or three on the wall. These were of the normal round snail shape and probably from the genus *Helix*. I placed them and the beetle larva in a plastic box which was lined with kitchen tissue. During the rest of December 2009 the larva was more or less dormant – only taking the occasional walk around the box. It appeared to take no interest in the snails and I was getting rather concerned that it would never feed. Then, on 4 January 2010, it climbed, head first, into one of the snail shells that was lying on its back – i.e. the shell opening was at the top. There the larva remained, gradually disappearing into the shell, until on 25 January, a quantity of brown liquid was dispelled from the snail shell.

The larva continued to disappear into the shell until 20 February – when it left that shell and climbed into a second shell. At this point I inspected the first shell and found it to be completely empty and dry. The larva continued to eat its way into the second shell until on 2 April, it had completed this meal and left the shell. The following day it entered a third shell and continued to eat its way inside – just like it had with the first two snails.

During the morning of 2 May, it left this third shell and, after a period of inactivity, it shed its skin in the late afternoon. The following day it



tried to enter the shell of a larger snail. However, this was about twice the size of the previous shells and the snail within was able to push the larva out. Both snail and larva then walked off round the box in different directions.

By this time, the larva measured 13mm long by 6mm at its widest point – which is approximately the same size as the one that Darren has. On 4 May the larva entered another of the smaller snail shells and over the next couple of weeks gradually disappeared inside. However, when I inspected the shell on 20 May I found that the larva had died.

During the period of time that I had been attempting to rear this larva I had been in regular contact with Darren Mann by e-mail. At the end of May he wrote to me to say that he had a name for the beetle – *Drilus mauritanicus* Lucas 1849. He kindly sent me a copy of an article published by Bahillo de la Puebla, Lopez-Colon and Baena Ruiz in 2004.

This is written in Spanish but parts, like the title, are also in English – “*Presence of Drilus mauritanicus Lucas, 1849 in the Iberian peninsula and new taxonomical and biological data of this species.*” This article also includes a copy of the original description of the species by Lucas which is in French.

This article provides information about the four species of *Drilus* that have been recorded from Iberia and, having read it several times, I am confident that Darren is correct in his identification of the larva in his possession. To summarise my conclusions, we can safely disregard two of the known species due to their restricted distribution.

Drilus amabilis Schaufus, 1867, is restricted to the Balearic Islands in the Mediterranean. *Drilus concolor* Ahrens, 1812, has been found only in locations within the Pyrenees and the foothills thereof.

I also think that we can ignore *Drilus flavescens* (Fourcroy 1785). Although it is found in many European countries, including England, it has only been previously recorded from the northern third of the Iberian mainland. Previous records of this species from locations around Malaga in Andalusia have been found by Bahillo et al to be misidentification as the specimens have been checked and found to be *D. mauritanicus*. The length of adult *flavescens* is given as 5-7mm by both Joy and Linssen (see references) and Darren says that the larva I gave him is a good deal larger than any of the larvae of this species that he has seen in England. Thus we can say that it is smaller than *mauritanicus*.

There have also been previous references to another species – *Drilus tangerianus* Escalera, 1914. From Bahillo et al, it seems to be pretty



well conclusive that this is merely a synonym of *mauritanicus*, Escalera's original description being based, apparently, on only one male specimen taken in Tangiers, Morocco.

Bahillo et al record *D. mauritanicus* from several locations in the neighbouring Provinces of Cadiz (two sites), Cordoba (four sites), Jaen and Malaga (one site in each) as well as from two sites within my Province of Sevilla. However, none of these sites are within 70 kilometres of my village of El Saucejo.

Descriptions of the larvae of *D. mauritanicus* in both Lucas and Bahillo match the specimen that Darren has and also the one that I was rearing until it died in May 2010. Lucas gives the length as 12-15mm and its maximum width as 5-6mm – both of the second and third larvae that I found are within these parameters. The adults are also larger than *flavescens*, with Lucas giving the length of the male as from 7-9mm and the female from 30-32mm.

It is worth noting that the measurements given by both Joy and Linssen in their text descriptions relate to the male. Both their illustrations of the female indicate a length of approximately 17mm and 12.5mm respectively – i.e. considerably larger than their respective males.

Ignoring my first larva for the moment – I will come back to it later in this article – my only reservation regarding the specific identification of the second and third larvae I have found concerns their food and habits.

Members of the genus *Drilus* have a very interesting life history which I will now discuss in more detail. As I have already said, the larvae eat snails. Lucas does not discuss either the food or the habits of the larvae and Joy, referring, of course, solely to *flavescens*, only says that they are found in snail shells. Leraut, writing about the same species, says that they eat snails and Linssen, also referring to *flavescens*, says the larvae prey on snails and adds “. . . the larval life in fact taking place within snails' shells.”

Bahillo goes into far greater detail on both the larval food and habits of both *flavescens* and *mauritanicus*. The former feeds on various species of *Helix* and *Helicella* together with *Vitrea cellario* and *Hygromia rufescens*. However, *mauritanicus*, has only been recorded as preying on *Rumina decollata* and, very occasionally on *Leonia mamillaris* – I gather that both of these are of the “conical” shell type of snail.

As I said earlier in this article, my third larva fed readily on the *Helix* type of “round” snails. Whether this larva accepted such snails as they



were the only ones offered or because the species does not have such a restricted diet as Bahillo says, I do not know. All I can add at this stage is that I have never found a live example of *Rumina decollata* – only a very few empty shells being seen in the local countryside. Bahillo discusses and illustrates the habits of the larva “moving” its prey before entering the shell. He says that the larva uses its tail end to “hold” and then uses its feet to grasp the ground beneath the larva to move the shell, perhaps to a more secluded spot, before entering the shell head first. Although I kept a good eye on my larva, I did not see it hold or either pull or push any of the snails it preyed on. I can add, though, that the shells, with the larva inside, did tend to “roll” slightly from day to day. There is no mention of the snail “rejecting” the larva but this certainly happened to my larva on 3 May 2010 – see above. I would have thought that the smaller larvae of *flavescens* would encounter greater resistance from the Garden Snail, *Helix aspersa*, which is one of its listed prey species, than my larger larva did from the much smaller snails it preyed upon.

In the course of the studies carried out by Bahillo et al, a total of 28 larvae were found wandering around on the ground and a further 40 found within snails' shells.

As I have said, I have not yet encountered an adult *Drilus*. However, from the literature I have learned that not only the adults but also the pupae exhibit an extreme form of sexual dimorphism. There is not the slightest resemblance between the sexes in either of these stages of their metamorphosis. Thus it is not surprising to hear that the early systematists concluded that the two sexes related to completely different genera! The adult female is completely wingless and her pupa resembles a dormant larva. On the other hand, the adult male possesses a perfect set of wings and his pupa is of the normal beetle type.

In the adult stage, both sexes are to be found in grassy areas on the margins of woods. The female is very much larger than the male and spends all her time on the ground. There she hides under leaves and stones or among low-growing vegetation. They have also, occasionally been found inside snail shells.

Males, which are far more frequently encountered than females, are to be found on flowers. The only reference I have found to the eggs is in Linssen. Here he describes how, after mating the female lays her eggs among turf and grass and then dies. A female may lay as many as 150-500 eggs.



Returning now to the first larva I found. By size it is much larger than the maximum measurements given by Bahillo et al for *mauritanicus* and, as I have said is much larger than the other two larvae I have found. Could this be the larva of a different species? We will have to wait and see if any more larvae of this size turn up – watch this space! (See also “Post Script” below).

I must now spend a few moments to thank Darren Mann most profusely for all his help with the identification of the larvae. Without his help and encouragement I could not possibly have started to rear these interesting beasts. Also, of course, I would not have been able to write this article.

So Darren, please take a bow and accept my most sincere thanks.

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Post Script

Having completed the final draft of this article on 8 June 2010, I had to visit the local chemist before I could send it to the Society for publication. This entailed walking right through the middle of the village as the chemist is on its far side from here. On this walk I found two larvae which were scurrying along the pavement – about ten metres apart. Both measured 25mm long by 10mm wide.

Thus, they are slightly longer than the first larva I found and very much larger than the maximum measurements given by Bahillo et al. I brought both larvae home, placed them in separate plastic boxes with a selection of “round” *Helix* type snails. I will keep you posted as to developments!





Spanish butterflies

by *Barbara Mulligan*

Email: barbara.mulligan@talk21.com

I thought that readers may be interested in my recent recordings. I spend a lot of time in a place called Torrevieja (south of Alicante in Spain) and opposite where I stay there is a lovely walkway beside the sea all the way to Punta Prima (about 1-2 kilometres). During November 2009 and early December, there were alot more butterflies than previous years probably due to the weather being unusually warm.

Clouded Yellow and Painted Ladies were very abundant and I saw a White form of the Clouded Yellow. Also very common was the Geranium Bronze. In addition I also saw a few Red Admirals, Small and Large Whites, Common Blues, one Small Copper and one Monarch. Regarding Moths, there were several Crimson Speckled moths flying by day and one Silver Striped Hawk. I also saw Wasp spiders, and larvae of the Rose Sawfly. In addition, as of previous years, larvae of the Oak Eggar moth were very abundant.

I returned in February and stayed until the end of March. The weather conditions were cooler and cloudier than of previous years.

Through February I saw Small and Green Veined Whites including the dark form of the Green Veined White, Geranium Bronze butterflies and plenty of Hummingbird Hawk moths.

In March, I saw plenty of Green Veined and Small Whites, a few Geranium Bronze butterflies, one Small Copper, one Clouded Yellow and one Painted Lady. I returned home on 28th March.






AIDGAP key to the Adults of British Seed and Leaf Beetles


by David Hubble

A draft AIDGAP key to the Adults of British Seed and Leaf Beetles is now available to download for testing from <http://www.field-studies-council.org/publications/seedbeetles.asp>

If you have a previous version, please discard this as several of the keys have been substantially re-written. I hope you find the key useful and are able to provide feedback to the Field Studies Council (via the webpage above or the form at the end of the key) – it will all help in the production of the final version. Testing continues until October with the deadline for feedback on 1st November.

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Minotaur beetles fight for over 12 hours

by Maria Fremlin (12447)

25 Ireton Rd, Colchester, Essex CO3 3AT

<http://maria.fremlin.org>

Illustrations by Carim Nahaboo

54 Oak Hill Crescent, Woodford Green, Essex IG8 9PW

carimnahaboo@yahoo.co.uk

Introduction

Minotaur beetles, *Typhaeus typhoeus* L. (Coleoptera: Scarabaeoidea: Geotrupidae), Figure 1, do not fight above the ground, as many other scarabaeoid beetles do (Arrow, 1951). In fact, they spend very little time up there because they are mostly nocturnal burrowing dung beetles and generally come out to forage in the evenings; therefore their underground fights have only been described previously in detail in an artificial burrow cast in plaster-of-Paris (Palmer, 1978).



Figure 1. *T. typhoeus*: top, the male, 16 mm, has three forward pointing horns and the central one is shorter; right, the female, 18 mm, has spurs on the sides of a transversal ridge, one of which is visible on the photo.



The fight that I'm going to describe here was inside a terrarium filled with moist sandy soil where the beetles were not so restricted. It happened because I was trying to find out if a 'ménage à trois' would work out in the terrarium. Lots of beetles have been successfully reared in such terraria but only with one male and one female at a time (Main 1916-7, 1917; Brussaard, 1983). They form pairs and there is strong male-female co-operation during the nesting period when they build a nest at the end of a rather deep burrow, sometimes down to 1.5m; it is a labour intensive process. At the bottom of the burrow, on side branches, the female prepares a brood mass of compressed dung next to each egg. The male tasks are uppermost: removal of the soil, collection of the dung and, most importantly, defence of the burrow.

Methods

I collected *T. typhoeus* in pitfall traps in Hilly Fields, Colchester, TL985254, on 6 November 2008, and kept them in a well ventilated unheated garage where they spent their maturation period in jars filled with moist sandy soil, feeding on rabbit dung. Dung beetles which have spent their larval stage inside brood masses emerge rather weak and sexually immature; therefore they have to undergo a period of maturation feeding in order to be able to reproduce (Cambefort & Hanski, 1991). In *T. typhoeus* this period lasts about four weeks (Brussaard, 1983) at the end of which they actually put on some weight (pers. observ.).

From 31 December 2008 onwards I moved some of the beetles to a terrarium, also in the garage. The terrarium follows the specifications as given in Brussaard (1983); it consists of two vertical glass panes, 60x100 cm, 11 mm apart, filled with moist sandy soil from Hilly Fields; on the top there is a feeding table, 60x60 cm, covered with a mesh a corner of which is just visible in Figure 2.

Events leading to the fight

The protagonists of this fight were two unmarked males of identical size/weight, ~ 19 mm/0.7g, and a female with a reddish tan, ~ 18mm/0.6g; her tan proved a very useful marker.

The males had been in the terrarium since 12 January and had fought previously at least twice for about 50 minutes at a time at the ends of existing burrows; first for another female and then for this one.

Eventually, one pair settled down and by 26 January they had completed their first brood mass, Figure 2, at the bottom of burrow C. While they nested the other male had stayed on the opposite side of

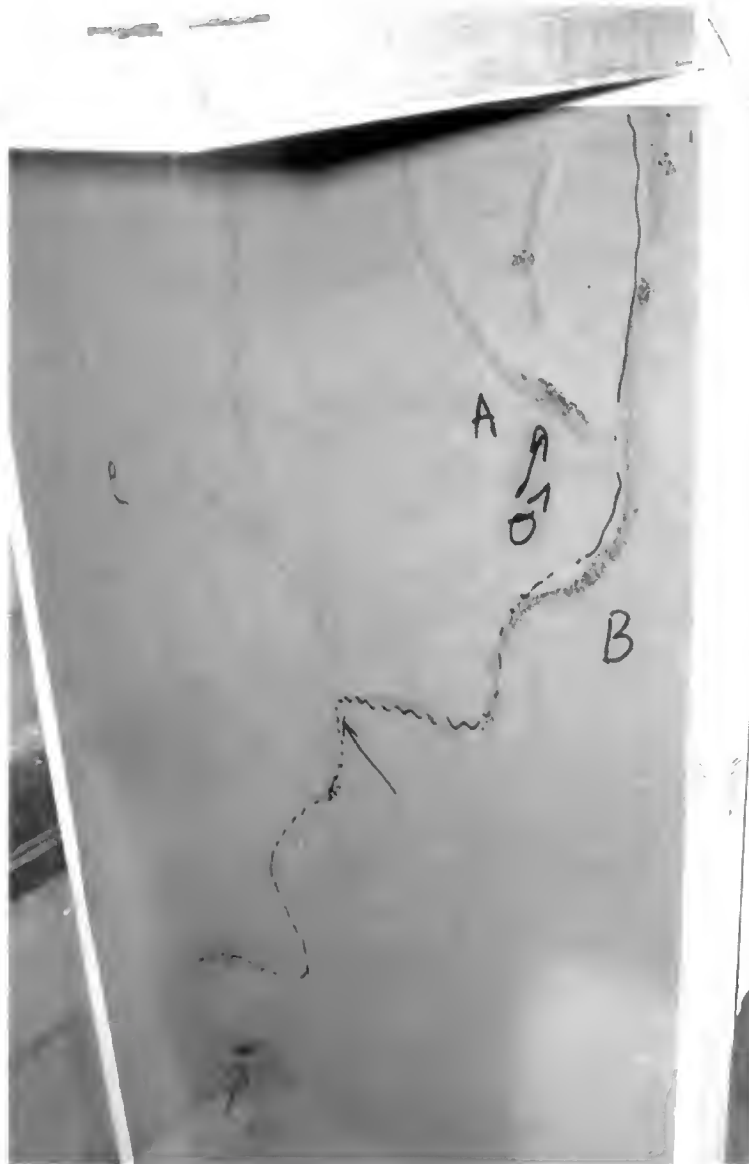


Figure 2. Photo of the terrarium taken shortly before the fight started. The main burrows are labelled C (the original principal burrow with a brood mass at the end of it, bottom arrow); B, joining C in the centre, middle arrow; and A, joining B higher up. The intruding male is in A, \nearrow arrow; the other beetles are in B and had been working along the dotted burrow. At the top a corner of the feeding table is just visible.

the terrarium mostly at the top of burrow B, Figure 2. After that a stalemate ensued.

Things perked up on the morning of 26 February; first, I saw that the female had resumed digging on the other side of the terrarium in different burrow, B, with a male, of course. Unfortunately, then I could not tell one male from another, so cannot say whether she had swapped partners. Their digging is normally team work: the female leads the way down ahead; she pushes up a plug of sand most of the



way up and then the male comes down, manoeuvres himself to the lower level of the plug and then pushes it out of the burrow.

Meanwhile, the other male had taken position in burrow A, Figure 2.

The following day, early in the morning, there was a male still there, very much on its guard; as soon as he felt any movements he slid downwards rapidly and stood still, facing up, with all his legs retracted; this is their normal burrow guarding behaviour.

Then things took another twist. The male in burrow A moved closer to the junction with burrow B, to the place shown in Figure 2 when the photo was taken at 07.49 hrs.

Two hours later I noticed that the connection between burrows A and B had changed. Curiously, now two rabbit pellets were there instead of the male, and the connection was plugged. More importantly, in burrow B there were now two males each pushing up a plug of soil.

The fight

Suddenly, the male at the top turned round and pushed the other one downwards, head-to-head, so that one of them, probably the intruder, was sent down a considerable distance along burrow B, Figure 3.

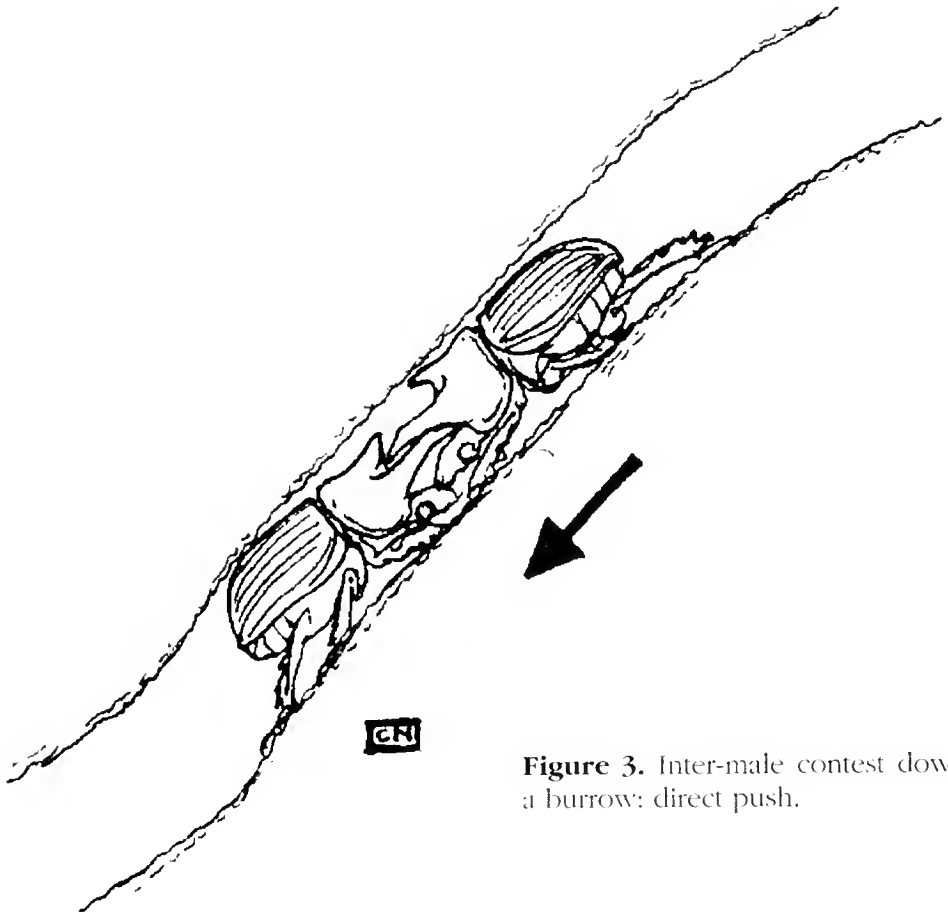


Figure 3. Inter-male contest down a burrow: direct push.



The males reached the junction with burrow C in six minutes and down they went along it until they stopped just above the brood mass, at 58 cm depth, and started fighting. Somehow they managed to drag a rabbit pellet all the way.

Once they reached the end of the burrow the beetles fought each other round in circles so that soon they were visible in an arena which had just enough room for them. As it was more or less clear of soil I could observe their tactics and take photos/videos by placing a light behind. They seemed oblivious of external noises and the light.

As they moved round and round the one behind bumped the other on the elytra with its horns, sometimes rhythmically which was quite funny to watch. Or, they got locked head-to-head but with their bodies rotated, see Figure 4.

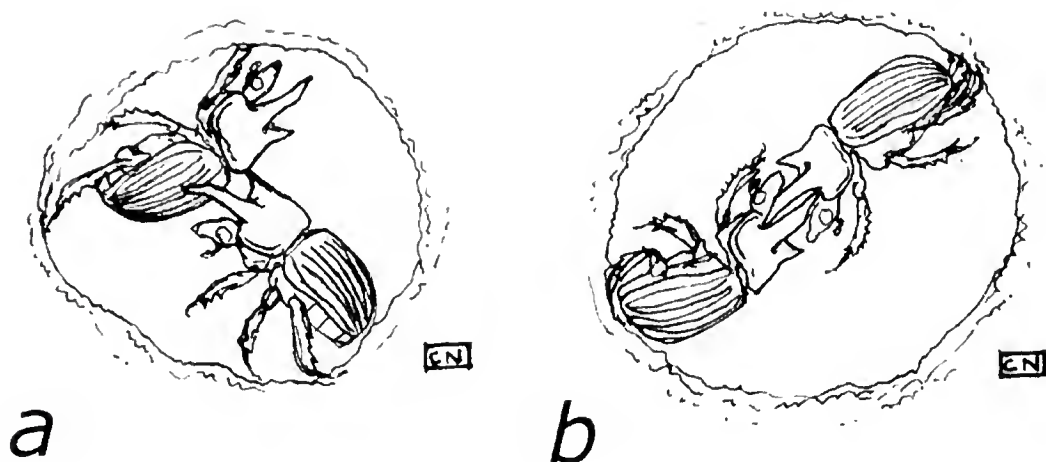


Figure 4. Inter-male fighting positions. *a*, direct push: bumps from below while moving clockwise. *b*, pressing contest: locked horns with one beetle rotated.

Sometimes one managed to drive the other back up the tunnel but he always came back down promptly and the fighting resumed. In a previous fight I actually saw the winning beetle chasing the loser for quite a distance and then turn back down only when the other had reached a safe distance.

As the fight went on they moved slower and slower, so that sometimes they 'froze' in a particular position. Also they took longer rests when they faced each other, Figure 5*a*. The arena kept growing and changing shape and towards the end it was quite disorganized.

Even though it was all extremely exciting to watch, a movie that I have made with short clips of their fight looks as if it is being played in slow-motion, quite boring at times, particularly towards the end (Fremlin, 2010).

