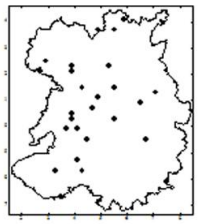

A bi-annual newsletter focussing upon the study of insects and other invertebrates in the county of Shropshire (V.C. 40)

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~ Welcome ~

Welcome to the 5th edition of the Shropshire Entomology newsletter. I hope you enjoy it and it inspires you to submit your own articles relating to any aspect of entomology relevant to Shropshire or Shropshire entomologists. Many thanks once more to everyone who has contributed to this edition. The deadline for submission of content for Vol. 6 is **Friday 21st September 2012**. Please feel free to pass this newsletter on to anyone you feel might be interested in it.

Thank you also to everyone who came to the Shropshire Entomology Weekend for making it another successful event and the British Entomological and Natural History Society for partnering us for the weekend.

Note – past newsletters