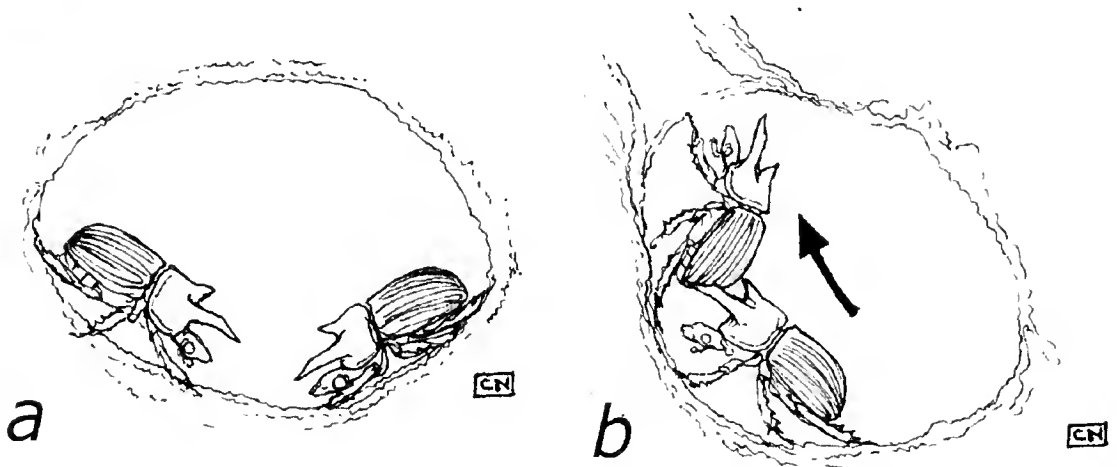


Figure 5. Inter-male contest, continuation. *a*, resting position: facing each other. *b*, exit position: direct push from behind.

By 22.40 hrs, just less than 13 hrs from the start of the fight, I saw one beetle being pushed up on to the left, Figure 5*b*, then he managed to dig his way straight up to the top, close to the edge.

Discussion and conclusion

The males fought for access to a female. They fought at the end of an existing burrow, thus at a rather deep level, and for nearly 13 hours, a remarkably long time, because they were an equal match.

Palmer (1978) reported fights of only up to 75 minutes just below the surface in rigid plaster-of-Paris tunnels and the bigger beetle always won.

He described three positions: 1) direct push, when the beetles face each other head-to-head; 2) defensive block, when the defendant blocked the tunnel sideways; 3) pressing contest, when the beetles face each other but one of them is rotated.

I was able to observe a direct push, head-to-head, when they came down all the way to the bottom of burrow C, possibly like in Figure 3. But then because of poor visibility I could not tell whether one of them was rotated or not, that is if it was either Palmer's 1) or 3). In the arena they sometimes fought in that position.

As for the defensive block, 2), there was a lot of pushing from behind; either on the rear end or in the middle of the body but the beetle being attacked did not block anything, just kept moving. In other words, in loose soil I did not observe a defensive block, an 'impregnable position'.



The beetles did lock horns with one rotated many times inside the arena, Palmer's pressing contest, 3), Figure 4*b*. This is also a characteristic underground fighting position in other dung beetles (Madewell & Moczek, 2006; Watson & Simmons, 2010).

When fighting their bodies fit perfectly; take the unequal length of their horns and how they interlock in the pressing contest and also with the rump of the beetle being pushed out, Figures 4*b* & 5*b*. Fabre (1910) remarked that their three points described a concave arc in which one may fit the roundness of a dung pellet.

It is not known how common fights of this kind are among beetles in the wild and what their tactics are. In this fight, the invading male did not attack directly the occupied burrow from above the ground, like they did in burrows cast in plaster-of-Paris (Palmer, 1978). Instead he moved himself to a strategic place close to the active burrow B-C, probably by above the ground movements, and then attacked sideways from inside that burrow. Their burrows have nicely tampered smooth walls, no doubt strengthened as they go up and down; they are their underground highways.

How did he know where the others were?

I have already remarked that he was very sensitive to external vibrations when guarding the entrance to his burrow. It seems likely that he could have easily detected the vibrations generated by the active pair via his feet and body hair and then attack them by stealth.

They can be rather noisy, there are reports that they stridulate when courting (Main, 1916-7; Brussaard, 1983) and fighting (Palmer, 1978).

Another possibility would be by scent detection, but this seems rather unlikely because odours do not travel so well underground.

During this fight the beetles did not feed and I am not sure if they fed afterwards. And this would be worth studying because in spite of both looking rather weak at the end of the fight, and probably having lost weight (Knell & Simmons, 2010), they were able to pair up successfully afterwards. One pair completed a brood mass in the terrarium and the other collected a lot of dung pellets for his mate in a deep bin and the results of their labours are not known at the time of writing because they are due to emerge in the autumn of 2010.

I hope in the future to try to rear two couples in the terrarium, rather than a 'ménage à trois' which didn't work out. Of course, it will be much better if I can devise a marking system that will allow me to identify them while the action is going on.



There is indeed a lot more to be done with these engaging dung beetles.

Acknowledgments

I'm extremely grateful, first, to Frank Köhler for his help with key references, then to my husband, David Fremlin, for making the terrarium, aka as 'the palace', and to Lijbert Brussaard for his generous guidance. Also to Darren Mann and Nicola Watson for their helpful remarks on the manuscript.

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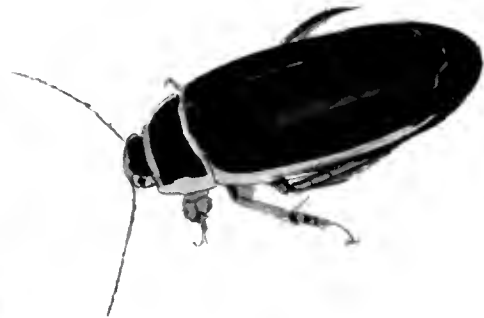
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Any member joining on or after 1st October will be deemed to have joined for the following year unless he or she specifically requests membership for the current year. If such a request is made, the publications already published that year will be sent with the enrolment confirmation letter and the remaining ones will be sent when they are published. A further membership subscription will be necessary for the following year.

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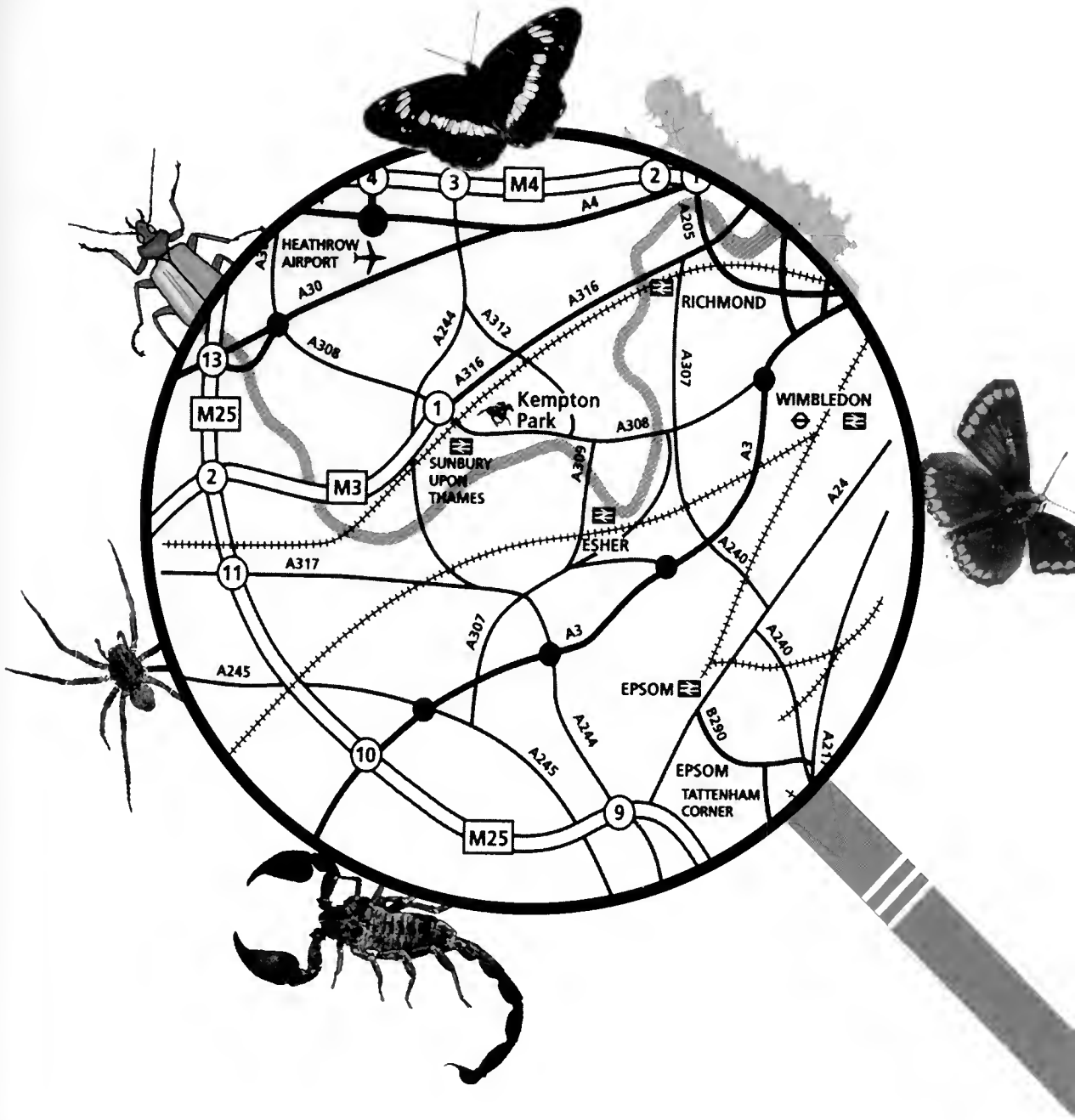
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The
Bulletin
of the Amateur Entomologists' Society

Volume 69 • Number 491

August 2010

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The Bulletin



75th Anniversary
1935-2010

of the Amateur Entomologists' Society

Volume 69 • Number 492

October 2010

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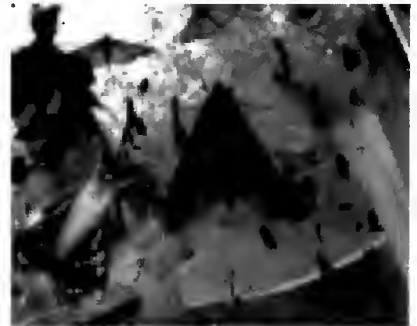
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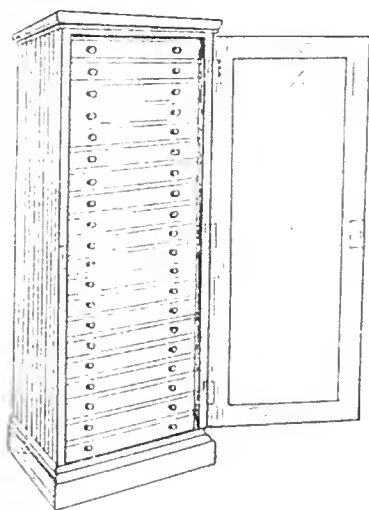
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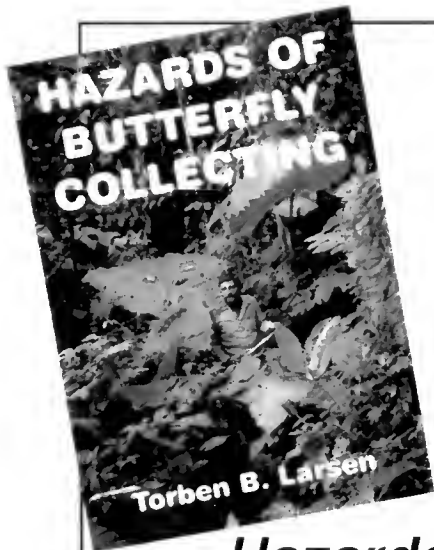
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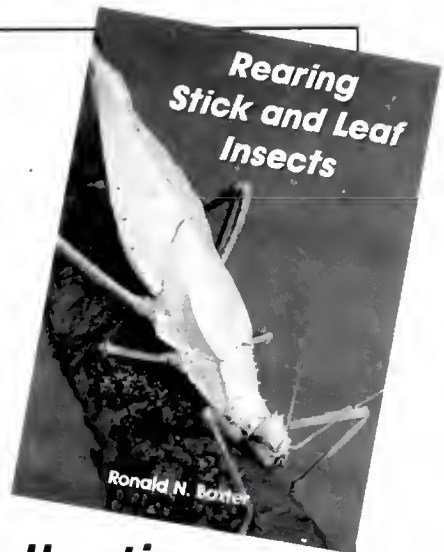


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Bulletin Cover



This month's cover picture shows the Red-headed Cardinal Beetle, *Pyrochroa serraticornis*. It is to be found in late spring and early summer by hedges and light woodland. The larvae feed on other insects beneath the bark of trees.

The photo was taken by Dr David Skingsley. Most of his work can be found on his website The Bug Botherer's natural history picture archive from near Alsager in South Cheshire: <http://www.bugbotherer.org.uk>

We are most grateful to him for allowing us to use his pictures.

The Bulletin

of the Amateur Entomologists' Society

Volume 69 • Number 492

October 2010

Editorial

A kind of inertia can set in during the autumn months. Reducing yields on foraging expeditions and in the moth trap can be dispiriting; the weather has broken, and sifting through countless rustics and Setaceous Hebrew Characters in search of something special can lose its charm. But as nectar-giving flowers become scarcer it's a good time to make up the sugaring mixture and set out with lamp and ropes or paintbrush. (Check, however, that you have permission of the landowner before you start daubing trees – and don't smother precious lichens with treacle!)

Our regular contributor Jan Koryszko elsewhere in this bulletin describes his sugar-dispensers made from old plastic fizzy drink bottles. Various entomologists have their formulae for bait solutions – I have heard recommendations for methylated spirits, amyl acetate and mashed bananas. P.B.M. Allan recommended only the finest bay rum, although whether for his captives or himself is uncertain.

Do those stalwarts who hunt the Other Orders also have bait techniques that they can recommend? It's a great area for the amateur to experiment – why not share your findings through the Bulletin? Contributions, please, to the usual address.

Martin Hough





SOCIETY MATTERS

'Big Society'

We had a gratifying response to our appeal for help in the last issue of the *Bulletin*. We still have a couple of Council vacancies, and we are always looking for people to promote the society at events. We are also keen to feature new writing and ideas deriving from the expertise and experiences of our members in the *Bug Club Magazine*. Please do get involved if you can!

Anniversary Stickers

The anniversary stickers were inadvertently omitted from the last *Bulletin* mailing, for which we apologise. You should find your sticker enclosed with this issue.

Membership Renewals

Also accompanying this mailing should be your membership renewal form. Please note that you only need to complete and send in this form if you want to pay by cheque or postal order, or if you want to tell us about any changes to your membership.

If you want to renew your membership by means of a new or existing standing order, simply quote your membership number and surname as the reference and we will update your membership record accordingly, without your needing to send us the form. You can however use the standing order section of the form to send to your bank.

Please note that there are discounts if you subscribe to more than one membership journal.

Data Privacy Statement

All personal information supplied to the Amateur Entomologists' Society is treated in accordance with UK legal requirements for data protection. The Society will not divulge personal information to any third party, except under legal obligation, or with the express permission of the owner of the information.

Currently, such information is used only for the purposes of administering the Society and the subscriptions that it receives. It could be used to publish subscriber / membership lists, subject to the express permission of each subscriber or member concerned, but there are no plans to publish any such list in the foreseeable future.



Membership Benefits

Now would seem a good time to review current member benefits.

Firstly, the Society is a charity run by volunteers, and depends mainly on member subscriptions and donations for its continued existence. It is therefore the continued support of our members and volunteers that enable us to further our aims, which are to promote the study of insects and other invertebrates among amateurs and the young, and to help ensure that the amateur viewpoint is represented in invertebrate conservation matters.

Periodicals

Subscribing members have the choice of the following three AES periodicals:

- The *AES Bulletin*
- The *Entomologist's Record & Journal of Variation*
- The *Bug Club Magazine*

In addition, *Invertebrate Conservation News* and the *AES Wants and Exchange List* are sent to all members over the age of 11.

We are working on an exciting new service to replace the *Wants and Exchange List* – more details will be released soon.

E-services

Current electronic networking services include an AES Members' Area on the society's website, and an *Entomologist's Record* members' area. Both of these include access to back issues of the respective periodicals.

There is also a separate, members-only AES Discussion Forum at <http://tech.groups.yahoo.com/group/aes/>.

An identification service/advisory panel is available for the exclusive use of members – please email your tough ID questions to us, or post them on the Members' Forum.

There are also two moderated forums which are open to all: the Bug Club Forum <http://tech.groups.yahoo.com/group/bugclub/> and the Lepidoptera Breeding Forum http://tech.groups.yahoo.com/group/Breeding_UK-Leps/. You can also follow us on Twitter (@amentsoc). Members are also reminded of the Open University's iSpot website, where AES experts among others help to identify insects photographed by the public. All of these open sites are moderated and provide opportunities for members to interact more widely in an entomological context.



Networking and regular events

These events include the Oxford University Young Entomologists' Day in February; the Members' Day and AGM each April; the Oxford University Museum of Natural History annual visit each September; and the AES Exhibition & Trade Fair each October.

Other events and field trips are also held each year, of course, and these are publicised in our periodicals throughout the year.

Recognition

Exhibition prizes are awarded (the Anson Award for the best junior member exhibits at the annual exhibition; the Bradford Award for the best exhibit by an adult member).

Literary prizes are also available (the Hammond Award for the best article in the AES *Bulletin*; the Gardiner Award for the best *Bug Club Magazine* articles).

The Cribb award for Invertebrate Conservation is also offered, and this is also open to non-members.

The Michael Majerus Grant supports projects that encourage the next generation of entomologists. This is also open to non-members.

Special arrangements for members

Members can buy AES publications at a substantial discount (normally 30%).

The same level of discount is available on Royal Entomological Society (RES) publications.

AES members have full access to the world famous RES library, and can attend RES events at the same rates as RES members.

AES members wishing to join the Society of Biology can benefit from a 25% discount on the cost of their first year of membership.

Members buying books from British Wildlife Publishing or subscribing to their journal (*British Wildlife*) receive a concessionary rate.

AES Members have access to events of our affiliates on the same basis as their own members. Current affiliates are:

Quekett Microscopical Society

Conchological Society of Great Britain & Ireland

The entomology section of the Devonshire Association

We hope that you will explore these member benefits, which I think you will agree make the AES the best value entomological society in



the UK. Our aim is to be a gateway into entomology that will support your entomological endeavours whatever your age or level of involvement.

AES EVENTS IN THE NEW YEAR

26th February 2011 (February half-term):

Young Entomologists' Day at Oxford University

Oxford University Museum of Natural History, Parks Road, Oxford OX1 3PW. 11:00 – 4:00.

This will be the second Young Entomologists' Day at Oxford, and is planned because of the tremendous success of the first YED last year.

The day will be organised by AES member Joss McLeod and will be kick-started by a talk by a well-known entomologist.

Children between the ages of 4 and 18 are invited to bring exhibits they are willing to talk about to fellow members – or they can just give a brief talk, with or without slides. Last year, many children gave PowerPoint presentations – including a five year old!

The kids will be able to use the Museum's lecture theatre for their talks, and prizes will be awarded for the best presentations. Anyone wanting to give a talk should contact the AES Secretary in good time (secretary@amentsoc.org) to get a copy of the judging criteria for the talks.

There will also be tours of the Hope Collections during the day, and information about the AES and other organisations will be on display. There is no charge for admission to members and their guests but please complete a booking form (available from the AES Secretary or downloadable online).

Saturday 30th April 2011: AES Members' Day & AGM

Our Members' Day next year will take place at Butterfly World in St Albans, Hertfordshire. This amazing new venue is right next door to the Royal Entomological Society's new headquarters.

Further details will be provided to members closer to the time.



Purple hairstreak watering hole

by Tim Gardiner (11826)

2 Beech Road, Rivenhall, Witham, Essex, CM8 3PP.

I noticed odd Purple Hairstreak (*Neozephyrus quercus*) behaviour at Norton Heath in central Essex on 19th July 2010 (10am). Large numbers of butterflies were descending from the mature oak (*Quercus robur*) canopy and landing in the middle of a large pond in the centre of the heath (Ordnance Survey (OS) grid reference TL 601042). The pond was covered with algae which formed a green film on the surface. It appeared that the hairstreaks were imbibing fluid from the pond; several butterflies spent a considerable time sitting on the surface of the water. One hairstreak was observed to 'drown' as it flapped its wings around in the water, becoming increasingly more submerged with every movement. I had never seen this behaviour before; hairstreaks were not seen around the central pond in 2009, when they were restricted to locations high up in the canopy along the southern edge of Norton Heath. There are many ponds on the heath that were formed in the early 1900s due to extensive digging for gravel, which was used to surface the Ongar to Chelmsford road (which used to run along the southern edge of the heath).



Flooded gravel pits at Norton Heath used by Purple Hairstreaks © Tim Gardiner



Purple Hairstreaks are most commonly observed in the tree canopy, descending very rarely to nectar on brambles (*Rubus fruticosus*) (Asher et al. 2001). In the canopy they derive most of their fluid and nourishment from honeydew (substance left behind by aphids feeding on oak leaves), descending to ground level to take fluid from water bodies in droughts, such as in 1995-6 (Asher et al. 2001). The observations of drinking behaviour at Norton Heath follow three very dry months in central Essex when rainfall has been far below average. The Writtle College Weather Station collects daily rainfall data, and is less than 8 km from Norton Heath (OS grid reference for the station is TL 678066). The rainfall totals for April (12.1 mm, 30-year average 42.3 mm), May (29.8 mm, 30-year average 45.4 mm) and June (26.2 mm, 30-year average 52.8 mm) highlight the prolonged dry spell in spring and early summer. Overall, the total rainfall for April-June was 68.1 mm, which is only 48% of the 30-year average (1971-2000) of 140.5 mm. Therefore, Purple Hairstreaks may have responded to the dry conditions by taking fluid from water bodies, in addition to honeydew in the tree canopy. Luckily, the central pond at Norton Heath is deep enough to have water in it in the driest summers, whereas, many of the other gravel pits on the common are ephemeral and tend to dry out completely by early July. However, Purple Hairstreaks have been observed to land in dried out ponds in Essex, perhaps to imbibe whatever water they can get from the damp silt. The central pond has the added advantage of being relatively open with fringing bramble as a nectar source, whereas, many of the ephemeral ponds are shaded due to woodland encroachment on the heath since the 1950s, although this shade may keep the silt moist enough to be used by Purple Hairstreaks in dry weather. It seems that the network of ephemeral and permanently flooded gravel pits may be a useful source of moisture for the Purple Hairstreak in prolonged dry weather, such as experienced in 2010.

Reference

Asher J., Warren M., Fox R., Harding P., Jeffcoate G. & Jeffcoate S. (2001) *The Millennium Atlas of Butterflies in Britain and Ireland*. Oxford University Press, Oxford.





Butterflies in a Surrey Woodland

by Clive Martin

Sheri, Mill Lane, Felbridge, East Grinstead, West Sussex, RH19 2PE.

In 2008 I had the good fortune to purchase one acre of woodland in Newchapel, Surrey: the Grid Reference is TQ 342464. It is a hazel coppice, neglected for around 30 years. The natural ground flora survives in places – Bluebells, Wood Sorrel, Bugle, Dog Violets etc. It is surrounded by fields, some of which are cut for hay, but some are neglected and left – in these a good range of wild flowers grow. At the edge of the wood is a large area of Bramble, with some Gorse and Broom.

Between May 12th and 5th June this year I found a few Green Hairstreak (*Callophrys rubi* L.) butterflies feeding on Lady's Smock flowers and sunning themselves on the Brambles (see photo) Sometimes two would spiral high into the air together. Other butterflies that I have seen in the wood are Peacock, (*Inachis io* L.) Brimstone (*Gonepteryx rhamni* L.), Speckled Wood (*Pararge aegeria* L.), Large White (*Pteris brassicae* L.), Ringlet (*Aphantopus hyperantus* L.), Gatekeeper



(*Pyronia tithonus* L.), Purple Hairstreak (*Quercusia quercus* L.), White Admiral (*Ladoga camilla* L.), Silver Washed Fritillary (*Argynnis paphia* L.), Peacock (*Inachis io* L.) and Small Tortoiseshell (*Aglais urticae* L.).

In the fields I have seen Dingy Skippers (*Erynnis tages* L.), Small Copper (*Lycaena phloea* L.), Common Blue (*Polyommatus icarus* Rottemburg), Meadow Brown (*Maniola jurtina* L.), Orange-Tip (*Antocharis cardamines* L.) and Large Skipper (*Ochlodes venata* Bremer and Grey).



Rearing *Automeris zephyra* (Lepidoptera: Saturniidae)

by Wesley Caswell (3133)

46 Leugars Avenue, Kingsbury, London NW9 8AS.

About 30 years ago I used to print headed notepaper, and on my own personal paper I had a gold *Automeris zephyra* from a picture in *The Moth Book*, by W.J. Holland.

In the summer of 2009 I managed to obtain some newly-hatched larvae of this species which had not yet begun to feed. They started feeding on cherry leaves, and by the third instar I had only lost one or two.

At first they are a rather dull brown, and very small, but by the third instar they started to turn more yellowish, and were covered in short yellow spines. The underside was black. They had a black line down the centre of their back. The larvae reached about three inches in length.

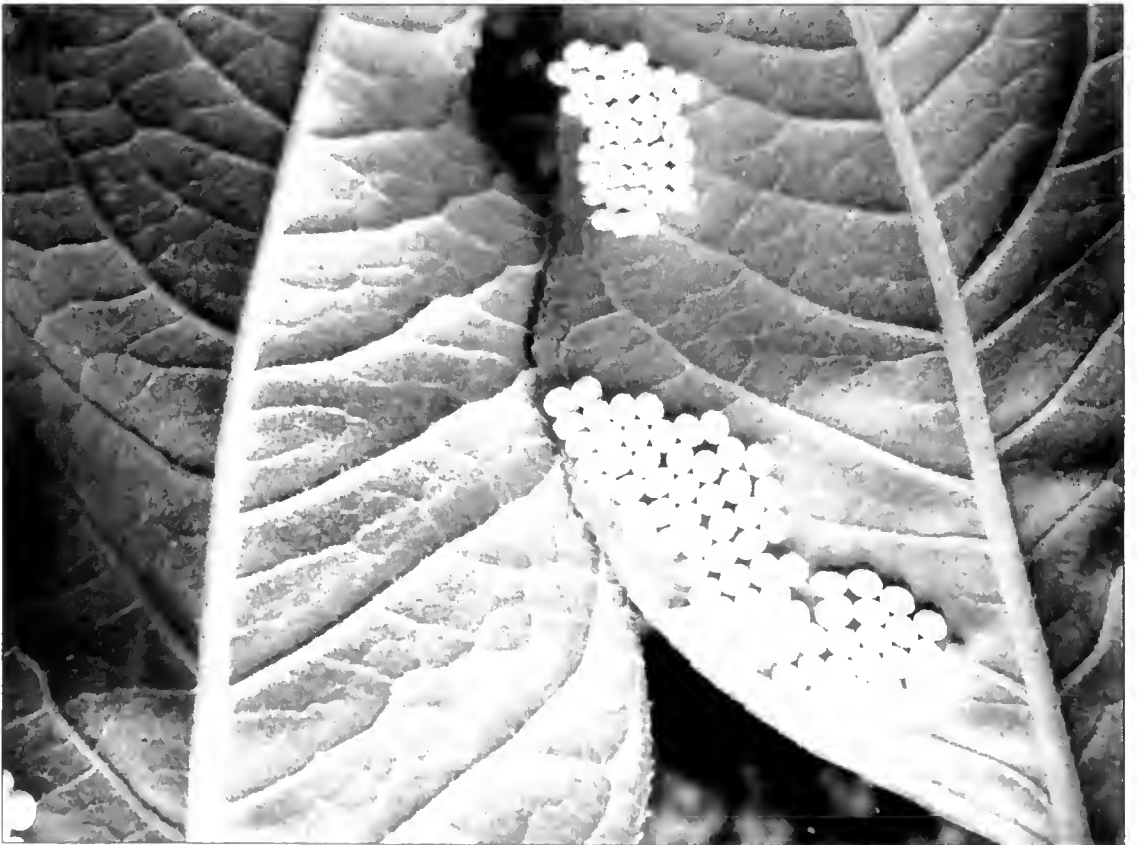
The resulting cocoons, similar to most *Automeris* species, were kept overwinter in an unheated shed, where temperatures dropped below freezing.

The moths emerged in late June, very close together, and although no pairings were seen, large batches of ova were laid within two days. I put some branches of buddleia in a large net cage, and all the ova were laid in large batches on the undersides of the leaves. The ova were white, and very large for *Automeris*. The micropyle (greenish) did not turn black, as most *Automeris* ova do, but stayed greenish.

These started hatching about 7th July.

The following are photos of the female moth and ova, and nearly full grown larvae.







Chamomile Shark moth (*Cucullia chamomillae*) in Glasgow

by *Frank McCann (6291)*

57 Lockbeart Street, Germiston, Glasgow G21 2AP.

The Chamomile Shark is uncommon in Scotland and the northerly parts of England but occurs in Glasgow, as I have reported previously in the AES Bulletin (1999 Vol 427, p 236; 2000 Vol 429, p 70).

In the summer of 2008 I found caterpillars of this moth on Chamomile plants at Provanmill, near the Royston area of Glasgow, where there are grassy fields close to a railway line. The Chamomile was growing at the southern end of these fields, with caterpillars feeding on the flowerheads. I visited the same area last year and found only a small population of larvae on these plants.

Whilst the moth still has a foothold in this part of Glasgow, most of the Chamomile has disappeared from the nearby Glenconner area, where I first discovered the species. The grassy areas are now being cut by motorised cutting machines, but I hope that the species continues to flourish in this north eastern area of Glasgow.



The Attraction of Male *Pieris brassicae* Linn. (Lep.:Pieridae) to Decoy of Female

by *Jamie C. Weir*

32 Paul Drive, Airth, Falkirk, Stirlingshire, Scotland, FK2 8LA

Email: ju@jweir.orangehome.co.uk

Recently, I purchased some of the Collins New Naturalist Series of books. These included No. 30 on moths by E.B. Ford (1955) and No. 1 on butterflies also by E.B. Ford (1953). I also purchased the volume by A.D. Imms (1971) on insects. Upon reading this last mentioned book I found the chapter "*On Wings and Flight*" most interesting. The chapter briefly mentions that male fritillary butterflies have been attracted by using accurately painted decoys of the females. After reading this I was intrigued and decided to try it out for myself on some of the butterflies which frequent my garden.

In my garden the most common butterflies are the Pieridae. These include *Anthocharis cardamines* (The Orange Tip) in April and May,



Pieris brassicae (Large White) and the decoy.

Pieris napi (Green-veined White) in the early summer and, later, both *Pieris rapae* (Small White) and *Pieris brassicae* (Large White). Since the time of year was August I decided I should try out my experiment on *P. brassicae*. I prepared, on the evening of the 11th of August, a paper decoy of a female *P. brassicae* using Ford (1953) and Chinery (2005). It was made as accurately as possible with the undersides of the wing coloured yellow. On the afternoon of the 12th of August I placed the decoy on some ivy, in a sunny spot in my garden.

I found a spot from where to observe my decoy and waited fifteen minutes. I observed four male *P. brassicae* flutter right up to the decoy, close enough to touch it, and then apparently realise that it was not real and fly away. Later in the day, at about 3pm I carried out the same experiment and this time noticed three males flutter up to it. Again, on the afternoon of the 15th, another three males were attracted to it. It is interesting to note that no butterflies were flying when it became dull and overcast.

I feel that these observations are fairly significant because they demonstrate that male *P. brassicae* locate females by visual recognition of the pattern and colouration on their wings, rather than as in some moths where pheromones are used to attract a mate. I believe that the next logical step would be to carry out further experiments of this nature on other species of butterfly as I am sure that the results would be most interesting.

References

- Chinery, M., 2005. *Complete British Insects*. London: Collins
 Ford, E.B., 1953. *Butterflies*. New Naturalist No.1. London: Collins
 Ford, E.B., 1955. *Moths*. New Naturalist No. 30. London: Collins
 Imms, A.D., 1971. *Insect Natural History*. New Naturalist No.8. edn 3. London: Collins



Dinton Pastures Country Park: Insects recorded during the AES and Bug Club open day on 26th June 2010

compiled by Peter Hodge (5335) and Norman Hall,
with additional notes from Dafydd Lewis

On Saturday 26th June, during National Insect Week, we enjoyed a joint AES and Bug Club event with the British Entomological & Natural History Society (BENHS) at their Headquarters at Dinton Pastures Country Park, near Reading in Berkshire.

Moths

The day began with an examination of the moths caught in two moth traps run by Norman Hall and Ian Sims the night before, and Norman also brought a few moths caught elsewhere, at Padworth Common, to show us for extra interest. Before opening the traps we examined the moths selected by Norman as being of special interest (those with asterisks next to them were the ones caught at Padworth Common):

(1) To illustrate size range

*Privet Hawk (*Sphinx ligustri*) (very large)
An *Argyresthia* species (A micro, very small)

(2) Other Hawk-moths

Elephant Hawk (*Deilephila elpenor*) (children amused by 'Pink elephant')
Poplar Hawk (*Laotloe populi*) (showing warning reddish brown patches on upper hindwings when 'worried')
Lime Hawk (*Mimas tiliae*)
Pine Hawk (*Hyloicus pinastri*) (relatively small for a hawk-moth).

(3) Natural Selection. Male v. female differences.

Peppered moth (*Biston betularia*) (male, female form *typica* to show differences in body and antennae, form *insularia*)
Ghost moth (primitive moths, no ears. Not extinct because they fly after the birds, before the bats?)

(4) Camouflaged by pretending to be something else.

Pale Prominent (*Pterostoma palpina*) (Dead wood)
Iron Prominent (*Notodonta dromedarius*) ('Prominences' on dorsal edge of forewings stick up and break up the silhouette)



Buff-tip (*Phalera bucephala*) (Cut birch twig)
 The Flame (*Axylia putris*) (Tubular resting position almost twig-like) (cigarette like)

(5) Camouflaged by being dull, blending with surroundings

The Uncertain (*Hoplodrina alsines*)
 Heart & Club (*Agrotis clavis*)
 *Grey Arches (*Polia nebulosa*)
 The Blackneck (*Lygephila pastinum*)

(6) Moths with beautiful or intricate markings

Buff Arches (*Habrosyne pyritoides*)
 Peach Blossom (*Thyatira batis*)
 *Scallop Shell (*Rhenaptera undulata*)

(7) To get participants to suggest their own names:

Miller Moth (*Acronicta leporina*)
 Swallow-tailed Moth (*Onrapteryx sambucaria*)
 Treble Lines (*Charanyca trigrammica*)

(8) Moths with green colours (which often fade with time)

Large Emerald (*Geometra papilionaria*)
 *Green Arches (*Anaplectoides prasina*)
 The Coronet (*Craniophora ligustri*)

Then, we went through what remained of Norman's previous night's catch in his two Robinson MV traps, to give people an idea as to what a typical catch would be like, i.e. more micros than macros; more drab moths than spectacular ones; some pristine, some very worn. Some moths also came from Ian Sims's trap.

Other Insects

We were then treated to a tour of the BENHS building at Dinton Pastures, where those of us with a special interest in particular insect groups could examine specimens from those groups in the extensive BENHS collections. We also had a look at the society's entomological library. Ian and Norman then had to leave, as they had been up all night with the moth traps! The rest of us made our way towards the wilds of the country park, to see what we could find – after a tasty lunch at the nearby Dragonfly Cafe.

Peter Hodge has provided the following notes on some of the most notable insects seen:



Coleoptera (beetles)

Bruchidius varius (Chrysomelidae). First discovered as British in Sussex in 1993 (Hodge, 1997) this pea-weevil has spread rapidly and is now extremely common in the south-eastern half of Britain. It is associated with red clover and breeds in the flower heads.

Harmonia axyridis (Harlequin Ladybird) (Coccinellidae). Few insect survey lists lack this invasive species, which has colonised almost every corner of England and Wales since its discovery in Essex in 2004.

Polydrusus formosus (Curculionidae). This Notable A weevil was formerly regarded as very local and scarce but it has recently expanded its range dramatically. Currently it is often present in large numbers, especially on alien shrubs such as those planted around new retail parks.

Oedostethus quadripustulatus (Elateridae). A tiny click beetle associated with wet grassland habitats. Although very local the distribution map by Mendel (1996) shows a number of records for this part of the Thames basin, although few are recent. The wireworm larva develops in the soil where it feeds on roots.

Meligethes symphyti (Heer) (Nitidulidae). This pollen beetle is associated with comfrey *Symphytum officinale* and is a recent colonist in Britain, recorded from only Windsor Great Park and the Maidenhead district in Berkshire. The larvae develop in the flowers.

Pseudocistela ceramboides (Tenebrionidae). The larvae of this uncommon (Notable A) beetle are associated with ancient woodland where they develop in dry powdery wood in tree cavities of veteran oaks.

Hemiptera (bugs)

Deraeocoris flavilinea (Miridae). A recent arrival that has spread rapidly since its discovery in the mid-1990s and it is now common in many parts of England. It prefers sycamore trees that are infested with aphids but can also utilize several other species of trees and shrubs.

Species lists

1. Moth Trap 1, SU78407175

COLEOPTERA (Beetles)

HETEROCERIDAE

Heterocerus fenestratus



HYDROPHILIDAE (Water beetles)

Hydrobius fuscipes

TENEBRIONIDAE (Darkling beetles)

*Pseudocistela ceramboides**Tenebrio molitor***2. Moth Trap 2, SU78427174****COLEOPTERA** (Beetles)

COCCINELLIDAE (Ladybirds)

Halyzia sedecimguttata (Orange ladybird)

SCARABAEIDAE (Dung beetles & Chafers)

*Amphimallon solstitialis***3. Moth Trap 1 + 2, SU784717****LEPIDOPTERA** (Moths)

HEPIALIDAE

Hepialus humuli Ghost Moth 1

COSSIDAE

Zenzero pyrina Leopard Moth 1

YPONOMEUTIDAE

Argyresthia pygmaeella 1*Yponomena evonymella* Bird-cherry Ermine 1*Scythropia crataegella* Hawthorn Moth 1

COLEOPHORIDAE

Coleophora trifolii group 1

GELECHIIDAE

Teleiodes luculella 1*Sophronia semicostella* 1*Anacamptis populella* 1

BLASTOBASIDAE

Blastobasis lacticolella 1

COCHYLIDAE

Hysterophora maculosana 1*Agapeta hamana* 2

TORTRICIDAE

Pandemis cerasana Barred Fruit-tree Tortrix 4*Pandemis heparana* Dark Fruit-tree Tortrix 1



<i>Archips podana</i> Large Fruit-tree Tortrix	2
<i>Archips xylosteana</i> Variegated Golden Tortrix	16
<i>Aphelia paleana</i> Timothy Tortrix	1
<i>Clepsis spectrana</i> Cyclamen Tortrix	4
<i>Clepsis consimilana</i>	2
<i>Lozotaeniodes formosanus</i>	1
<i>Lozotaenia forsterana</i>	1
<i>Pseudargyrotoza conwagana</i>	1
<i>Aleimma loeflingiana</i>	16
<i>Tortrix viridana</i> Green Oak Tortrix	32
<i>Celypba lacunana</i>	4
<i>Hedya pruniana</i> Plum Tortrix	4
<i>Hedya nubiferana</i> Marbled Orchard Tortrix	1
<i>Hedya salicella</i>	8
<i>Orthotaenia undulana</i>	4
<i>Ancylis achatana</i>	2
<i>Epiblema uddmanniana</i> Bramble Shoot Moth	1
<i>Epiblema rosaecolana</i> or <i>trimaculana</i>	1
<i>Eucosma cana</i>	4
PYRALIDAE	
<i>Chrysoteuchia culmella</i>	4
<i>Crambus perlella</i>	1
<i>Acentria ephemerella</i> Water Veneer	64
<i>Eudonia pallida</i>	4
<i>Dipleurina lacustrata</i>	4
<i>Ostrinia nubilalis</i> European Corn-borer	1
<i>Eurrhyncha hortulata</i> Small Magpie	2
<i>Phycita roborella</i>	2
<i>Euzophera pinguis</i>	1
<i>Homoeosoma sinuella</i>	1
PTEROPHORIDAE	
<i>Pterophorus pentadactyla</i> White Plume Moth	1
<i>Thyatira batis</i> Peach Blossom	4
<i>Habrosyne pyritoides</i> Buff Arches	3
<i>Tethea ocularis octogesimea</i> Figure of Eighty	2
GEOMETRIDAE	
<i>Comibaena bajularia</i> Blotched Emerald	1
<i>Hemithea aestivaria</i> Common Emerald	1
<i>Timandra comae</i> Blood-vein	1



<i>Idaea biselata</i> Small Fan-footed Wave	1
<i>Idaea dimidiata</i> Single-dotted Wave	1
<i>Idaea trigeminata</i> Treble Brown Spot	1
<i>Idaea aversata</i> Riband Wave	2
<i>Xanthorhoe designata</i> Flame Carpet	1
<i>Xanthorhoe quadrifasiata</i> Large Twin-spot Carpet	1
<i>Xanthorhoe montanata</i> Silver-ground Carpet	1
<i>Xanthorhoe fluctuata fluctuata</i> Garden Carpet	1
<i>Epirrhoe alternata</i> Common Carpet	2
<i>Eulithis prunata</i> The Phoenix	
<i>Eulithis pyraliata</i> Barred Straw	2
<i>Chloroclysta truncata</i> Common Marbled Carpet	4
<i>Plemyria rubiginata rubiginata</i> Blue-bordered Carpet	4
<i>Thera cupressata</i> Cypress Carpet	1
<i>Hydriomena furcata</i> July Highflyer	
<i>Philereme vetulata</i> Brown Scallop	8
<i>Chloroclystis v-ata</i> The V-Pug	4
<i>Pasiphila rectangulata</i> Green Pug	7
<i>Pterapherapteryx sexalata</i> Small Seraphim	4
<i>Lomaspilis marginata</i> Clouded Border	1
<i>Plagodis dolabraria</i> Scorched Wing	2
<i>Opisthograptis luteolata</i> Brimstone Moth.....	1
<i>Ourapteryx sambucaria</i> Swallow-tailed Moth.....	1
<i>Biston betularia</i> Peppered Moth	1
<i>Peribatodes rhomboidaria</i> Willow Beauty.....	2
<i>Alcis repandata</i> Mottled Beauty	3
<i>Ectropis bistortata</i> The Engrailed	1
<i>Aethalura punctulata</i> Grey Birch	
<i>Cabera pusaria</i> Common White Wave	1
<i>Cabera exanthemata</i> Common Wave	1
<i>Lomographa temerata</i> Clouded Silver	2
<i>Campaea margaritata</i> Light Emerald	4
SPHINGIDAE	
<i>Hyloicus pinastri</i> Pine Hawk-moth	1
<i>Mimas tiliae</i> Lime Hawk-moth	1
<i>Deilephila elpenor</i> Elephant Hawk-moth.....	2
NOTODONTIDAE	
<i>Phalera bucephala</i> Buff-tip	2
<i>Notodonta ziczac</i> Pebble Prominent	
<i>Pterostoma palpina</i> Pale Prominent.....	2



ARCTIIDAE

<i>Thumatha senex</i> Round-winged Muslin	1
<i>Eilema sororcula</i> Orange Footman	1
<i>Eilema complana</i> Scarce Footman	
<i>Eilema lurideola</i> Common Footman	
<i>Spilosoma luteum</i> Buff Ermine	1
<i>Nola cucullatella</i> Short-cloaked Moth	

NOCTUIDAE

<i>Agrotis clavis</i> Heart & Club	4
<i>Agrotis exclamationis</i> Heart & Dart	24
<i>Axylia putris</i> The Flame	4
<i>Ochropleura plecta</i> Flame Shoulder	10
<i>Noctua pronuba</i> Large Yellow Underwing	2
<i>Xestia c-nigrum</i> Setaceous Hebrew Character	2
<i>Xestia triangulum</i> Double Square Spot.....	3
<i>Lacanobia oleracea</i> Bright-line Brown-eye	1
<i>Mythimna ferrago</i> The Clay	1
<i>Mythimna straminea</i> Southern Wainscot	
<i>Mythimna impura</i> Smoky Wainscot	8
<i>Mythimna pallens</i> Common Wainscot	2
<i>Brachylochia viminalis</i> Minor Shoulder-knot	7
<i>Acronicta megacephala</i> Poplar Grey	1
<i>Acronicta leporina</i> The Miller	1
<i>Craniophora ligustri</i> The Coronet	1
<i>Euplexia lucipara</i> Small Angle-shades	1
<i>Phlogophora meticulosa</i> Angle-shades	1
<i>Parastichtis ypsilon</i> Dingy Shears	4
<i>Cosmia trapezina</i> The Dun-bar	1
<i>Apamea monoglypha</i> Dark Arches	4
<i>Apamea lithoxylaea</i> Light Arches	1
<i>Apamea sublustris</i> Reddish Light Arches	1
<i>Apamea epomidion</i> Clouded Brindle	1
<i>Apamea sordens</i> Rustic Shoulder-knot.....	
<i>Oligia strigilis</i> agg. Marbled Minor agg.....	5
<i>Oligia fasciuncula</i> Middle-barred Minor	1
<i>Photedes minima</i> Small Dotted Buff	
<i>Hoplodrina alsines</i> The Uncertain	15
<i>Caradrina morpheus</i> Mottled Rustic	7
<i>Protodeltote pygarga</i> Marbled White Spot	
<i>Diachrysis chrysitis</i> Burnished Brass	



<i>Abrostola tripartita</i> The Spectacle	1
<i>Lygephila pastinum</i> The Blackneck	1
<i>Laspeyria flexula</i> Beautiful Hook-tip	2
<i>Rivula sericealis</i> Straw Dot	6
<i>Hypena proboscidalis</i> The Snout	1
<i>Zanclognatha tarsipennalis</i> The Fan-foot	2
<i>Herminia grisealis</i> Small Fan-foot	1

4. Behind the Loddon Room SU78427179

COLEOPTERA (Beetles)

CURCULIONIDAE (Weevils)

Polydrusus formosus

HEMIPTERA-HETEROPTERA (Bugs)

MIRIDAE (Capsid-bugs)

Deraeocoris flavilinea

5. Wet area west of the Loddon Room, SU784717

COLEOPTERA (Beetles)

APIONIDAE (Weevils)

Perapion curtirostre

CANTHARIDAE (Soldier beetles)

Cantbaris nigra

Cantbaris pallida

CHRYSOMELIDAE (Leaf beetles)

Oulema melanopus s.str.

MALACHIIDAE (Malachite beetles)

Malachius bipustulatus

NANOPHYIDAE (Weevils)

Nanophyes marmoratus

NITIDULIDAE (Pollen beetles)

Meligethes symphyti

OEDEMERIDAE

Oedemera nobilis

SCIRTIDAE

Cyphon ochraceus



HEMIPTERA-HETEROPTERA (Bugs)

MIRIDAE (Capsid-bugs)

Capsus ater

Plagiognathus arbustorum

PENTATOMIDAE (Shield-bugs)

Pentatoma rufipes (Forest shield-bug) [nymph]

HEMIPTERA-HOMOPTERA (Bugs)

CERCOPIDAE

Aphrophora alni

6. Path between car park and River Loddon, SU7771

COLEOPTERA (Beetles)

COCCINELLIDAE (Ladybirds)

Harmonia axyridis (Harlequin ladybird)

CURCULIONIDAE (Weevils)

Nedyus quadrimaculatus

NITIDULIDAE (Pollen beetles)

Meligethes aeneus

SCIRTIDAE

Microcara testacea

DIPTERA (Flies)

SYRPHIDAE (Hover-flies)

Volucella pellucens

HEMIPTERA-HETEROPTERA (Bugs)

MIRIDAE (Capsid-bugs)

Capsus ater

Leptopterna dolabrata

LEPIDOPTERA (Butterflies)

NYMPHALIDAE

Inachis io (Peacock) [larva]

Vanessa atalanta (Red Admiral)

ODONATA

COENAGRIIDAE

Enallagma cyathigerum (Common Blue Damselfly)

Ischnura elegans (Blue-tailed Damselfly)

**7. River Loddon, SU7772****ODONATA**

AGRIIDAE

Agrion splendens (Banded Demoiselle)**8. Mortimer's meadow, SU7772****COLEOPTERA** (Beetles)

APIONIDAE (Weevils)

*Eutrichapion viciae**Ischopterapion virens*

CANTHARIDAE (Soldier beetles)

*Cantharis nigra**Rhagonycha limbata*

CHRYSOMELIDAE (Leaf beetles)

*Bruchidius varius**Crepidodera plutus**Gastrophysa viridula**Neocrepidodera ferruginea**Neocrepidodera transversa*

COCCINELLIDAE (Ladybirds)

Harmonia axyridis (Harlequin ladybird)*Subcoccinella vigintiquattuorpunktata* (24-spot ladybird)*Tytthaspis sedecimpunctata* (16-spot ladybird)

CURCULIONIDAE (Weevils)

*Euophryum confine**Mecinus pascuorum**Phyllobius virideaeris**Sitona lineatus**Sitona suturalis*

ELATERIDAE (Click beetles)

Oedostethus quadripustulatus

MALACHIIDAE (Malachite beetles)

*Cordylepherus viridis**Malachius bipustulatus*

OEDEMERIDAE

*Oedemera lurida**Oedemera nobilis*

**HEMIPTERA-HETEROPTERA** (Bugs)

MIRIDAE (Capsid-bugs)

*Amblytylus nasutus**Leptopterna dolabrata**Megaloceroea relicticornis**Notostira elongata**Pithanus maerkelii***HYMENOPTERA** (Bees, wasps, ants, etc)

APIDAE (Bees)

*Bombus lapidarius***LEPIDOPTERA** (Butterflies)

HESPERIIDAE

Thymelicus sylvestris (Small Skipper)

SATYRIDAE

Melanargia galathea (Marbled White)*Maniola jurtina* (Meadow Brown)**LEPIDOPTERA** (Moths)

CRAMBIDAE

Chrysoteuchia culmella (Garden Grass Veneer Moth)

GEOMETRIDAE

Campogramma bilineata (Yellow Shell)

ZYGAENIDAE (Burnets & Foresters)

Zygaena filipendulae (Six-spot Burnet)*Zygaena lonicerae* (Narrow-bordered Five-spot Burnet)**ORTHOPTERA** (Grasshoppers & crickets)

ACRIDIDAE (Grasshoppers)

Chorthippus parallelus (Meadow Grasshopper)

TETTIGONIIDAE (Bush-crickets)

Metrioptera roeselii (Roesel's Bush-cricket)**Acknowledgements**

We are very grateful to Norman Hall and Ian Sims for showing us the BENHS collections and the moths on the day, for their moth data and observations, and in particular for their valuable explanations tailored to the younger members of our party. Perhaps we can return to Dinton Pastures one day and repeat the event.



Blair's shoulder knot (*Lithophane leautieri*)

by Jacqueline Ruffle (5911)

jmr.0204@yahoo.co.uk

I spotted this striking caterpillar in the *Cupressus* tree in our garden on July 9th and Colin Hart identified it for me as 'Blair's shoulder knot' from the photograph attached. He told me that it was an accidentally introduced species and when I looked into it further, I discovered a short article about it in the New Scientist.

First found on the Isle of Wight by K.G. Blair in 1951, the moth has since spread northwards. The larvae feed on *Cupressus macrocarpa*, a tree introduced to England from California and planted in many English parks and gardens. The larval food plant of choice is *C. sempervirens*, but caterpillars will also accept *C. macrocarpa*.

This caterpillar was clearly about to pupate, as it had some silky threads nearby, but on checking for a pupa the following day I could find no trace of larva or pupa, so I imagine it was eaten by a bird in the intervening period.

Reference

American tree brings new moth to England. New Scientist. 16 Dec. 1982: 725.





An Autumn Visit to To Turkish North Cyprus

by Daniel and Hilary Haines

56, Vesta Road, London SE4 2NH.

We have been visiting TRNC for the last fourteen years, once or twice a year for two to four weeks at a time. Our chief interests are the butterflies and the plants of this beautiful part of a unique Mediterranean island. Formed by the collision of two tectonic plates, then separated from mainland Asia, Turkey in particular, by rising sea levels 10-12 thousand years ago, Cyprus has produced some of its own endemic plants and insects, including butterflies.

There is a huge variety of geological formations and of sediments, rocks, minerals, and soil types. This has resulted in a magnificent diversity of habitats and micro-climates, allowing about fifty species of butterfly to be found on this relatively small land mass (John 2000). Of these, about forty have been found, recorded and photographed by us in North Cyprus (Haines and Haines 2009).

Following a terrible period of internal strife in the 1950s and 1960s Turkey relieved the predominantly Turkish north, and the island became two separate states in 1974. Until recently travel between the two has been very difficult, with dire warnings of the imaginary dangers of crossing the border, or the Green Line, as it is known. It is now much easier. However, all our observations and recordings are strictly to the north of the Green Line.

The great majority of our visits have been in spring or early summer. There is little butterfly activity in the hot, dry high summer. During an August visit we saw a total of five species, none of them frequently. In a normal spring or early summer visit we see an average of about thirty species.

So what is the difference in the autumn? There are fewer species to see. The African Ringlet, *Ypthima asterope*, and the Hermit, *Chazara briseis*, one old and tattered specimen of each, were the only Browns that we saw. The Blues were represented by the African Grass Blue, *Zizeeria karsandra*, seen rarely, the Long Tailed Blue, *Lampides boeticus*, and the Common Blue, *Polyommatus icarus*, seen a little more often, and the Lang's Short Tailed Blue *Leptotes pirithous*, seen all over the place as the dominant Blue. This is interesting, as the Lang's Short Tailed Blue is seen in spring only where Plumbago, *Plumbago auriculata* (its larval host plant), is growing, usually in gardens. It is not common at this time. But in autumn we saw it feeding on Stink



Aster, *Dittrichia graveolens* Autumn Grape Hyacinth, *Muscari parviflorum* and Blackberry flowers, *Rubus sanctus*. It was widespread and common.

Another outstanding autumn feature is the flowering of the Carob Tree, *Ceratonia siliqua*. This tree has been cultivated around the Mediterranean for many millennia. The dried seeds, of an amazingly consistent weight, have been used to weigh gold since time immemorial. This is the origin of the carat. The seed pods were used to make the glutinous coating of photographic film, giving it its pungent smell familiar to photographers from the age of film. (Electronic memory chips do not smell, a sad loss!) The complete pods are used today to make a chocolate-like flavouring used in ice cream and confectionery, much favoured in the USA and the Middle East. They were used as pig fodder in biblical times, and are the pods referred to in the parable of the Prodigal Son.

This fine old tree flowers in the autumn. Female trees are very widely cultivated, with small brownish flowers of minor interest to insects. In a few large, mature specimens the proximal flowers on each branchlet are male, in the form of huge pollen-bearing catkins. The smaller, brownish distal flowers are female. The whole tree gives off an intense, pungent, off-yeasty smell, advertising its presence to very many insects.

A mature tree may stand ten metres tall by ten metres wide. Once the observer has overcome the tendency to nausea from the smell, it is found to be an incredible micro ecosystem all of its own.

Visiting the stinking flowers are flies, honey bees, bumble bees, wasps, hornets, beetles and butterflies in their thousands. On one such tree alone, in Sipahi Green Donga, near Sipahi, a fine butterfly haunt, were several hundred Painted Lady, *Vanessa cardui*, butterflies, and a couple of dozen Red Admirals, *Vanessa atalanta*. On another such tree at Book End Bridge, near Mersinlik, a common haunt of Eastern Festoon, *Zerynthia cerisyi*, in spring, several Two Tailed Pashas, *Charaxes jasius*, were feeding. This was especially interesting, as they are said not to feed on flowers, only on fermenting fruits (Makris 2003). But they certainly had their tongues out and down the carob flowers.

This whole concentration of insect life attracts insectivorous birds of many species that gorge themselves for a few minutes, and then retire from the stench to digest their fast food takeaway. (Actually, birds do not have a developed sense of smell, so it is not the stench that curtails their visit, it must be the bloated feeling.)



After about midday the butterflies begin to behave as if very drunk. They flop down from the tree, rather like falling leaves. On landing on the ground they are too soporific, drunk, or heavy to fly up again. This produces a feast for the waiting lizards. Alas, we did not see a snake waiting for the bloated lizards!

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Drama at the Sugar Patch

by Jan Koryszko (6089)

Dudley Place, Meir, Stoke-on-Trent, Staffordshire ST3 7AY.

Over the years I have published many sugar patch observations in this journal. The wet summers of 2007 and 2008 were most successful. Mr R. H. Heath and I sugared in our gardens at the Meir regularly, after the frequent heavy rain. Quite often the flower blossoms were soaked, so more insects visited the sugar patch during both night and day.

We tried a new sugaring method using empty 500 ml pop bottles. Holes of different sizes – no bigger than three to five eighths of an inch – are drilled or burned into the plastic bottles, with one larger hole near the neck at the back of the bottle to enable hanging on a nail or hook. To avoid losing liquid contents, do not put any holes within half an inch of the base of the bottle. I find it best to burn holes by using nails held in pliers or old electrical screwdrivers that have been heated on a gas ring. Remember that metal conducts heat so be cautious – wear some tough garden gloves. Drilling tends to split the bottles.

Fill the bottles – not too tightly – with toilet or kitchen tissue, then pour some Lyles Golden Syrup over the tissue and let it soak in. Put the screw top on tightly and hang it anywhere. Put it in the sun during the day for butterflies and other insects, and in a sheltered spot at night for moths. The insects just feed through the holes. There is no mess – just top up the bottles now and then. Lyles Golden Syrup can be bought at most Tesco stores in 454 gram bottles, with lid flap



pourer. When they are empty, use them to make further insect feeders. You may also like to try experimenting with other ingredients.

We have made many interesting observations over the years. Butterfly visitors include Red Admiral (*Vanessa atalanta*), Peacock (*Inachis io*), Speckled Wood (*Pararge aegeria*), Small Tortoiseshell (*Aglais urticae*) – very scarce during 2008, singletons only – and just one Holly Blue (*Celastrina argiolus*). Moths include Old Lady (*Mormo maura*), Copper Underwing (*Amphipyra pyramidea*) Svensson's Copper Underwing (*Amphipyra berbera*), Red Underwing (*Catocala nupta*), Large Yellow Underwing (*Noctua pronuba*) and many others.

During the day, many dramas can be seen taking place, especially in the late summer, when the Common Wasp (*Vespula vulgaris*) is attracted to the bottles. Some flies and wasps force themselves through the holes in the bottles, some getting stuck half way. These are often eaten alive – wasps will eat both flies and other wasps. Spiders will also attack flies and butterflies. Butterflies can often beat their attackers off with their wings, but I have seen worn Speckled Woods and Small Tortoiseshells being taken by spiders and wasps. Other predators are also lurking: ants, earwigs, and shield bugs (mainly *Picromerns bidens* – a killer of small insects) and on two occasions the Zebra Spider (*Salticus scenicus*) taking hoverflies unaware.

Drunken species will fall to the ground and fall prey to frogs, toads, mice and beetles. In the air bats take many moths at night.

Our gardens give us much pleasure as we sit in our deckchairs and enjoy barbecues. Most folk are unaware of the dramas unfolding around them; a world within a world, the laws of nature all around us.

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Beatific Burlblings from Bugland

by Martin Hough (3354)

7 Post Mill Orchard, Grundisburgh, Woodbridge, Suffolk IP13 6UT.

As an autumnal diversion, likely to be of particular interest to the bibliophiles amongst our membership, I would like to share an extract or two from a strange little book whose title page reads “*The Beatific Burlblings of Bugland’s Bard*, by Bard Ellnest Eriott, extenuated, condoned and abetted by Bardlet Maude Clorley” (Beccles: Nobbs and Goate, 1934.) This slim volume was passed on to me by a friend who found it in a Suffolk Bookshop.

A little detective work was called for. Yes – there really was a publisher called Nobbs and Goate of Beccles – they seem mainly to have been publishers of Government materials. Maude Clorley was a pseudonym used by Claude Morley – a major figure in the study of Natural History in Suffolk, founder of the Suffolk Natural History Society and occasional journalist. On the same principle, it seemed likely that Ellnest Eriott would be somebody called Ernest Elliott. He mentions at one point that he had written about Ichneumons – that was another clue. A Google search under “Ernest Elliott” and “Ichneumons” quickly revealed a paper in 1865 in the Entomological Society of London – co-authored with Claude Morley! Our author’s pseudonym has been penetrated.. With his proper name discovered, I was able to find an excellent article about his life story originally published in the Suffolk Natural History Society’s journal “White Admiral” (see references.)

The book includes some lovely pastiches of Lewis Carrol:

The buggist and the F.E.S.
Were looking for the wood
They wept like anything to see
A clearing where it stood:
“Now that’s all carried off,” they said
“Our sugar is no good”

“If seven bugs with seven broods,
Had gnawed for half a year,
Do you suppose,” the Buggist said,
“They would have got it clear?”
“I doubt it,” said the F.E.S.
And dropped a saline tear.



“O, bugglings, come and walk with us,”
The Buggist did beseech –
“A pleasant walk; you’ve much to learn
And we have much to teach;
We cannot do with more than ten,
To give a box to each.”

An ancient Beetle buzzed away,
But ne’er a word he said;
That wary Insect winked its eye,
And shook his hoary head –
To indicate, he would not choose
A pill-box for his bed.

And how about this one?

How doth the little Cossus-grub
Destroy the poplar-tree,
And makes therein his hollow home
As gaily as can be

How gallantly he gnaws his way,
And makes his body swell,
And causes all the air around
Most nastily to smell.

And when his work is almost done,
He spins a little coat,
And, last, becomes a wondrous cross
Between a moth and goat!

There’s a hundred more pages of this stuff, but perhaps I have tried your patience long enough!

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Insect and spider impressions in Japan

by Rainer Breitling (14093)

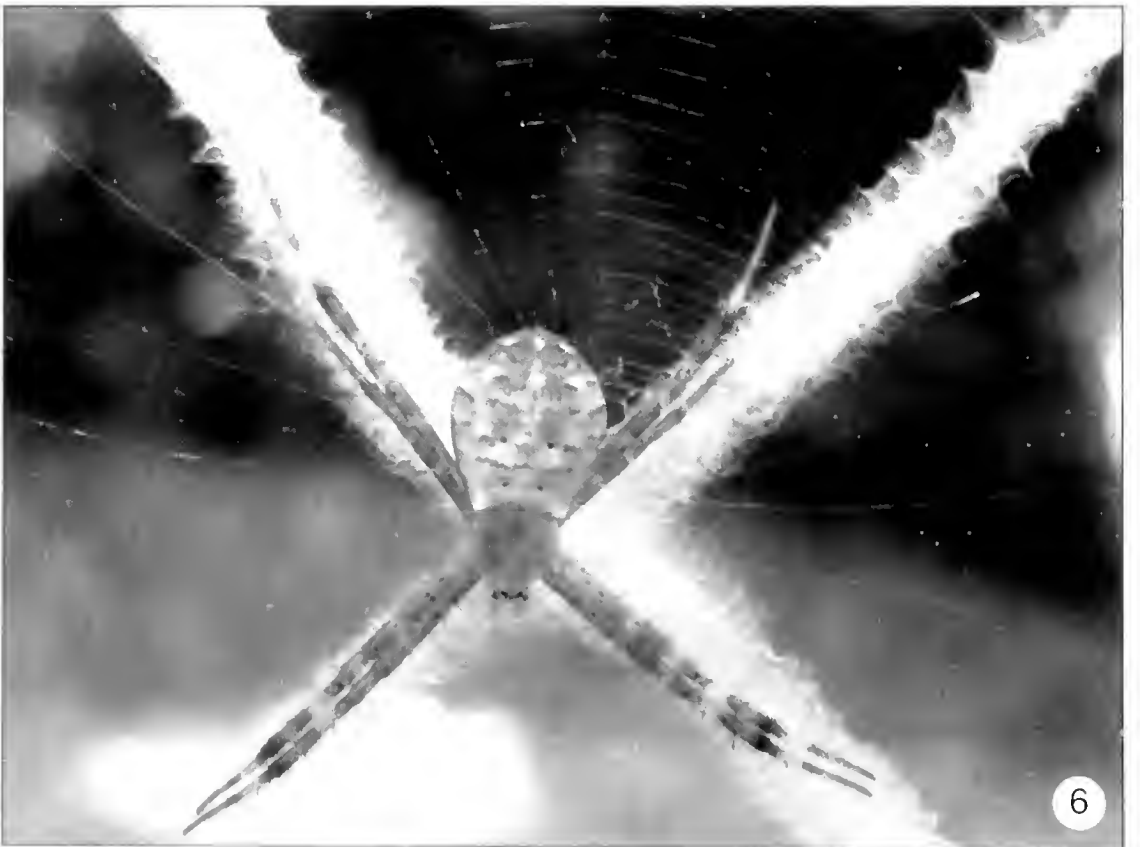
r.breitling@bio.gla.ac.uk

In July and August 2010 I had the chance to visit Japan for the first time. Like many Western visitors, I expected to find a crowded concrete jungle, with nature all but vanished under the pressure of expanding cities and polluting industries. I couldn't have been more wrong. This became clear already on the first walks around the Osaka University guesthouse, where we were staying the first week: among the large modern research facilities, there was space left for bamboo groves, and although it was the final days of the rainy season and the vegetation was still dripping wet, there were large swallowtail butterflies (Papilionidae) flying between the plants; *Graphium sarpedon* with its black-and-blue wings being the most common (Figure 1), and *Atrophaneura (Byasa) alcinous* with black wings seemingly the size of a bird the most impressive. These large animals, which were bigger than any butterfly I had seen in Europe before, kept appearing wherever we went for the rest of the journey, a constant reminder that Japan is actually a subtropical country, which maintains a striking natural heritage. Even in the middle of downtown Kyoto traffic, swallowtails could be spotted flying around the traffic lights.

Beetles were naturally abundant as well, and again in sizes and colors that are amazing for any visitor from more temperate climes. Various rose beetles and chafers (Scarabaeidae) were commonly seen, in brown and green and shining gold, even in urban situations, and one early morning visit to a coppice among the melon fields of Miura even offered the spectacular sight of the famous kabuto-mushi (Japanese rhinoceros beetle, *Trypoxylus (Allomyrina) dichotomus*) feeding on tree sap, together with an assortment of other beetles and flies. The next day yielded another specimen of this mainly nocturnal species feeding on a fermenting melon in broad sunlight, when the temperatures were already well above 30 degrees (Figure 2). Longhorn beetles (Cerambycidae) abounded in huge and colorful forms, and even the most common ones, such as the red-and-black Spotted Scarlet Longhorn (*Eupromus ruber*) and the shiny jet-black white-spotted *Anoplophora malasiaca* (a notorious pest in citrus groves), were impressive sights (Figure 3). A female of the wasp-mimicking bamboo longhorn *Chlorophorus annularis* delighted me by proceeding with her egg laying business on a stack of bamboo at Adashino Nembutsu-ji temple in the mountains above Kyoto (Figure 4).













The spider fauna was also worthy of a subtropical island: the first species to be spotted was *Nephila clavata*, a golden orb web spider, famous for its huge and powerful webs. At this season they were mostly juvenile, and their colonies densely covered the shrubs in parks and wetlands. The species is noteworthy for the fact that its perfect orb webs are protected on both sides by parallel tangled guard webs, often decorated with the remains of eaten insects. Other orb web spiders decorated their webs with a range of different stabilimenta: some are just densely covering the hub, as in the juvenile wasp spiders (*Argiope bruennichii*, Figure 5), some extend in broad bands up and down from the centre (e.g., in adult *A. bruennichii* and some *Cyclosa* species), while others are spreading diagonally in the form of a St. Andrew's cross, in various *Argiope* species named after this behaviour. The cross either extends from the tips of the spread legs, with the spider body completing the centre, or runs right through the middle (Figure 6). This leads to an interesting difference in behaviour as well, for, when disturbed, spiders with the latter type of stabilimentum just rapidly crawl to the other side of the web to hide behind it, while those with the former, open type quickly jump down from the web and hide in the vegetation on the ground. Jumping spiders (Salticidae) were seen in remarkable diversity, no two of them seeming to be of the same species. One of them even seemed to belong to an entirely different order: *Myrmarachne japonica* so perfectly mimics the large forest ants of the genus *Camponotus* that even after counting the legs I was reluctant to believe that I had a spider before me (Figure 7). Even the pedipalps are flattened to resemble the large mandibles of an ant. Perhaps the most memorable spider sighting was a specimen of the huntsman spider, *Heteropoda venatoria*, that was running across a parking lot in Miura in full daylight (Figure 8). It is slightly disconcerting to think that this tarantula-sized species that dwarfs any European house spider is a common occupant of Japanese houses, no matter how useful they are in keeping the cockroach population at bay.

The most obvious flies were the ever-present mosquitoes, and robber flies (Asilidae, in particular the large *Promachus yesonicus*) waiting for prey on fences and bushes (Figure 9). Houseflies, on the other hand, were notably scarce, perhaps due to the famous cleanliness of Japanese streets.

Large dragonflies were seen in all colors, whenever there was some open water available, whether it was temple ponds, roadside ditches or rock-pools along the beach. At a little lake close to Osaka University, *Pseudothemis zonata* dominated the airspace, a dark species with only



the first few segments of the abdomen flashing bright yellow spots. They were constantly on the move, patrolling the open space between the trees that lined the lakeside. Only a single yellow-ringed gomphid (*Sieboldius albardae*) was perching calmly by the water, posing for some close-up photos (Figure 10). But especially impressive were the numerous *Orthetrum triangulare* (Libellulidae) that shared the tiny pond of the Hiroshima memorial bell with frogs and colorful freshwater crabs, considering that this place had been wiped clear of all life just 65 years ago.

The most commonly noted insect, however, were the cicadas, which make their presence known by their constant shee-shee-shee songs everywhere there is a trace of trees, even in the most densely populated areas of Tokyo. Every morning one can see dozens of the freshly shed larval skins hanging in the canopy at urban parks or in the delightful gardens surrounding the ubiquitous temples and shrines, and one evening in Ueno Park I found a freshly emerged larva that was crossing the walkway on its path to the nearest tree, still all sticky and glistening.

The noisy and conspicuous cicadas are probably at the basis of the amazing fondness for insects that is so notable among the Japanese that it is even mentioned in the tourist guidebooks. The Natural History Museum in Tokyo features countless insects throughout its displays, both in the Japanese and in the global section. For instance, hundreds of color variants of native beetles are shown, all flawlessly pinned and meticulously labelled, and a large display case at the beginning of the biodiversity section is dedicated entirely to the various methods used for collecting staphylinid beetles, plus a hands-on microscope to examine the output of one collecting trip. Every small bookshop has a number of insect identification books available, and the larger ones, such as Maruzen at Tokyo Station, stock several shelves full of entomological literature, from tiny pocket guides to hefty monographs of individual orders or families. And everywhere we went, one could see children with insect nets chasing butterflies or cicadas.

Japan offers a diverse, colorful and intriguingly “foreign” culture, set in an often stunningly beautiful landscape, and made accessible by an incredibly efficient, comfortable and reliable public transport system – but it is also an entomologist’s paradise. It can be wholeheartedly recommended to anyone interested in a special nature experience, and I am already looking forward to my next trip.



***Hemileuca maia* Lepidoptera: Saturniidae ova – why did they not hatch?**

by *Wesley Caswell* (3133)

46 Lewgars Ave., Kingsbury, London NW9 8AS.

I wonder if any AES members have any ideas on the following?

Last summer I had a good number of pupae of *Hemileuca maia* and these all emerged in midsummer.

Three pairings were obtained at midday on the same day (i.e. three different females, three different males) and a large number of ova were laid during the next few days. These were overwintered in two separate places, with ova of other species which have ova which overwinter.

However, not one single ovum from any of the moths hatched, although they did not collapse, and looked fertile. The other species I had all hatched OK. They were not left in the sun, or frozen.

My apologies to anyone who had some of these ova at the AES exhibition etc.

Any ideas as to why they failed to hatch?



Two mysteries: one solved, one for another day

by *Richard Beaumont* (7331)

6 Moor Cottage Close, Netherton, Huddersfield, West Yorkshire HD4 7LF.

On the 28th August 2009 while on a holiday in Jersey at the coastal tourist beach at Greve de Lecq I found a moth that I could not identify. It was on in the corner of the windowsill of the public toilets there. I thought it was pyralid or a funny looking tortrix but for nearly two months afterwards I could not find it anywhere on the internet or in my extensive collection of books.

It was only when looking for another moth on the U.K. Moths web site much later that I saw the specimen of the Jersey Black Underwing, *Nola chlamitulalis* and realised I had found it! The features that grabbed me about the moth at the time when I first saw it were its branched antenna, two wing lines and the spots along the hind part of



the wing. The specimen on the web has less buff speckling than the specimen I found and the branched antenna are not visible on the web specimen.

Just before this at the start of August 2009 I had been to my usual holiday haunt of Shanklin on the Isle of Wight. While there I always check the colony of *Leucoptera lathyriifoliella* on the cliffs. It feeds in the leaves the narrow leaved everlasting pea by the lift to the beach. The food plant is easy to see with its bright pink flowers. There were plenty of mines again this year, often several to a leaf. The colony looks to be doing great. This year I noticed a difference however; the plants had another species also feeding on them. Its larva feed in a different manner, protected inside the leaf by doubling over the leaves and feeding in the fold. This then left a see-through window in the leaf. The larva itself looked like a tortrix larva with the darker area just behind the head. I am hoping that someone can let me know what this species is?

This year I have a new moth trap at my home in Netherton, Huddersfield, it is a moonlander with the green battery powered light. I bought this to avoid the chance any of the large number of children living near me breaking the bulb and being exposed to mercury.

On the face of it I have had a poor year, the trap contents have been few compared to my old Robinson mercury vapour trap. But the moths are a different selection and less damaged due to the fact that large moths do not seem to be interested in the light and the trap attracts moths like carpets, pugs and the like. I have had two new species: Beautiful Hook Tip (*Laspeyria flexula*) and Straw Dot (*Rivula sericealis*). I have also caught a specimen of the Blackneck (*Lygephila pastinum*), which was flying in the daytime at Magdale, Netherton, Huddersfield.





Book Reviews

Mayfly Larvae (Ephemeroptera) of Britain and Ireland: Keys and a Review of their Ecology

by J.M. Elliott and U.H. Humpesch. 152 pp. Colour photographs and line drawings. Published by the Freshwater Biological Association, The Ferry Landing, Far Sawrey, Ambleside, Cumbria, LA22 0LP. Price £27.00

This new edition replaces a book published in 1988. Much has happened in that time, including the addition of three species to the British list. This means there are 51 species on the British list, though at least two species may no longer be found here. The book deals well with nomenclature changes and helps to clarify taxonomy.

The book begins with an introductory section. This includes a full checklist of British and Irish species, as well as a brief section on collection and preservation of specimens. The bulk of the book consists of the Keys, first to family level and then to species level. The family keys are almost entirely pictorial – a simple dichotomous key, followed by black and white illustrations of typical exemplars from each family. The species keys are much more detailed. They also include helpful notes on most species to help confirm identification.

Following the keys is a useful summary of our current knowledge of the ecology of Ephemeroptera. A large portion of this section is composed of a tabulated summary of habitat, habits, feeding types, microhabitats, life cycle, flight period for adults and endangered status. There is a wealth of information crammed here, though I struggled to find an explanation for the fish-related zones mentioned. Perhaps this is familiar to those experienced in the field. However, a simple explanation would help beginners.

The photographs and illustrations throughout the book are well chosen and very clear. The diagrams in particular are very easy to interpret and compliment the text nicely.

Overall this is a very useful book. The dimensions of the book have grown with the content compared to previous editions. The book measures 170mm x 245mm. Sadly, this is too large to fit in a pocket, though it is a similar size to many RES Handbooks. Having said this, the book's positives far outweigh the negatives. It is a must for those studying our freshwater fauna. As many species are good 'indicator' species. It will help anyone attempting to verify the quality of a watercourse. Strongly recommended.

Phil Wilkins



What's in your Garden: a book for young explorers

by Colin Spedding. Brambleby Books, Luton, 2010. 85 pages. £7.99. ISBN 978 0 9553928.

This book by veteran agriculturalist and animal welfare biologist Professor Sir Colin Spedding is a welcome contribution to the children's literature on natural history. The content is aimed at the age group 7-11 years, so it complements the Key Stage 2 science curriculum, and the text and illustrations (all 'test-read' and approved by an eight year old adviser) as well as the book's general approach are all successfully tailored to this age group.

Measuring 17cm by 17.5cm, the book is a manageable size for little hands, and its readability is enhanced by its layout, with both text and illustrations laid out in three columns on each page, interspersed with white bubbles containing questions designed to stimulate. These range from the factual ('Do you know why the bush is called a pussy willow?') to the challenging ('Can you tell the difference between a butterfly and a moth?') to the reflective ('Think of a nice summer's day and what do you see?').

For some reason the bubbles are green in the first chapter – it is not immediately obvious (to this reviewer, at least) whether this is deliberate or an oversight, but the book in general is well edited and proofed (I only managed to spot one missing pronoun, and that was in the brief author's preface, rather than in the body of the book).

What's in your Garden begins with an introductory chapter entitled, appropriately, 'What's in your garden' (that's the one with the green bubbles!) and the following 12 chapters deal with butterflies and moths; bees, wasps and ants; nests (Why do animals build nests?...Why are they in trees?...What animals lay eggs but do not build nests?...Why do animals produce eggs?... How can an ant lay an egg as big as itself?...); Hedges, trees and bushes; Seeds; What's under logs and stones; What's in the long grass?; The hunters; The hunted; What's in the pond?; The garden at night. There is also a glossary of useful words suited to this age group at the end of the book.

The author's stated aim in producing this volume was to produce a factual book that children can read for themselves without having to depend on adults to read it to them, and this he has certainly achieved, with many key ecological messages effectively introduced and explained in an engaging way. In the preface, Spedding states that people of all ages appreciate books that are clear and jargon-free,



and he quotes Albert Einstein: 'As simple as possible – and no simpler'.

This book is highly recommended for the clarity with which it gets its many messages across to its intended readership, and there are enough intriguing questions, appropriately tailored answers and suitable illustrations in it to stimulate further interest in young minds at a stage in their lives when ideas and interests stick. It is extremely gratifying to see such an eminent biologist as Colin Spedding continuing his efforts to encourage an understanding and appreciation of natural history in this age group.

Dafydd Lewis

British Butterflies throughout the year by Peter May

This new book from the AES describes the adults of different species of British butterflies, according to the time of year they appear on the wing. Nearly all the 60 British species are illustrated. Focussing on encouraging an interest in entomology among the young, and the young at heart, there is a helpful calendar of flight times and a useful checklist to help you keep track of your observations.

£ 5.00

Members price £ 3.80

Preparing and maintaining a collection of Butterflies and Moths

by P. May and M. White. A practical manual detailing the various methods used to prepare specimens for a collection, from killing methods, setting the specimens and repairing damaged ones, to storage and preservation, including pest prevention and cure. 21 pages, 4 figures and 5 plates. (2006)

£4.85

Members price £3.65

The Hymenopterist's Handbook by Dr. C. Betts et al.

2nd edition dealing with the history of their families, classification and structures, natural history: studying, collecting, breeding, attracting and preserving Hymenoptera. Appendices include keys to the families. 214 pages with numerous tables, keys and figures (1986)

£ 11.45

Members price £ 8.60

Revised Flight Tables for the Hymenoptera

Revised flight tables for the Hymenoptera giving, wherever possible, times, location, flower visits and some indication of distribution and abundance. 24 pages (1988)

£ 3.10

Members price £ 2.35

A Coleopterist's Handbook

Edited by J. Cooter & M.V.L. Barclay. The *Coleopterist's Handbook*, is now available as a fully revised and expanded fourth edition. Nomenclature has been brought in line with current use, collecting/curatorial methods reflect best practice and plant/beetle and beetle/plant lists are included together. Recent additions to the British fauna, modern and traditional techniques are included. All advice and comment given in the book is based upon collective years of practical experience of both curatorial methods and field craft: beetle family chapters have each been written by an internationally recognised authority. 496 pages including 32 colour plates.

£ 54.00

Members price £ 39.00

Host plants of British Beetles: A List of Recorded Associations

A list of a wide range of plants, in alphabetical order, together with the beetle species that have been recorded as being associated with them. 24 pages (1992)

£ 3.10

Members price £ 2.35

A Silkmoth Rearer's Handbook by B.O.C. Gardiner

SPECIAL OFFER PRICE £ 7.70

No further discounted price available

Rearing and Studying Stick and Leaf-Insects by P. D. Brock

Specifically intended for beginners, although it is also suitable for experienced Phasmid enthusiasts, it is one of the few guides to rearing that features the majority of the culture stocks available, 22 species in detail. The informative text is complimented by 8 colour plates, 14 black and white plates and 29 figures. (New edition, 2003)

£ 11.20

Members price £ 8.20

The Study of Stoneflies, Mayflies and Caddisflies by T.T. Macan

A comprehensive guide to collecting and studying the biology and ecology of these aquatic insects. 44 pages, 10 figures and bibliography (1982)

£ 4.20

Members price £ 3.15

Breeding the British Butterflies by P.W. Cribb

A practical handbook covering all aspects of butterfly breeding, including general techniques, equipment and hints on how to breed each of the British species. 60 pages, 6 figures, 5 plates, Revised (2001)

£ 5.20

Members price £ 3.85

Practical Hints for the Field Lepidopterist by J.W. Tutt

Written at the turn of the century, this book has been reprinted because of its scarcity and value to students of Lepidoptera. It gives a complete month by month guide to which species and stages of macros and micros to look for and how to find them. Also contains a biological account of the early stages and how to keep, rear, photograph and describe them. 422 pages. Hardback. (Reprinted 1994).

£ 24.00

Members price £ 18.30

An Index to the modern names for use with J.W. Tutt's

Practical Hints for the Field Lepidopterist by B.O.C. Gardiner. A valuable cross-reference guide between the scientific and English names used in the early 1900s and the present time

£ 4.70

Members price £3.50

A Guide to Moth traps and their use by R. Fry and P. Waring

The first sections deal with the measurement and properties of light leading into the types of lamp available and the electrical circuits needed to operate them. The next sections give details of the construction of the most popular traps used in the UK. The last half deals with the practical use of traps in the field including where and when to trap, limitations of traps and their relative performance. 68 pages. 21 figures, 15 plates (1996)

£ 6.85

Members price £ 5.05

The Amazing World of Stick and Leaf Insects by Paul D. Brock

A superb, comprehensive guide, for all those intrigued by these groups of insects. Topics covered include structure, fascinating facts, life history and development, defence behaviour, enemies, collecting, breeding (including trouble shooting), preserving, taxonomic studies, important collections in Museums etc. around the world and elaborate stories, heliefs and poems. Also outlines the major known species around the world on a regional basis. A section on Fossils is included. Includes a comprehensive glossary of the technical terms used in the description and classification of stick and leaf-insects. Hardback A5. 184 pages, 46 figures, 26 black and white plates and 40 pages of colour plates (containing 83 photographs and 4 drawings/paintings of insects and their habitats). (1999)

£ 18.90

Members price £ 14.10

Rearing Parasitic Hymenoptera by M. Shaw

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The Amateur Entomologists' Society

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The
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of the Amateur Entomologists' Society

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AMATEUR
ENTOMOLOGISTS'
SOCIETY

The Bulletin



75th Anniversary
1935-2010

of the Amateur Entomologists' Society

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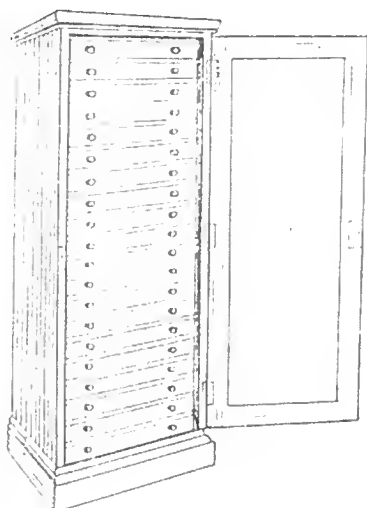
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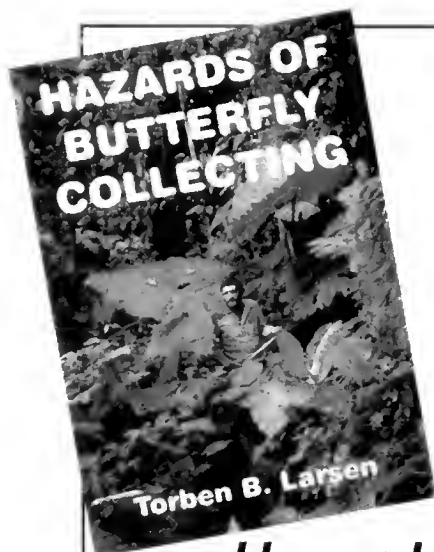
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Bulletin Cover



This month's cover picture shows an adult male Common Blue (*Polyommatus icarus* Rottemburg).

In the Big Butterfly Count of 2010 it was found to be Britain's fifth commonest butterfly, and it is to be seen plentifully across most of Europe. One reason for this is that its larvae feed on a wide variety of leguminous foodplants such as Birds Foot Trefoil, and Lucerne- which means it can thrive on agricultural land. There is often more than one generation every year.

The photo was taken by AES Treasurer Peter May: the editor would like to thank him for his kindness in making it available for publication.

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The Bulletin

of the Amateur Entomologists' Society

Volume 69 • Number 493

December 2010

Editorial

It is a cold, wet and windy day that I write this editorial – not good insect weather. However, the weather has been variable of late. This has allowed many Darter dragonflies to remain on the wing until November. We have certainly had a good array of these insects around our pond in Norfolk. Dragonflies are a very photogenic group, though tricky to capture in print. I am sure we have many skilled photographers amongst our membership, however. So it would be nice to publish more members' photographs in the *Bulletin* in 2011. Pictures can be submitted via the website (www.amentsoc.org).

The Annual Exhibition is over for another year. Recently, I have not been closely involved with the organisation of the event. Hence it always astounds me how Wayne Jarvis and the team seem to go from strength to strength and produce better Exhibitions year upon year. I certainly heard lots of positive comments in Kempton Park. Indeed, I think the last *Bulletin* of the Society's seventy-fifth anniversary year is a good point to register thanks to all those who are listed in the inside cover of the *Bulletin*. These are the volunteers who work away to keep the Society running. They are one of the main reasons that the Society is still a force for promoting the study of insects, 75 years after it was first formed.

The other reason for the Society's strength is, of course, you... the members. You are certainly the life-blood of the *Bulletin*, so please keep submitting those articles for the enjoyment of others.

Phil Wilkins



STOP PRESS: Due to a production error some pages in this issue may have October as a page heading – this should of course read December. Please accept our apologies for this gremlin.



SOCIETY MATTERS

THANK YOU

The Society would like to thank all those members who kindly included a donation with their 2011 renewal subscription. This is very much appreciated.

DIPTERIST'S HANDBOOK

The new Second Edition of this publication is now available from the Society, at a discounted rate to members. It is twice the size of the 1978 edition.

NEW AFFILIATION

The AES is now affiliated to the Invicta Arachnid Club (website: www.invicta-arachnid-club.org.uk) which is based in Kent. Invicta will be holding the first 'South East Arachnid Show' at the Ashford International Hotel on 30th January 2011. Admission is free to paid-up AES members (otherwise adults £3, Children 5-16 and concessions £1.50). Further details are available from the club's Chris Carter (07847 793 186) or Theresa Merton (07758 225 786).

'BIG SOCIETY'

We would be interested to hear from any accountants from among our members who would be able to take over as Independent Examiner of Accounts, a role ably performed by John Flynn in previous years.

We are also beginning to look for a new Hon. Treasurer; we need to fill this role by April of 2012 at the latest. Training is available, so if anyone would like to add 'AES Hon. Treasurer' to their *curriculum vitae*, now is your chance! We also need new members to join Council in 2011, to replace retiring trustees.

Our membership numbers continue to increase, especially those of the Bug Club, which is run in collaboration with the Royal Entomological Society. This has been partly due to those members who have helped to publicise the AES and the Bug Club at local events. An opportunity to promote the Society in Devon will take place on 29th January – Dr Peter Smithers from the University of Plymouth is organising an insect film festival on that day. He writes:

We are showing some family insectfilms in the afternoon and grown up ones after 5.0pm. There will be an array of ento stalls in the foyer



of the universities cinema (which is vast) including Plymouth museum, inverts from Dartmoor zoo, edible unique, RES, bug building and other games and crafts from me, an ento book stall and an ento cafe and a bar... Would the AES / Bug club like to have a stand, no charge just turn up and wave the flag.

We can offer one or two 6ft tables and display boards (1x 2.5 m)'.

If you would like to 'fly the flag' for the AES and Bug Club on that day, please get in touch with the AES Secretary who can let you have the necessary leaflets etc.

WANTS & EXCHANGE NEWSLETTER - UPDATE

Progress has been made with setting up the new Wants & Exchange Newsletter, which we hope to launch by the time the June *Bulletin* is published, if not sooner.

The Newsletter is designed to be sent to members via email. Members who do not have an email address will be able to receive a printed version of the Newsletter by post. This new arrangement will allow the Newsletter to contain information additional to that contained in the traditional *Wants & Exchange List*, and it will be more timely. Full details on how to sign up for the Newsletter will be made available when the time comes.

The *W&E Newsletter* is the first of two projects aimed at improving communication within the Society and between members. The second project will explore the possibility of setting up Special Interest Groups, but we will not have the resources to explore and progress that initiative until after the *Wants & Exchange Newsletter* is firmly up and running.

AES EVENTS IN THE NEW YEAR

26th February 2011

Young Entomologists' Day @ Oxford University

Oxford University Museum of Natural History, Parks Road, Oxford OX1 3PW

There will be three aspects to this event:

1. Presentations by young entomologists: Children between the ages of 4 and 18 are invited to bring exhibits they are willing to talk about to fellow members – or they can just give a brief talk, with or



without slides. Last year, many of the children gave PowerPoint presentations – including five year old Magnus McLeod.

The children's talks will be preceded by a presentation by dipterist Dr Erica McAllister from the Natural History Museum, London, who will also be one of the expert judges. Prizes will be awarded for the best presentations, and these will include signed prints presented by Richard Lewington. Full details are available on the AES website www.amentsoc.org or from the AES Secretary (secretary@amentsoc.org).

2. Tours of the Hope Entomological Collections

These will be conducted by the Museum's Curator of Entomology, Darren Mann.

3. Information on other organisations

Other invited societies and initiatives will be in attendance.

There is no charge for admission but please complete a booking form as soon as possible if you have a child who wishes to give a talk. If you are planning to attend as an 'onlooker' further details are available from the AES Hon Secretary (email secretary@amentsoc.org). (The lecture theatre was almost full at this event last year, so early booking is advised).

Saturday 30th April 2011: AES Members' Day & AGM

Our Members' Day will take place at Butterfly World near St Albans, Hertfordshire. This new venue is next door to the Royal Entomological Society HQ.

Further details will be provided to members closer to the time.

OTHER EVENTS

AES events are organised on a rolling basis (i.e. we have no fixed annual calendar of events) and are publicised in good time to members through our journals and on our main website www.amentsoc.org.





Two AES events

by David Howden

For several years now Andy Culshaw (AC) and I been running a couple of lepidoptera events for some of the natural history societies in our area. In 2010 these events were also opened to AES and Bugclub members. A brief report on the events follows. Opening up your events to others (particularly the sort of knowledgeable members in societies like the AES) is a good way to get extra eyes on a site and have people with other taxonomic interests join you. I would encourage all members to consider running an event for the society.

Horsenden Hill 26th June 2010

This event looking for the butterfly *Satyrrium w-album* (White-letter Hairstreak) has been going for several year's and I'm happy to say we've not yet failed to find the target species.

Always a popular event, 2010 saw 24 attendees (members of London Natural History Society, Butterfly Conservation and the Amateur Entomologists Society), quite a challenge when trying to get everyone to see a small butterfly at the top of a tree.

We left Horsenden Farm and had early success in getting the target species with one found flying and perching at the top of the trees in a patch of elms (see Plate 1). There were at least ten White-letters on the walk (AC had earlier at least 16 on a pre-walk check of the site). We were also pleased to see at least five *Melanargia galathea* (Marbled White), still a fairly new species to this site, as well as the more usual butterflies and moths of the area

Thanks to Ealing Council's West Ranger team we were able to run two moth traps in Horsenden Farm the night before and keeping them in a 'cool box' allowed attendees to examine them after the walk. The list from these traps follows. None of these moths were particularly unusual although *Apamea unanimitis* (Small Clouded Brindle) was new to the site and the attractive *Laspeyria flexula* (Beautiful Hook-tip) always seems much more common at this site than in any of the nearby sites where DH and AC trap.

Actinic Heath Trap 15W

937 *Agapeta hamana* x 1

1032 *Aleimma loeflingiana* x 3

1247 *Grapholita funebrana* (Plum Fruit Moth) x 1

1293 *Chrysoteuchia culmella* (Garden Grass-veneer) x 7



- 1336 *Eudonia pallida* x 1
 2088 *Agrotis claris* (Heart and Club) x 1
 2089 *Agrotis exclamatoris* (Heart and Dart) x 7
 2102 *Ochropleura plecta* (Flame Shoulder) x 1
 2198 *Mythimna impura* (Smoky Wainscot) x 1
 2302 *Rusina ferruginea* (Brown Rustic) x 1
 2340 *Oligia fasciuncula* (Middle-barred Minor) x 1
 2331 *Apamea unanimitis* (Small Clouded Brindle) x 1
 2337x *Oligia strigilis* agg. (Marbled Minor agg.) x 1 125W MV Skinner Trap
 229 *Monopis obviella* x 1
 449 *Prays fraxinella* (Ash Bud Moth) x 1
 450 *Scythropia crataegella* (Hawthorn Moth) x 1
 533 *Coleophora amatipennella* (Pistol Case-bearer) x 1
 640 *Batia lunaris* x 1
 656 *Tachystola acroxantha* x 1
 970 *Pandemis cerasana* (Barred Fruit-tree Tortrix) x 1
 977 *Archips podana* (Large Fruit-tree Tortrix) x 8
 980 *Archips xylosteana* (Variegated Golden Tortrix) x 1
 998 *Epiphyas postvittana* (Light Brown Apple Moth) x 3
 1020 *Cnephasia stephensiana* (Grey Tortrix) x 2
 1024 *Cnephasia incertana* (Light Grey Tortrix) x 1
 1032 *Aleinma loeflingiana* x 15
 1033 *Tortrix viridana* (Green Oak Tortrix) x 21
 1036 *Acleris forsskaleana* x 4
 1082 *Hedya pruniana* (Plum Tortrix) x 1
 1083 *Hedya nubiferana* (Marbled Orchard Tortrix) x 1
 1168 *Gypsonoma sociana* x 1
 1261 *Cydia pomonella* (Codling Moth) x 1
 1293 *Chrysoteuchia culmella* (Garden Grass-veener) x 4
 1334 *Scoparia ambigualis*
 1334a *Scoparia basistrigalis* x 1
 1336 *Eudonia pallida* x 1
 1361 *Pyrausta aurata* x 1
 1474 *Epbestia parasitella* x 1
 1653 *Habrosyne pyritoides* (Buff Arches) x 15
 1667 *Comibaena bajularia* (Blotched Emerald) x 4
 1713 *Idaea aversata* ab. *remutata* (Riband Wave [non-banded form]) x 5
 1765 *Cidaria fulvata* (Barred Yellow) x 1
 1766 *Plemyria rubiginata* (Blue-bordered Carpet) x 1
 1773 *Electrophaes corylata* (Broken-barred Carpet) x 1
 1860 *Pasiphila rectangularata* (Green Pug) x 2
 1862 *Gymnoscelis rufifasciata* (Double-striped Pug) x 1
 1906 *Opisthograptis luteolata* (Brimstone Moth) x 3
 1937 *Peribatodes rhomboidaria* (Willow Beauty) x 6
 1941 *Alcis repandata* (Mottled Beauty) x 6
 1958 *Lomographa temerata* (Clouded Silver) x 7
 1981 *Laotboe populi* (Poplar Hawk-moth) x 1
 1994 *Phalera bucephala* (Buff-tip) x 1



- 2031 *Leucoma salicis* (White Satin) x 1
2050 *Eilema lurideola* (Common Footman) x 7
2060 *Spilosoma lubricipeda* (White Ermine) x 1
2061 *Spilosoma luteum* (Buff Ermine) x 1
2088 *Agrotis clavis* (Heart and Club) x 4
2089 *Agrotis exclamatoris* (Heart and Dart) x 69
2098 *Axylia putris* (Flame) x 4
2102 *Ochropleura plecta* (Flame Shoulder) x 7
2107 *Noctua pronuba* (Large Yellow Underwing) x 1
2120 *Diarsia mendica* (Ingrailed Clay) x 2
2126 *Xestia c-nigrum* (Setaceous Hebrew Character) x 5
2128 *Xestia triaugulum* (Double Square-spot) x 1
2160 *Lacanobia oleracea* (Bright-line Brown-eye) x 2
2198 *Mythimna impura* (Smoky Wainscot) x 1
2302 *Rusina ferruginea* (Brown Rustic) x 2
2321 *Apamea monoglypha* (Dark Arches) x 9
2322 *Apamea lithoxylaea* (Light Arches) x 1
2337 *Oligia strigilis* (Marbled Minor) x 1
2340 *Oligia fasciuncula* (Middle-barred Minor) x 3
2380 *Charanyca trigrammica* (Treble Lines) x 2
2381 *Hoplodrina alsines* (Uncertain) x 1
2384 *Hoplodrina ambigua* (Vine's Rustic) x 1
2389 *Paradrina clavipalpis* (Pale Mottled Willow) x 1
2423 *Nycteola reayana* (Oak Nycteoline) x 1
2473 *Laspeyria flexula* (Beautiful Hook-tip) x 6
2474 *Rivula sericealis* (Straw Dot) x 1
2477 *Hypena proboscidalis* (Snout) x 1
2489 *Zancloguatha tarsipennalis* (Fan-foot) x 2
2284x *Acronicta tridens/psi* (Grey Dagger / Dark Dagger) x 1
2337x agg. (Marbled Minor agg.) x 5

Perivale Wood for National Moth Night

National Moth Night is described as “the UK’s annual celebration of moths and moth recording.” The event was initiated by the Journal *Atropos* and it is now run jointly with Butterfly Conservation.

Moth recording in Perivale Wood (a nature reserve operated by the Selborne Society) goes back to the early-1960s (although neither AC nor DH was involved at that time, largely on account of not having yet been born). AC and DH have been trapping approximately monthly on this site since May 2004.

On 15th May (NMN) in 2010 we operated four different trap designs in Perivale Wood. A 15W actinic light Heath trap, a 125W MV light Skinner trap, a 125W MV light Robinson trap and a ‘Heath-Robinson’ 125W MV sheet trap (see Plate 3).



15th May proved to be a rather cool evening, not ideal for mothing particularly when you are running a public event and want to have a lot to show people. Indeed the actinic trap, kindly on loan from the London Natural History Society, failed to attract any moths at all but we persisted and caught adults of several species, a full list is below.

I also reared on a caterpillar of Yellow-line Quaker found on one of the oak trees (see Plate 2) to confirm the ID.

Dusking

- Alucita hexadactyla* (Twenty-plume Moth) x2
- Perizoma flavofasciata* (Sandy Carpet) x3
- Opisthograptis luteolata* (Brimstone Moth) x1
- Agrochola macilenta* (Yellow-line Quaker) x1 caterpillar

Lamp and Sheet

- Nematopogon swammerdamella* x2
- Parorthis devotiella* x1m
- Perizoma flavofasciata* (Sandy Carpet) x1
- Opisthograptis luteolata* (Brimstone Moth) x3

Robinson Trap

- Cyclophora punctaria* (Maiden's Blush) x1
- Pterostoma palpiua* (Pale Prominent) x1
- Orthosia gothica* (Hebrew Character) x1

Skinner Trap

- Esperia sulphurella* x1
- Syndemis musculana* x1
- Perizoma flavofasciata* (Sandy Carpet) x1
- Eupithecia abbreviata* (Brindled Pug) x1m
- Scoliopteryx libatrix* (Herald) x1

Acknowledgements

Thanks go to Rachel Terry for dissection and identification of several of the more tricky species.

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- <http://www.atropos.info/>
- <http://www.perivalewood.purplecloud.net/>



Lady Eleanor Glanville and the Butterfly Clap Net

by Pauline Loven

Orchard House Wardrobe, Loven Building West Central, Runcorn Road, Lincoln LN6 3QP.

Pauline Loven, <http://periodwardrobe.wordpress.com/>

Crow's Eye Productions, 2010 <http://www.crowseye.co.uk/index.htm>

We have just been filming some short sequences from the life of Eleanor Glanville, the first English woman lepidopterist (c. 1654–1709). It is an un-funded project, so we have been squeezing bits of filming in here and there. We suddenly realised that we were running out of summer and set up a shoot at a couple of days notice in a conserved meadow near us that is known for its butterflies, Chamber's Wood in Lincolnshire. With such short notice, there wasn't much time to find more out about the butterfly clap net which she may have used. I Googled the term and came up the Amateur Entomology web site and the excellent article on '*The Discovery of a Clap Net*' by Malcolm Simpson. We studied it and then worked on the basis that Eleanor would probably have improvised something at first, so we gathered some willow wands and popped the leaves off. This gave us two rods of just over a metre long. I then found some loose-woven cheese cloth from my fabric store which was a standard width of fabric for the period (around 90cm), and cut off 90cm. Keeping the selvage edge to the top and bottom, I rolled the cut edge around each rod and whip stitched it into place with a strong linen thread. The poles weren't smooth, but that helped to keep the cloth in position and stopped it just sliding back down the rods.





We knew that we were a bit late in the season, but there were some butterflies about still. We also knew that we would not find the Glanville Fritillary, which Eleanor had first captured in Lincolnshire, as it is now pretty well only found on the Isle of Wight. So we headed off to our location with camera, crew, our actress Tiffany Haynes in costume and the butterfly clap net. The weather was a bit variable, but the strong winds of the previous few days had died down. We saw Tortoiseshells and Red Admirals in the butterfly garden, a Speckled Wood and a pair of (Cabbage?) Whites on the way to the meadow, but only a sole Tortoiseshell in the meadow itself. We were not necessarily planning to use the clap net, but to have it there as a prop. However, on the way to the meadow, Tiffany immediately caught and then released, unharmed, a butterfly. The net was easy to use and the single butterfly in the meadow immediately became a star, being caught and released twice in a lovely filmed sequence.



One butterfly caught in the net.



Some food plant trials of the Lime Hawk Moth *Mimas tiliae* larvae (L.) (Lepidoptera: Sphingidae)

by Ronald N. Baxter (1267)

45 Chudleigh Crescent, Seven Kings, Ilford, Essex. IG3 9AT.

Early one morning in September 2008, I noticed a full-grown Lime Hawk moth larva, *Mimas tiliae*, L. walking along the side of a wall. Instead of it being bright green, it was dull purplish-grey, a 'semi', and was therefore searching for some soft earth in which to pupate. As there was nowhere where it could possibly find a suitable pupating site, being on the pavement and only a few feet away from the gutter, I picked it up and took it home. There I half filled a flower pot with soft earth and then placed the larva on the earth and covered the pot with a saucer. By evening it had burrowed.

It was a very strange place to find a Lime Hawk moth larva as there were no lime trees in the immediate area. The nearest lime tree was at least 50 metres across a busy road. The nearest tree, a metre from where I found it, was a street tree, *Pyrus calleryana*, a Chinese ornamental pear. I searched the branches for evidence of feeding, but could find none. But on the pavement beneath the tree was a considerable amount of frass which compared with that of the Lime Hawk moth larvae I was rearing at the time.

My immediate thought was why would a female moth oviposit on an ornamental street tree when there are numerous lime trees in the vicinity? Was *P. calleryana* a known food plant? Or was it an unknown one waiting to be discovered? I consulted my library to see if there were any records of it being a food plant:

Allan (1949) gives Lime, Common Elm, Alder, Birch and Hazel.

Kirby (1913) states: 'The caterpillar feeds on Lime'.

Kirby (ND) states: 'It feeds from June to October on Lime, Elm, Birch, Alder, Oak, Chestnut, Ash, and other trees, including fruit trees.'

Lucas (1895) gives a lengthy list of food plants namely Lime, Elm, Hazel, Oak, Ash, Birch, Alder and Sycamore.

Merrin (1875) gives Elm, Lime and Beech.

Meyrick (1895) simply states: 'on Lime and Elm.'

Newman (1869) simply states: 'it feeds on Elm trees and Lime trees.'

Newman and Leeds (1913) gives only Lime and Elm.

Newman (1965) states: 'feed principally on various species of Lime trees and Elm and occasionally caterpillars have been found on Birch.'



South (1907) states: 'although Alder, Birch and several other shrubs and trees have been mentioned, there is no doubt that the foliage of Elm and Lime is the chief food of the caterpillar in nature.'

Scorer (1913) gives only Elm and Lime as food plants.

Sokoloff (1984) gives English Elm and Wych Elm, Limes, Birch, Hazel, Alder and states: 'has also been reared on *Prunus padus*, Bird Cherry and Maples.

Stainton (1857) states: 'This larva feeds in August and September on Elm and Lime.

Tutt (1902) states: 'The caterpillar feeds on the leaves of Lime but more often on Elm.'

An analysis of the above provides a clear preference for Lime and Elm (having 14 and 13 mentions respectively). Alder (5), Birch (5), Hazel (3), Oak (2), Ash, Sycamore Cherry, Maple and Beech each have only one mention.

Although all the above authors mention lime and elm being the chief food plants, the remaining trees mentioned as food plants, have only a passing mention, and therefore are not recognised as natural food plants and larvae were possibly only found rarely on these. I cannot find any records of these trees being utilised for rearing larvae through to maturity.

My next search was within the volumes of *The Entomologist's Record*. My first success came with **67**: 241 in which H. Symes, living in Bournemouth found a full-fed larva crawling up a low brick wall under a large cherry tree. None of the usual trees on which this larva is found were anywhere near. The only trees within sight were laburnum, pear and horse chestnut. Under the circumstances, it seems extremely probable that the larva had been feeding on cherry.

Cherry as a food plant was only mentioned by Sokoloff, so Symes's assumption that his larva had been feeding on cherry was probably accurate.

P. A. Desmond Langtree, **72**: 187 quotes from a letter in the *Radio Times* for 22 August 1952 from Mr. George A. Hastin of Worthing who, in expressing his appreciation of the then recent nature programme, recalled how 'many years ago' he accidentally discovered a larva of *M.tiliae* feeding on cherry. Mr Hastin added that he had always thought this to be most unusual; for he had never seen nor heard it stated that cherry is one of the foodplants of that caterpillar.

Again, H. Symes, **73**: 184 while searching for larvae in the New Forest, found a larva of *M.tiliae* feeding on alder.



During June of 2010 I began some foodplant trials with *M. tiliae* larvae to ascertain which of the foodplants mentioned by the above authors would nourish larvae through to pupation.

For these trials, I selected 12 foodplants, namely, lime, elm, alder, birch, hazel, oak, ash, sycamore, cherry, maple, beech and Chinese pear.

Method

To begin the trials, twelve larva rearing boxes, size 70mm. x 30mm. were used for the first instar larvae. The bottom of each box was lined with paper and a sprig of leaves arranged in each box in such a way that the leaves would be in contact with the tops of the boxes. Twelve larvae were placed in each box on the 21 June 2010 and a daily record kept of their progress.

Next morning, 22 June, the larvae on lime had settled along the leaf veins and there was evidence of feeding. Elm: all larvae feeding and have increased in size. Hazel: all larvae feeding. Chinese pear: all larvae feeding. Birch: some larvae feeding. Alder: all larvae feeding. Larvae given oak, ash, sycamore, maple, chestnut and beech all died within two days without feeding. Without evidence, the suggestion of larvae feeding on these food plants is, in my opinion, purely speculative.

There now follows a report on the progress of the six remaining trials.

Lime: by 25 June all 12 larvae were feeding well and were undergoing their first moult. After their second moult, the larvae began growing at a very fast rate, no doubt due to the very warm weather prevailing at the time. By 2 July all 12 larvae had entered their third instar and were now sleeved on cut food. All larvae reached maturity by 15 July and had all pupated without any losses by the 23 July.

Elm: By the morning of 22 June it was evident that the larvae were feeding well by the amount of frass present. On close inspection, all larvae were resting along the ribs on the under side of the leaves, having almost doubled their size. By 25 June all 12 larvae were undergoing their first moult. On the morning of 28 June the larvae moulted. But two larvae failed to survive this stage, for no apparent reason. The remaining ten larvae grew so quickly that by the 4 July they ceased feeding prior to their second moult. On the 8 July, the larvae moulted once more. Now in their third instar, they were transferred to a sleeve to complete their growth. A further larva died



just after its third moult. The remaining nine larvae successfully pupated between 18 and 25 July.

Alder: At first, the larvae were reluctant to feed; it was not until the following morning that very slight feeding was evident. The 12 larvae were still surviving by 24 June, but still not progressing anywhere near the rate of the larvae reared on lime and elm. The next day, 25 June all 12 larvae suddenly began feeding in earnest and continued to do so for a further day before undergoing their first moult. The larvae continued to do well for the next four days when they prepared themselves for their second moult. By 1 July; all 12 larvae were thriving and growing steadily. It was not until 8 July that the larvae moulted again. Now in their third instar, I had to continue rearing them in containers, as the alder would not keep fresh in a sleeve and quickly dried-up. By the 16 July all 12 larvae were thriving but on the 20 July, one died. On the 27 July, the remaining 11 larvae began moulting again. By 29 July, all 11 larvae, now in their fourth instar, having moulted successfully, were consuming leaves at a greatly increased rate. On the 5 August the larvae moulted for the last time. Now in their fifth instar, the larvae continued feeding for a further six days, pupating between 12 and 14 August.

Birch: Of the 12 larvae started on birch on 21 June ten had died by the 24 June, leaving two larvae feeding. The two remaining larvae moulted for the first time on the 26 June. Four days later, one moulted for the second time but the other larva remained feeding slowly for a further three days. Although both larvae were growing very slowly, they remained healthy and entered their third moult on the 4 July. Both larvae progressed, albeit very slowly and finally pupated on the 25 and 26 of July.

Hazel: The twelve larvae were provided with leaves which I gathered from young bushes, and commenced feeding within a few hours. By morning, there was copious frass; the larvae having grown considerably overnight. They moulted on 24 June. Now in their second instar, they grew very quickly, consuming food at an extremely rapid rate, so much so, that on the 29 June the larvae ceased feeding in preparation for their second moult. The larvae moulted on the 2 July, and all 12 larvae were looking extremely healthy. They remained in the third instar for eight days and then underwent their third moult on the 10 July. All 12 larvae continued to feed well and remained healthy, being exceptionally large for this stage. The 12 larvae moulted for the final time between 18-20 July and remained in their fifth instar for a



further week, before one pupated on the 27 July; the remaining larvae quickly following.

Chinese pear: 12 larvae were provided with leaves of this tree which are very tough at this time of year and I had doubts whether the day-old larvae would survive. I need not have feared this however, for next morning all 12 larvae were feeding well. They continued to feed well for the next five days; ceasing feeding with the approach of their first moult. On the 28 June the larvae began their moult. By the 29 June, all 12 larvae had successfully moulted into their second instar. They recommenced feeding and were growing steadily, but slowly, and the distance between moults was lengthening. It was 11 days (8 August) before the larvae attained their third instar. It was while in this instar that the first loss occurred and I was beginning to have doubts about the suitability of the food plant. However, the 11 remaining larvae continued to feed very slowly. But despite this, all progressed to their fourth instar by the 16 August. Three days later, another larva died without showing any signs of sickness. The remaining ten larvae were quite healthy but were still feeding very slowly. It was ten days (26 August) before they attained their fifth instar and became fully fed. The first larva pupated on the 1 September and the last one on the 6 September.

Conclusion

Of the six food plants which were the basis of the trials, without a doubt, lime and elm are the natural food plants in the wild. They are readily accepted in captivity and progress far quicker than larvae reared on alder, birch, hazel, or Chinese pear. The larvae reared on lime and elm were 32-34 days in the larval stage.

Although larvae are seldom found on alder, I found alder to be an extremely good food plant. Despite being 42 days in the larval stage and alder not surviving in sleeves, alder is a very satisfactory food plant. My other problem with this food plant was that the only tree I knew of was just over two miles distant!

Birch was far from satisfactory. I am not at all convinced that birch can be considered a food plant in the true meaning. The two surviving larvae taking 36 days to pupation, is a very disappointing result. Especially since birch and alder both had five mentions each by the authors chosen for these trials.

Hazel proved to be another very satisfactory food plant. The leaves stay fresh for several days and the larvae are always feeding – which



was a good sign when rearing larvae. The growing rate was one of the shortest and all 12 larvae survived to pupation in just 37 days. It is surprising that Hazel, being a good substitute food is mentioned only by Allan, Lucas and Sokoloff.

Chinese pear was another substitute which proved successful. The growth rate was very slow; in fact this was the longest, 78 days to pupation on 6 September. On reflection, this was about the time when I found the larva on a September morning in 2008. Seventy eight days seems to be about the time that larvae feeding on Chinese pear take to reach maturity, either in the wild state or in captivity.

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Bowled over by local Crickets

by Barry Warrington

51 Buttfield Road, Hessle, East Yorkshire HU13 0AX.

Living in East Yorkshire, Crickets are insects which I wouldn't normally expect to see. However, back in August this year, I was to find not one but two species.

On a warm sunny day, I decided to pop down to some local wasteland which I visit on a regular basis, hoping to get some photos of the Brown Argus butterflies which are present there.

This land is along the Humber and used to be a small dock. It has not been touched for the past two decades. Therefore it is quite wild and overgrown, though it is also very diverse.

Whilst taking my usual route around the land, a Migrant Hawker Dragonfly *Aeshna mixta* took off a couple of feet ahead of me and darted back into the Sea Buckthorn bush where it came from. Creeping along the bush hoping to get a decent photograph of the Dragonfly, I noticed something at the top of the Buckthorn bush which was much greener than the leaves.

On closer inspection, I realised that it was in fact some kind of insect. As Orthoptera was an area which I wasn't familiar with at the time, I was not exactly sure what I had found. Getting a photograph of the insect was tricky, as I had to pull back some branches but as I did, it decided to head deeper in to the bush.

Luckily, I managed to get this semi decent shot before it disappeared completely. (see Plate 4)

Having emailed the photograph to a couple of people, they informed me it was a Great Green Bush Cricket *Tettigonia viridissima*, quite rare in my part of the country.

This was quite a find for me so I was very pleased with myself, even more so when the local newspaper decided to run an article on the finding.

However, this was just the start of an unbelievable couple of weeks.

A few days after the article in the newspaper, I was contacted by the journalist. He informed me that a reader had contacted him regarding the article and that the insect was actually a Sickle Bearing Bush Cricket *Phaneroptera* sp., a much rarer insect in the country let alone in my county.



Having been told this, I found it a bit hard to believe so I got back in touch with the guys who identified it as a Great Green Bush Cricket. On closer inspection, they both realised that it was in fact a Sickle Bearing Bush Cricket. They both stated that they took one look at the photo and thought it was a Great Green due to the apparent size – the Sickle Bearing Bush Cricket never came into their thoughts due to the rarity of that species.

With all this confusion, I contacted Dr Peter Sutton who kindly confirmed it to be a Sickle Bearing Bush Cricket, possibly the Southern Sickle Bearing Bush Cricket *Phaneroptera nana*. An unbelievable find for me, just a keen amateur naturalist.

A few days after this finding, I found another insect which I didn't recognise. After taking a few photos and asking around, I had found a Speckled Bush Cricket *Leptophyes punctatissima* – another Cricket which is very scarce in my county, with the only previous record dating back to 1925!

Having contacted entomologist Dr David Chesmore about the findings, we both visited the site to do a more thorough search.

Unfortunately, we were unable to locate the Sickle Bearing Bush Cricket but Dr Chesmore was extremely confident that the Speckled Bush were breeding at this site due to the numbers we found.

Realising how important this site could be, I decided to conduct further research into the site and it came to light that the land holds possibly the county's largest number of Bee Orchids.

With the help of Dr Chesmore, botanist Richard Middleton, John Killingbeck and Tony Martin of the Yorkshire Wildlife Trust (thanks guys), positive discussions with the local council are taking place with regards to protecting this land from any development.

I never thought that finding these cracking little insects would cause such a stir and hopefully lead to this little gem of a site been protected.

It just shows that you never know what's around the corner or where it will lead!



The Discovery

by John Woolmer

Fig Tree Cottage, Roecliffe Road, Cropston LE7 7HQ.

A few years before Queen Victoria ascended to the throne of England, William Thornton enjoyed a prolonged visit to Lord Netherbourne. He had been invited to help his lordship improve his backgammon skills. The current rate of his gambling losses was such that Holdrake Hall, with its extensive grounds just northeast of Oxford, would soon be up for sale. William had been hired to teach his lordship some basic skills especially in the use of the doubling cube which was usually his Waterloo. Far too often, he offered dubious doubles which were thrown back in his face and frequently he accepted doubles which had far less than the recommended one in four chance of success. William's wife, Cecilia, found these visits rather a trial. She was not admitted to the backgammon sessions and seldom allowed to walk with William who had other matters to interest him. Nevertheless, she managed to dine out by regaling her hosts with stories of the Netherbourne gold plate off which all their meals were taken.

William enjoyed his stay and earned himself extra remuneration by taking a few sovereigns off Lord Netherbourne while they played backgammon for what his lordship regarded as trivial stakes. William was careful not to win too often; he needed to give his pupil the illusion that he was improving.

The afternoons were always left free. His Lordship followed an extensive luncheon with a long siesta. This left William free to wander the grounds and pursue his other passion for butterflies. He thought that the grounds would house the elusive Purple Emperor and the Brown Hairstreak. He hoped to return later in the year to confirm his expectations.

One afternoon, he was particularly excited. He was idly glancing at some privet blossom when he noticed a couple of small dark butterflies flitting around them. He assumed that they were early White-letter Hairstreaks – elusive but not uncommon, insect. A quick flick of his net and one of the pair was apprehended. With trembling hands, he transferred his capture to a small containing box and thrust it into darkness to discourage it from flapping around and damaging its precious wings.

Back in his room, he released the doomed insect into his killing chamber – an elaborate contraption which housed a distillation of



cyanide. Two hours later, he got out his setting board and examined his capture. His expectations were exceeded. He had found an unusual variation of the White-letter Hairstreak! The ground colour was rather darker on the forewings, the red spots more extensive. The underside lacked the distinctive W marking, although the white spots could, by a stretch of the imagination, be said to form a rather flattened W.

William was intrigued. He had only one more day as his Lordship's guest. The next day, he excused himself from lunch on account of a fictitious stomach upset and returned to the privet bushes. He was rewarded with one more capture and a few sightings of his elusive insect. He was pleased to find that his second capture was very similar to the first. He set one with its forewings and one with its hindwings visible. The next morning, enriched with a fee of twenty guineas augmented by another ten from their actual playing, he took his leave and wished his Lordship better fortune at the gaming tables of the notorious Crockford's club in London.

Two days later, he was displaying his latest captures to local butterfly expert Algernon Chalmers-Smyth. Algernon arrived as a rather reluctant viewer, he left intrigued. He was unconvinced by William's nomenclature. The small butterflies did not look like any White-letter Hairstreaks that he had ever seen. He enquired where the captures had been made. After a slight pause, William said 'Flying around privet in some woods near Doncaster'. Algernon had never associated White-letter hairstreaks with privet and his suspicions that this was not the true location were soon confirmed. William's wife, Cecilia, never one to miss an opportunity, started waxing lyrical about the gold plate used for meals when they were staying at Holdrake Hall.

Algernon wrote to Lord Netherbourne and received an invitation to lunch. He quickly discovered that William Thornton had indeed stayed there last summer and spent most of the afternoons 'poking about in my woods looking for butterflies'. He told his Lordship, who seemed utterly disinterested, that he thought that a great entomological discovery had been made in his grounds

Algernon's thoughts about the butterflies were somewhat confirmed when he found the privet bushes - now well past their time of flowering. They were surrounded by hedgerows full of sloe bushes. There were no obvious Elm trees, the breeding plant of the White-letter Hairstreak, in the vicinity.

His Lordship's interested perked up when Algernon casually remarked that if we could take some specimens next summer we could



Plate 1 (above). White-letter Hairstreak in the treetops, Horsenden Hill.

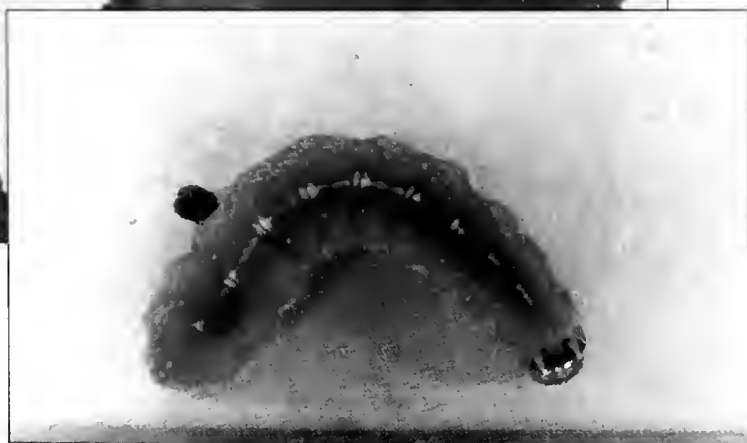


Plate 2 (right). Yellow-line Quaker caterpillar from oak, Perivale Wood.



Plate 3. 125W M.V. sheet trap, Perivale Wood.

Photographs: David Howden



From the article
"Bowled over by local Crickets"
Photographs: Barry Warrington

Plate 4. Mystery creature.

Plate 5. Male Speckled
Bush Cricket

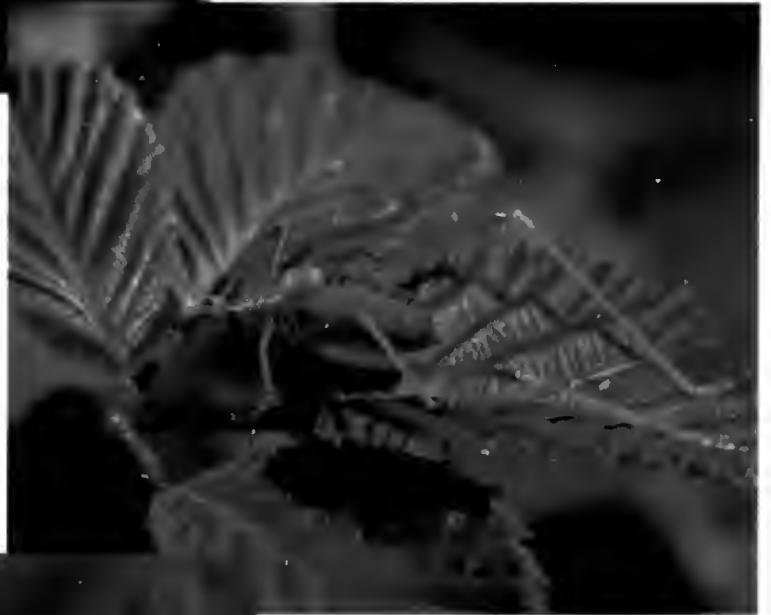


Plate 6. Female Speckled Bush Cricket



Plate 7 (above). *Hamadryas arete* and *Dioethria clymenta* feeding on dog excreta.



Plate 8 (right). *Dasyoptbalma crensa* at rest in forest interior.



Plate 9. The jumping spider *Psecas enoplus*



Plate 10. The fulgorid bug *Phenax variagata* at light.

Photographs: Stuart Cole



Plate 11. The dead leaf mimicking mantis *Acanthops falcata* male Photograph Stuart Cole



Plate 12. A male of the longhorn beetle *Pyrodes nitidis* Photograph Stuart Cole



Plate 13. *Strymonidia Pruni* the Black Hairstreak



Plate 14. *Strymonidia pruni* the Black Hairstreak Photographs supplied by John Woolmer



make a small fortune. He explained that the Black Hairstreak, the species that William had almost certainly found, was as yet unknown in England and would be much sought after by the many butterfly collectors who resided in rectories and other places of leisure. Lord Netherbourne's mind raced to his gambling debts and asked 'How much?' Algernon suggested that the first few specimens, of a new British species, might fetch over £200 and that later ones could probably fetch about £50. His Lordship whistled quietly. About two hundred butterflies could clear his current gaming debts. He invited Algernon to join him next summer.

Meanwhile Algernon wrote to his main contacts on the continent asking for information about *Strymonidia pruni* – the Black Hairstreak butterfly which, although never common, had been found in many parts of Europe. He discovered that they flew throughout June and sometimes in July in Europe and that the pupae were often quite conspicuous – often attached to the upper side of their food plant. He also received a drawing of the caterpillar which was quite similar to the ones he knew of the Brown Hairstreak and the White-letter Hairstreak.

Algernon arrived for a protracted visit on the first of June. He had taken the precaution of learning to play backgammon which was clearly one of the few sources of entertainment at Holdrake Hall. He made several unsuccessful forays amongst the sloe bushes. Chrysalises and caterpillars proved hard to find. On the third day, Lord Netherbourne decreed that a picnic should take place and suggested that they planted themselves near the privet bushes which formed a boundary to his woodland estate.

After an excellent lunch, still served on the gold plates, supervised by the head butler, Lord Netherbourne stretched out to sleep on a sedan chair which had been provided. Algernon sauntered into the woods. A ride covered with plenty of sloe bushes attracted his attention. A few minutes later, he was rewarded. A conspicuous black and white object was resting on a prominent sloe leaf. Examination with a lens confirmed that it was a butterfly pupa. He had found his first evidence of the existence of a Black Hairstreak! (see Plate 13)

A great entomologist was summoned. He arrived two days later and examined the pupa. He declared that the butterfly was about to emerge. Very wisely, he decreed that it should be surrounded with a cage of netting and taken indoors for safety. He agreed to authenticate the specimen, and any others that could be taken, as English. He also agreed that the locality should be concealed – he suggested that it should be said to have been taken in the North Midlands and that no



mention of the food plant should be made. They were only just in time, the very next day in the early hours of the morning, Lord Netherbourne, not particularly impressed, was shown his first Black Hairstreak. (See Plate 14)

Extensive hunting over the next few days netted another twenty butterflies. The entomological expert insisted on releasing the females to ensure that breeding stocks were maintained. Twelve pristine male specimens were available for the early nineteenth century collectors. Demand was enormous. Lord Netherbourne ended up some £3000 in credit and many unfulfilled orders had been obtained for next year's brood.

Rumours abounded as to the source of the colony. Rockingham Forest on the Northamptonshire – Rutland border was thought to be the site. It had one known rarity, the Chequered Skipper, amongst many other much sought-after species. Many man-hours were wasted searching the glades of the forest - not least by clerical gentlemen with little else to fill their time. The relative strength of the White-letter Hairstreak colonies in the forest caused much confusion and great disappointment. Many were netted and then – when they failed to materialise as members of the much-coveted new species – released, sometimes accompanied by a somewhat unclerical oath.

The entomological expert suggested that next May they searched, and if necessary beat, the sloe bushes to find the larvae. That way, they should increase their number of specimens without greatly damaging the size of the population. The expert was convinced that the very conspicuous chrysalises must suffer a dreadful mortality rate from birds.

Sloe bushes were, with great difficulty, dug up and transplanted to the best corners of the walled garden much to the disgust of the head gardener. These would house the precious caterpillars when they were harvested the next spring.

Lord Netherbourne had an unwelcome visit from William who demanded, as the first discoverer of the new insect, a decent fee. He was sent away with a small peace offering and the promise of a larger sum if he kept quiet about the true location of the colony.

The following spring a small party of searchers examined all the sloe bushes on and around the estate. Nothing was found. In the end, they were reduced to beating the bushes with white sheets underneath to catch any larvae. Moth larvae were abundant and a few Brown Hairstreak larvae appeared. Then at last, in the bushes nearest to



where the first sightings had been made, the unknown green larvae with pink dots along the upper ridge of its body were flushed out. They, unlike the rather similar, Brown Hairstreak larvae were gratefully harvested and placed on the sloe bushes in the kitchen garden. These were secured with netting – protection from marauding birds and denying them the chance to escape when they wandered off to pupate.

The biggest difficulty came in securing the valuable captives when the insects started to emerge. The captures were made in the early morning with several people surrounding the area with nets to track down any escapees. Males and females were sorted – this was quite difficult. But the female's bodies were distinctly fatter and the ground colour of their wings was discovered to be a little lighter. Most of the females were released around the privet bushes. A few were taken as very special premium exhibits for avaricious collectors.

The operation was so successful that Lord Netherbourne had cleared his debts and had acquired a small surplus. Inevitably, he made his way to Crockford's and started to play backgammon with his nemesis the Marquis of Huntingdon. For a while, he was quite successful. Then he started to lose and, as was his wont, declined to run and cut his losses. A desperate game ensued. Fortunes fluctuated and the doubling cube was used four times which meant that the stakes were now sixteen times the original and stood at a massive £8000. The game reached its climax. The fifteen men were back home and being thrown off the board. His Lordship was ahead. He had two men to get off to his opponent's eight. Victory was virtually certain. The Marquis threw a double five and removed four of his eight men. Lord Netherborne threw a miserable three and one which only removed one of his two men. The marquis followed with a double six. He triumphantly removed his last four men. Lord Netherborne was facing bankruptcy. No amount of Black Hairstreak butterflies could save his estate.

The Marquis of Huntingdon was pleased to acquire the estate. He loved hunting and he thought that there were plenty of deer in and around the estate. As soon as he moved in, he demanded that the woodland be opened up to make for a better sporting contest. This involved the destruction of almost all the ancient, and apparently useless, blackthorn. The butterfly population was eliminated in one orgy of destruction. The hunting was excellent.

In the following spring, Algernon suggested to Lord Netherbourne that he took a house in the nearby village of Stanton St John. They



could hunt for specimens in nearby Bernwood Forest. After the destruction wrought by the Marquis, they could still offer the only known specimens. Unfortunately, Algernon was taken seriously ill and very little searching of Bernwood was accomplished. Worse was to follow. News leaked out that a huge colony of the new butterfly had been found in Monkswood. The butterfly market was flooded and all hope of salvaging his Lordship's finances had to be abandoned.

One consequence of the Monkswood discovery was that flourishing colonies of the Black Hairstreak on the edge of Lord Netherbourne's old estate in Bernwood and Waterperry lay undiscovered for the next ninety years. Eventually, at the end of the First World War, a schoolboy found them. Entomological experts at Oxford University were reluctant to ride out to Bernwood but eventually made a trip to Hell coppice and were rewarded with many sightings. Meanwhile, Lord Netherbourne's descendants lived in relative poverty totally unaware of how nearly their heritage had been saved by the discovery of *Strymonidia pruni*.



The AES has its own village in the north of Spain!

by David Keen (3309L)

Casto Bancalero 11, 41650 El Saucejo, Sevilla, Spain

Anyone taking the main N-623 road north from Burgos to Santander will pass through the little village of Aes which is situated where there is a junction on the left to Los Corrales de Buelna. Do not blink as you drive through, otherwise you will miss it! The village sign does, of course, read "AES" which I have to say came as a bit of a shock when I first saw it on the way north in 2007. I was ready for it in June last year and it reminded me of the Society.



Nematode worm found in a shrub

by Chris Poulton

Market Harborough

I know this article does not concern an insect but readers may still find it interesting.

On a sunny afternoon in June this year I looked out of my kitchen window and noticed what looked like a plant tendril waving around in the leaves of a jasmine shrub – a metre above ground level. It caught my attention because its movement was so out of the ordinary and I continued to watch it for a few seconds, after which I realised it was an animal of some kind and I went outside for a closer look. I watched it waving around and continuing to climb up the bush, and then decided to collect it in a dish to take indoors.

The worm was white, about twelve centimetres long and one millimetre thick, with no visible mouthparts or markings. I concluded that it must have been a parasitic nematode worm that had been ejected from the gut of a bird and happened to land in the bush, a rare find indeed.

Having a zoological education I realised that this unusual find probably merited reporting so I took it along to the Holly Hayes Ecological Centre in Leicester, the nearest scientific establishment that would be interested. There it was inspected by staff and an unsuccessful attempt made to identify it. The worm was fascinating to watch as it flowed around the perimeter of its dish in a graceful series of spirals and whorls. Despite its modest size, and clearly posing no threat to its observers, none of us had the slightest wish to touch it, lest it should somehow burrow its way into our flesh!

Eventually I was advised to send it to the Natural History Museum in London for identification but the worm was clearly stressed by its captivity and died on the journey home. All that could be done was to take a photograph and email that to the NHM but by the time I got home the worm had been dead for two hours and had rapidly shrunk to a meagre five centimetres and turned dark brown. In this state it bore no resemblance to anything living and I sent the email expecting very little in return.

After a few days a reply did come from London. Dr Eileen Turner had used my description of its lifestyle to identify the worm as *Mermis nigrescens*. This parasitic nematode that emerges from the soil after rain and climbs into bushes to lay its eggs. The eggs are eaten by



earwigs and grasshoppers and the hatched larvae remain inside their hosts until fully grown. They then burst out of the body cavity and burrow into the soil, where they remain for up to two years. The cycle is then repeated.

All in all this was quite an eye opener as I had no idea that parasitic worms would ever choose to climb into a bush in the open air.

There are some very good photographs available on the internet of the adult worm, and also some articles on its lifestyle and motility. Well worth a look!



Common Green Grasshopper *Omocestus viridulus* update

by E. C. M. Haes

6 Hatch's Hill, Angarrack Hayle, TR27 5HY

Email contact cneil@spaldingassociates.co.uk

With reference of John Burton's note about the Common Green Grasshopper *Omocestus viridulus* on Page 138 of the *Bulletin* vol 69, I can confirm that in 1978 (my final visit to this area) the grasshopper was numerous all the way by the path from Killin to the very summit of Ben Lawers and nearby Meall nan Tarmachan. My search was restricted at that summit by an actively guarded nest of a Peregrine Falcon *Falco peregrinus* which I naturally did not wish to disturb further. In all I listed 13 sites for the grasshopper at over 3000 feet altitude across Scotland from 1958 – 1978.

Reference

Burton, J. F. (2010). Altitudinal limites of the Common Green Grasshopper *Omocestus viridulus* (L.) (Orthoptera: Acrididae) in Britain. *The Bulletin of the Amateur Entomologists' Society*, **69**(491): 137-138.



Insects in the Atlantic Rain Forest of Brazil

by Stuart Cole (10159)

21 Wensleydale Gardens, Hampton, Middlesex, TW12 2LU

stuart.cole@blueyonder.co.uk

The Atlantic rain forest (Mata Atlantica) of eastern South America is one of the world hotspots of biodiversity. It once stretched 1,700 kilometres along the east coast of Brazil and reaching inland to parts of Argentina and Paraguay. It is now much diminished with as little as 8% of the forest surviving and, from what I saw of it, much of that is probably secondary forest. That so little remains is not surprising since Brazil's largest cities, Sao Paulo and Rio de Janeiro, lie within the Mata Atlantica region and this is amongst the earliest parts of South America to be colonised by Europeans.

The Serra do Mar of south east Brazil, is, as the name implies, a range bordering the ocean and lies within the Mata Atlantica. My wife and I stayed for week at the Serra dos Tucanos lodge in the hills about 10 kilometres from the small town of Cachoeras de Macaco, around 70 kilometres from Rio de Janeiro. It is set in a clearing in a valley bounded by rain forest covered slopes. The lodge is situated at around 400 metres altitude and the surrounding peaks reach about 1,400m altitude. The land attached to the lodge was once a plantation that was abandoned and has reverted to forest. The plantation crop was primarily bananas and banana plants (native to Asia) still grow intermittently in the secondary forest.

The forest of the lower slopes of the valley is fairly typical lowland-type tropical rain forest but its elevation results in a greater abundance of epiphytic plants and ferns. Epiphytes festoon trees in profusion; bromeliads being the dominant family with ferns and cacti also prominent. Some bromeliads, including *Aechmea* and *Vriesea* spp. were displaying pink or orange inflorescences at this time and were recognisable as species commonly sold in garden centres in Britain.

Although the forest swarmed with insects in great variety, other animals, apart from birds, were rather scarce, especially mammals of which I saw none other than the bats that lived in the roof above our room and whose scrabbling noises often woke us at night. The scarcity of mammals is due to heavy poaching in the past. The lodge, catering primarily to birdwatchers, was established in 2002. The protection now offered in its 50 acres of grounds is encouraging mammals to slowly move back into the area. Since we were there several kinds of small



mammals have been sighted including the rare Atlantic forest endemic Golden Lion Tamarin.

Birds at the feeders included an assortment of tanagers and hummingbirds outstanding amongst which were the scarlet Brazilian Tanager and the shimmering green Violet-capped Woodnymph, both endemic to the Atlantic forest. I was disappointed not to see any toucans, only the much smaller and less colourful Spot-billed Toucanet, a family of which were regular visitors to the bird tables.

The clearing formed by the lodge garden attracted many of the butterflies of the forest and gave us the best views of the morphos. In the forest surrounding the lodge there were at least three or four species of these magnificent insects. Two were frequently seen both in the forest interior and around the lodge: the blue and black *Morpho achillaena* and the white *M. epistrophus*. In *M. achillaena* most of the wings are iridescent blue which is enclosed in a broad black border decorated with a row of white spots. It was the only species that I saw settled on the ground or on low vegetation; in one instance the insect appeared to be drinking water on a fern leaf. A third species, that I believe was *M. menelaus*, was seen only three times and was certainly the most spectacular. In this almost the entire wing is of shimmering iridescent blue, giving amethyst reflections at certain angles. There is a narrow black border and the span of the wings is five to six inches. I think I spotted a fourth species in nearby forest and, as there are 11 kinds of morpho in the Atlantic forest of SE Brazil, it is quite likely. When resting in trees the morphos hold the wings together so that only the under surface is seen; in the blue species this is dark brown decorated with white rings or eyespots and renders them inconspicuous. However, when feeding on the ground, eg on ripe fruit or liquid, they open the wings briefly from time to time thereby advertising their presence.

The genus *Morpho* contains more than 70 species and ranges widely across South and Central America and one (*M. polyphemus*) strays, rarely, into Arizona in the USA. The wings of a blue Morpho flash like a light as the insect flies around a forest clearing. The intensity of the iridescence on their wings is created by the intricate, multilayered, sculpturing of the upper surface of the scales and makes an individual insect visible from a great distance, up to half a mile away in *M. rhetenor*. It is assumed that this is to enable them to find each other for mating. The iridescence of the morpho wing has been a subject of study since the 19th century but it was not until the invention of the electron microscope that it was possible to properly see the complex



structures that cause the effect. The nymphalid subfamily *Morphinae* is not confined to the Neotropics, as I had supposed, it is also well represented in tropical Asia where they too are insects of the forest and some have iridescent scales on the upper surface of the wings but these are muted compared to those of the New World morphos.

The owl butterflies (*Caligo* spp.) are perhaps as celebrated as the morphos but here I saw just one individual. This was *Caligo eurilochus braziliensis* that was perched in characteristic fashion with wings folded on the stem of a shrub in the forest interior. This exposes the large eyespots that give them their popular name. The upperside of the wings in this species have a large area of dull blue. Another species of the same subfamily *Brassolinae* was *Dasyophthalma creusa* (Plate 8) found resting on the stem of a shrub in the same manner as *Caligo* and like the owl butterflies has conspicuous eyespots though not as large.

Another genus of particularly handsome butterflies here was *Hamadryas*. Two species, *Hamadryas arete* (Plate 7) and *H. amphinome*, were attracted to dog excrement. The body and wings of both are dark blue scattered over with pale blue markings. They belong to the nymphalid subfamily *Bibliinae* of which another member, *Diaethria clymena*, was also found seen feeding on excrement. This is one of the distinctive group of smallish neotropical butterflies that have boldly marked undersides to the wings, characteristically, spots contained within concentric circles. The related *Callicore hydaspes* often lingered around the lodge swimming pool where it liked to imbibe water washed onto the edge.

Some weedy composites grew in shallow water at the edge of the clearing and bumble bees (*Bombus* spp.) were almost always present at the flowers. The majority were of a species that was pale buff with a dark band across the abdomen. Another kind, of which a very few were seen, was the all black *Bombus atratus*. Being essentially temperate climate insects with their major centre of diversity in western China, there are few bumble bee species in tropical South America and in south-east Brazil there are just three or four. The Andean region on the west side of the continent is richer. One other large furry bee present in the garden was the Orchid Bee (*Eulaema meriana*). Small bees of the *Meliponinae* were the most frequent of the social bees.

Two kinds of ants I was sure of finding in the forests were the leafcutters (*Atta*) and the army ants (*Eciton*). One or more *Atta* species were commonly seen in worker parties carrying leaf sections and also quite often lone individuals of the big headed, large jawed, soldier



caste wandering on the ground. Disappointingly, no columns of army ants were encountered here or at any other locality in the Serra do Mar. One or more *Eciton* species was certainly present in the vicinity of the lodge since winged males were found under lights each morning.

The lights at the lodge were left on all night and attracted a good variety of insects, although no one single species in large numbers. A very large and rather handsome Ornate Forest Toad (*Rhinella ornata*) made its home among the plant pots beneath a lamp on the front steps and enjoyed a nightly feast with little effort. A few spiders also took advantage; one particularly colourful species prowling the walls was the salticid *Psecas euoplus* (Plate 9) decorated with bands of scarlet and iridescent green or blue scales.

Bush-crickets were notably prominent among the insects; in fact, bush-crickets and also forest cockroaches were present in a greater variety than I have seen anywhere else. The most common bush-crickets were the large all-green members of the genus *Stilpnochloa* the males of which made short sharp creaking calls intermittently through the night. The most attractive of the bush-crickets was *Hyperphrona coerulescens* which is pale green with a row of turquoise spots on the fore wings. Among the cockroaches were green *Panchlora* spp.

Most of the moths at light were *Noctuidae* and *Saturniidae* – there were very few micros. Of the saturniids I recognised only one, *Copaxa decrescens*, as a member of that family as it looks like an emperor moth. All the other species were of the subfamilies *Ceratocampinae* (*Othorene*, *Citioica* and *Adeloneivaia* spp.) and *Hemileucinae* (*Oxytenis* spp.) some of which are more reminiscent of lasiocampids. Noctuids included *Ramphia albizona* (*Catocalinae*) and several species of *Letis* (*Ophiderinae*). Three hawk moths, *Unzela japiix*, *Xylophanes anubus* and *Manduca hannibel* were the few other larger moths at light.

The big fulgorid bug *Phenax variagata* (Plate 10) was one of the *Hemiptera* at light. It has large whitish wings; the fore wings are almost entirely covered by fine black barring while the hind wings have the faint suggestion of an eye-spot. The body is covered with a white waxy material that extends behind the insect into long delicate filaments. The single specimen had already lost most of these filaments when I found it in the morning and the rest fell away when handled. When the insect was placed on a lichen covered tree trunk it was rendered inconspicuous when the intricately marked forewings were



folded over the body. An even better lichen-mimicking insect was the sole phasmid found, a male *Prisopus sacratus* rescued from the swimming pool. When this was placed on pale green foliose lichens on a tree it was very hard to detect unless you knew where it was. Another accomplished mimic was a male of the mantis *Acanthops falcata* (*Acanthopidae*) (Plate 11) which resembled a dead leaf among the forest litter.

One rather spectacular fly that often came to light was the big tabanid *Fidena rufobirta*, a thickset insect about an inch long with a very long straight proboscis. The hairy body was black for the most part turning to red at the tip of the abdomen. The species belongs to the subfamily *Pangoniinae*, the nominate genus of which occurs in the Mediterranean region. Another conspicuous fly found at light was *Rhaphiocera armata*, an elongate stratiomyid which is black with bright pale blue markings.

An assortment of beetle families were represented at the light, particularly *Carabidae*, *Scarabaeidae*, *Coccinellidae* and *Cerambycidae*. A couple of unusual looking carabids were *Physeia setosa* of the *Paussinae* and *Agra cancellata* of the tribe *Lebiini*. The latter is one of a numerous genus of arboreal carabids characterised by their attenuated form. The coccinellids were all of one very familiar species: the Harlequin Ladybird (*Harmonia axyridis*). This east Asian invader has even penetrated the South American rainforest, albeit this locality is not very remote from a heavily populated city.

The finest of the beetles that I saw in the Serra do Mar was the Diamond Weevil (*Entimus imperialis*) a very well known South American insect. It is noted for the rows of shining green spots along the black elytra but it is only when these are viewed through a microscope that the full beauty and the cause of the jewel-like effect can be appreciated. Each spot is a pore occupied by circular arrangement of tiny iridescent scales most of them reflecting green and one or two in the bottom of the pore reflects blue and each pore really does glitter like a fine cut gemstone. The species is very variable in size, the specimen found dead on a track, was 2.5 cms long. Another particularly handsome beetle was a male of the longhorn *Pyrodes nitidus* (Plate 12) that was also dead when found, in this case drowned in water cupped within the leaves of a large terrestrial bromeliad. It was dark metallic green edged with bronze and with bronze appendages, and looked like an item of jewellery fashioned from burnished metal. The female of this species, unusually, is more brightly coloured than the male.



Our stay at the Serra dos Tucanos was, despite the insects, something of a disappointment due to the paucity of vertebrates. However, since then the protection offered by this small reserve has encouraged the slow return of mammals and an increasing variety of birds and it would well worth a return visit. It is also easily accessible from the spectacular city of Rio de Janeiro, which itself, offers much of natural history interest.

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***Argynnis paphia*, the Silver-Washed Fritillary**

by Anthony Crawforth (9510)

A fine male specimen of silver washed fritillary was seen in Gerrards Cross on buddleia at 10:15 am on this sunny morning of 24th July 2010. I called to my wife who came to see it then went indoors to get a camera and, of course, it flew off disappearing down the railway embankment opposite.

This is the first time I have seen this butterfly in Gerrards Cross although there are woods nearby where it can occasionally be seen. At a moment in time when there is general concern about the plight of our butterflies I thought this was an interesting observation. Present also were a few other butterflies namely; *Pieris brassicae*, *P. rapae*, *Vanessa atalanta*, *Polygonia c-album*, and *Inachis io*.



Barbara Mulligan's Spanish butterflies

by David Keen (3309L)

Casto Bancalero 11, 41650 El Saucejo, Sevilla, Spain

As regular readers of the *Bulletin* will know, I have written several articles about the butterflies I have encountered during the winter in this part of Spain. Thus, I was very interested to read about Barbara's observations in her article in the August 2010 issue. Torrevieja is roughly north east of our village but, whereas it is on the Mediterranean coast, we are well inland. It is in the Spanish region of Murcia whereas we are in the Region of Andalucia. Also, of course, our village is surrounded by countryside which is covered, in the main, with olive trees – millions of them! We do not have anything like Barbara's "walkway by the sea". Thus, it is not surprising that Barbara has seen some species during the winter months that I have not come across.

I will take these different species in the order in which they appear in her article as I would like to comment on these records. The Monarch, *Danaus plexippus*, is a butterfly that I have not seen over here in Spain. According to Diaz (see references below) there are established colonies in the costal areas of Andalucia but it appears that the small colony near the city of Sevilla is in decline. However, as this is a well known migrant it is possible that individuals will fly north from the coast and inland colonies could be established again in the future.

The Green-veined White *Artogeia napi*, is another species that I cannot find in this area. From what Diaz has to say I fear that I am too far inland and to the east as, as far as Andalucia is concerned, it is found near the sea in the Provinces of Huelva and Sevilla. Also, as a matter of interest, Diaz refers to only two generations, with the adults flying in the Spring (April/May) and the summer. Thus it would seem that Barbara's February records are very early – please let us know if you see this species in February in future years.

The Geranium Bronze *Cacyreus marshalli*, is very occasionally seen here in November but not again until the middle of April at the earliest. No doubt the climate around Torrevieja is more conducive to this species and I also venture to suggest that perhaps there are more cultivated geranium plants there than we have in and around our village.

I hope that Barbara will continue to make her observations and will write them up for the *Bulletin* in the future. Keep an eye open for the



Bath White *Pontia daplidice*, the Green-striped White *Euchloe belemia*, and the Long-tailed Blue *Lampides boeticus*, as these are very common here.

Members might also be interested to hear from me about the moths that Barbara has mentioned. I am writing this article in mid-October 2010 and have to say that the Crimson Speckled *Utetheisa pulchella*, has been the commonest species in my MV trap this month. It is also found in November in most years both at light and during the day where it rests on walls etc. I have a few records for the Silver-striped Hawk *Hippotion celerio*, but never during the winter months. Larvae have also been found on our grapevine in the autumn in previous years – but not in 2010.

The Oak Eggar *Lasiocampa quercus*, according to Diaz is established between the east of the province of Cordoba and the province of Granada which is quite a bit to the northeast of here. There is also a record of a larva being found in the mountain range near Malaga but I have yet to find any trace of this species in our village.

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Photo Corner



A mating pair of Forest Bugs *Pentatoma rufipes*. Tyrol, Austria, August 2010.

Photograph:
Eleanor Wilkins



Size matters

by Geoff Trevis (7049)

In recent years conservationists have moved away from the concept of isolated nature reserves for the preservation of a habitat or species and moved to the idea of landscape scale conservation. Here landscapes will be managed to provide “permeability” for species to move through as they adapt to climate change and to support linked metapopulations of vulnerable species. This does not rule out establishing nature reserves but generally any reserves which are established will ideally have to be large and within designated landscape conservation areas. However, it is all too easy to lose sight of the small scale micro-habitats necessary for many invertebrates.

Recently, I have been involved in surveying an area of Worcestershire for the rare mining bee *Eucera longicornis* which had been found and photographed a couple of years ago. I have to say that so far I have not found the bee but searches for likely nesting sites have, eventually, proved highly promising and no doubt the survey will be continued next year. For the first few weeks I was working over fields close to the original site at which the bee had been found. These were largely sheep grazed pasture which, whilst moderately flower rich, did not seem to offer much for a breeding population of *E. longicornis*.

However, I found one small feature of interest. In a dip in the ground, which may originally have been formed by agricultural vehicle tracks, there was a small land slip which produced a vertical bank some 15-20 cm high and three metres long. Nest holes of mining bees were clearly evident and a couple of mud tubes made by potter wasps could also be seen. I stopped for no more than about ten minutes on a couple of occasions in early June and again in late June. My list of aculeates from so short a period of observation included *Andrena labialis*, *A. fucata*, *A. cineraria*, *Odynerus spinipes* and its cleptoparasite *Pseudospinolia neglecta*, *Nomada fucata*, *N. flavoguttata*, *Sphecodes rubicundus* (Nationally scarce Na), *Crossocerus ovalis* and the ant *Formica fusca*.

It brought home to me the importance of these small, apparently almost insignificant, features of the landscape and I have since been looking out for more examples. I have found them in several places where they have been supporting populations of aculeate hymenoptera. It is clearly important that such features are taken into account and preserved when large areas are being assessed and managed for invertebrate conservation. Size matters!



Of Garden Darts and Wild Tigers

by Rob Partridge, 8956

11 New Road, Mepal, Ely, Cambridgeshire CB6 2AP.

Some time ago – well, years actually – I decided that it would be a good thing to put all of my moth records onto one of the excellent databases that are now available to us. It isn't the most interesting activity, to be honest, but I'm sure that one day someone will ask me just the right question and I will be able to say 'Just one moment!', tap a few keys and there will be the answer. So I struggle manfully on with the task in the winter evenings, an hour here, a half an hour there...

I got up to 1996 last week. It was a good year in the garden with several new species arriving to the Robinson trap which is invariably left out overnight. For example, on the 12th of August I took my only specimen so far of The Butterbur, *Hydraecia petasitis*, a Marbled Clover, *Heliothis virescens*, – a few over twenty years – a Twin-spotted Wainscot, *Archanara geminipuncta*, and a Plain Pug, *Eupithecia simpliciata*, both very infrequent visitors. And six Garden Darts, *Euxoa nigricans*. Six. Looking back now, from 2010, that last record seems as remarkable as any of the others, though at the time it was not even noticed, just written down with the other fifty species of macro caught that night. When the database is finished, I will be able to type in 'Garden Dart' and see the last time I caught one – but I already know that it will be some years ago now.

In his *British Moths*, published in 1902, J W Tutt wrote of the Garden Dart "It sometimes occurs in thousands in the market gardens around London" and "It has abounded in every locality in which I have collected." My copy of South's *The Moths of the British Isles* is the 1961 edition; he states that this moth is "to be found in most English counties, but perhaps most commonly in the eastern." He notes too the very wide range of foodplants – of which, more later. I'm still using the first edition, 1984, of Bernard Skinner's *Moths of the British Isles* in which our moth's status has declined a little to "generally distributed most of the British Isles." Skinner also tells us "Overwinters as an egg" which was implied but never stated by previous authors. Things seem to improve a little with Waring and Townsend's *Field Guide to the Moths of Great Britain and Ireland*, 2003, in which the Garden Dart is described as "common".

I suppose part of the problem is that all these words have relative meanings – "common" will mean different things to different people.



The Garden Dart was common as far as I was concerned here in my garden in the mid 1990s; by any normal definition of the word, it is now a rarity here. If I never see another one, and there is no guarantee that I will, I suppose that it will have become technically extinct in my garden. I turned to Butterfly Conservation's *The State of Britain's Larger Moths* for some more recent and more solid data for the period 1968-2002. This is a beautifully produced and utterly alarming document for anyone who is fascinated by moths. It is full of horror stories but we need go no further than our old friend, the Garden Dart. Over the period of 35 years it has declined by 97%. I'm not very good with figures, and I have to find ways of making them sink in – so, where there were a hundred Garden Darts in 1968, there are now three. Or rather, there were in 2002; there might be only one by now. Or none, as seems to be the case in my garden. Almost incredibly to anyone who has been recording for more than twenty years, this moth is now red-listed, and, according to the IUCN criteria, endangered.

The last mentioned publication does put forward some possible explanations for why two thirds of our commoner moths, 226 species, show significant declines; and remember that this does not include the moths which were already considered scarce or rare. So what has the Garden Dart been doing wrong and how can he help himself in the future? It seems that his first mistake has been to overwinter as an egg; the graphs clearly show that this is the very worst way for a moth to try and get through the British winter. And it isn't because the winters have been too hard but quite the opposite; something about mild, wet, windy winters doesn't suit the eggs of our moths, it seems. If he cannot switch to overwintering as an adult, he should at least try to hatch out in the autumn and get through as a caterpillar.

As far as foodplants are concerned, *E. nigricans* probably thought he had at least made the right choice there, but no. The problem is that low-growing plants are low-growing plants, however many species of them you are prepared to eat, and moths specializing on low-growing plants all declined on average. It doesn't seem possible, does it? You are prepared to eat virtually any weed that grows and still you decline. His best plan, if he can stomach the thought, is to switch to something coniferous.

And he must move home because any way that you divide the country up, he is in the wrong part of it. Draw the line east to west, the moths to the south of it are faring the worst, and that's where our friend was always most abundant. Draw the line north to south, he is the wrong place again, to the east of it – remember those teeming



market gardens? It's just another irony, isn't it? In the heyday of our moths and their collectors, the place to be was the south-east of England, with its lanes and meadows and woods, its downs and seaside marshes, and now the best thing most of those moths that remain could do would be to head north-west.

Except, of course, that they cannot. Whatever it is we are doing to them, they must stay where they are and see it through or fail in the attempt. I probably would not have written this if it were not for the news about tigers this week. President Putin has organized a meeting of all the countries that still have tigers left in the wild. It is being seen as the last hope, the very last, for saving that amazing animal from extinction. At the beginning of the last century, there were thought to be at least a hundred thousand tigers – now there are no more than three thousand. That's a decline of ninety seven per cent.

Just like the Garden Dart.

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Photo Corner



Silver-washed Fritillary
Argynnis paphia. Tyrol,
Austria, August 2010.

Photograph:
Eleanor Wilkins



Book Reviews

Big Bugs Life-size

by George Beccaloni. 2010. Natural History Museum, London. 84pp. ISBN 978-0-565-09213-9. Price £9.99.

One of the benefits of children is that they allow adults to indulge in activities that they might otherwise find mildly embarrassing if pursued by themselves. Visiting a theme park such as Alton Towers, or playing Laser Tag, could fall into this category, as might going to see the Big Bugs exhibition at the Natural History Museum in Tring.

As its name suggests the Tring exhibition, which ran until 21st November, featured a number of large invertebrates, many of which are included in this glossy book by George Beccaloni, the curator of Orthoptera at the Natural History Museum in London. The book closely complements the exhibition, and whatever its scientific merit the Museum clearly also has a keen eye on the commercial possibilities.

One might have imagined that professional entomologists have a shrewd idea which are the largest species in each Order of insects. George has spent three years contacting 70 taxonomic experts across the world to check the facts, and the resulting volume, it is claimed, establishes for the first time which of the world's species are the longest and heaviest 'bugs', and which have the greatest wingspan.

Big Bugs Life-size is a veritable 'Guinness Book of Records' of the insect (and myriapod and arachnid) world, with life-size illustrations of each of the 35 record holders along with a summary of their biology, ecology and distribution. Each species is afforded two pages, and further information and relevant references are provided at the back of the book. The publisher states that much of this information has not been compiled previously, and that some of the species portrayed are so rare that few museums have specimens.

I'm not too certain what to make of the insight that the world's largest millipede is as long as a strand of spaghetti (how long is a strand of spaghetti? Presumably as long as a Giant African millipede...) and it must be said that some of the species included are 'old friends', such as the stick insect *Heteropteryx dilatata*, the Jungle Nymph (referred to here as the Giant Jungle Nymph). There is inevitably a certain amount of hyperbole surrounding this kind of book, so to gauge its perspicacity I turned to the section on moths, about which I am arguably less ignorant than about other Orders. I learnt that the



world's heaviest moth is the Giant (there's that word again) Wood Moth, *Endoxyla cinereus*, whose larva has been known to tip the scales at more than 31g (11/16 oz). This figure seems rather vague given that the heaviest adult female of this species ever recorded – the heaviest of all the adult Lepidoptera – also weighed 31.2g (11/16 oz), and that 'the caterpillars always weigh considerably more than the adults'. The moth with the greatest wingspan is said to be the south American *Thysania Agrippina*, or White Witch Moth, with a wingspan of just over 12 inches (308 mm) – a giant in all but name.

Despite the hyperbole, this is a generally well produced children's book which should be fun for all ages to browse through on a wet afternoon. The life-size photographs of the specimens create some interest, and the biological information can be engaging, and suitably gruesome. 'When hunting, the Giant Vinegaroon moves slowly...'

Sid the Stick Insect – Encounters with other wild animals in Africa

by Dr Ross Gordon Cooper. Lulu Publishing, 2009. 50pp. ISBN 978-1-4092-8936-4. Paperback £11.84 exc. p&p. May be purchased from the publisher (www.lulu.com) or downloaded for £3.56. A catalogue record of this book is available from the British Library.

This charming book opens a window into the world of a young stick insect allowing the reader to travel with him along his lifelong journey. The book begins with a preface that explains some of the general natural history of the stick insect. The next five pages introduce Sid, the baby stick insect, starting when he was just an egg and detailing his favourite food, habits and places to sit. This is followed by thirty-eight pages that see Sid go out into the real world and explore the exciting animals, environments and weather conditions that he meets throughout his life. Finally the book ends with an epilogue that summarises Sid's journey and the way it fitted into the great circle of life.

The language lends the book a tone that would be capturing and intriguing to anyone between the ages of four and twenty. Each page details a different encounter, with half the pages taken up by text and the other half by illustration. The details given in the text about each of



these encounters is therefore brief. However, it is informative enough that the reader gets a general idea about what the animal or environment in question is. It also leaves them keen to find out more. The illustrations are a combination of photographs and sketches which adds to the light-hearted and fun feel of the book.

All in all this is a delightful new children's book which I would recommend to any young person with a broad interest in wildlife.

Kara Majerus

PRESS RELEASE

Welcome to Bees In Art!

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Bees In Art is curated by Andrew Tyzack, graduate of The Royal College of Art and third generation beekeeper. Andrew runs several beehives and paints in the East Riding of Yorkshire, UK.

Dipterists Handbook (Second Edition) edited by Peter Chandler (with contributions by 42 other authors)

This Handbook provides a work of reference for everyone interested in the study of flies, both beginners and experienced dipterists.

As in the first edition great emphasis has been placed on the habitats and biological associations of flies. Among the authors are specialists in each field of study so it has again been possible to bring together a summary of the latest knowledge of all aspects of the biology of Diptera at the species level.

There are additional subjects not covered in the first edition including Forensic entomology and an explanation of the classification of Diptera and a bibliography of key works for the identification of both adults and larvae. Some specific habitat associations are covered in greater detail to reflect increased ecological knowledge of flies and the greater significance now being placed on some habitats in the conservation of Diptera. 525 pages with 32 colour plates and 45 text figures. **£ 52.00**
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by P. May and M. White. A practical manual detailing the various methods used to prepare specimens for a collection, from killing methods, setting the specimens and repairing damaged ones, to storage and preservation, including pest prevention and cure. 21 pages. 4 figures and 5 plates. (2006)

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The Hymenopterist's Handbook by Dr. C. Betts *et. al.*

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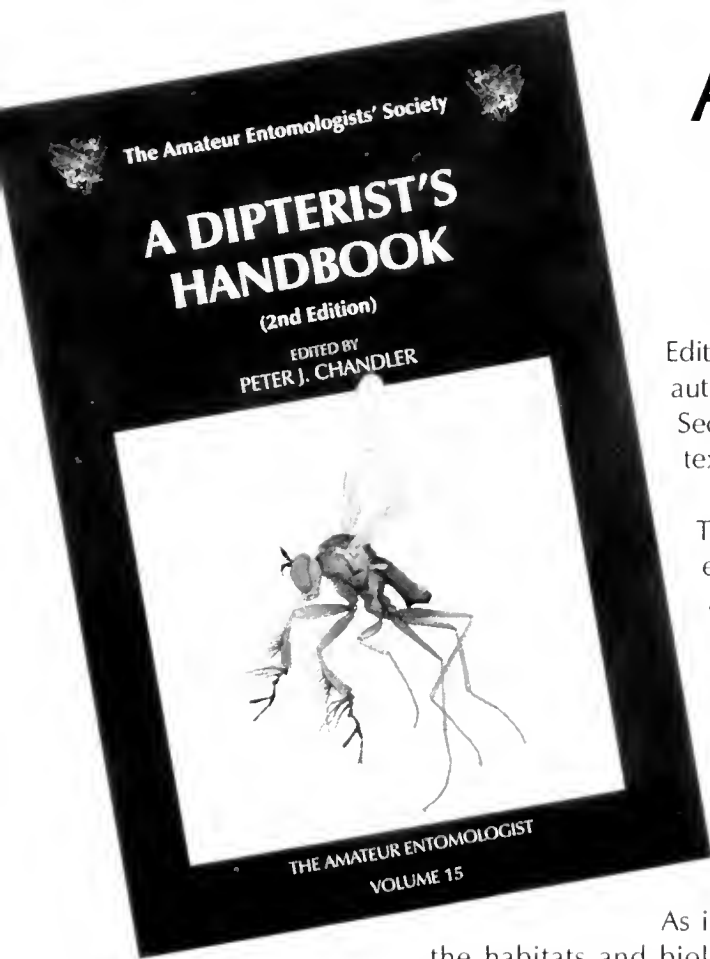
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This Handbook provides a work of reference for everyone interested in the study of flies, both beginners and experienced dipterists. The first edition appeared in 1978, since then there have been considerable advances in knowledge of Diptera and new techniques and equipment used in their study have developed. The Handbook has been fully updated and new subjects have been added so that it has grown substantially to more than twice the size of the first edition.

As in the first edition great emphasis has been placed on the habitats and biological associations of flies. Among the authors are specialists in each field of study so it has again been possible to bring together a summary of the latest knowledge of all aspects of the biology of Diptera at the species level. This also demonstrates where increases in knowledge could be made by the contribution of anyone interested in making observations, whatever their level of experience in the study of Diptera.

Additional subjects not covered in the first edition include an explanation of the classification of Diptera and a bibliography of key works for the identification of both adults and larvae. Some specific habitat associations are covered in greater detail to reflect increased ecological knowledge of flies and the greater significance now being placed on some habitats in the conservation of Diptera. The chapter on behavioural studies has been expanded to cover techniques in more detail. Forensic entomology is another increasingly important subject, for which an expanded account has been provided. The Handbook is concluded with an account of changes to the British Diptera fauna that have taken place in the period since the appearance of the first edition.

The principal purpose of this Handbook is to encourage greater interest in this fascinating order of insects. As with the first edition, it is expected that further rapid increases in knowledge will follow.

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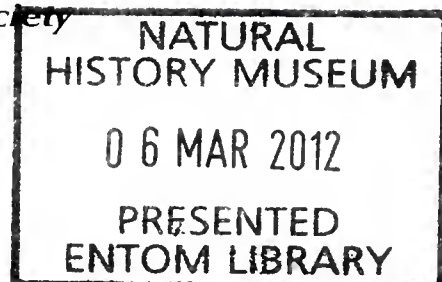
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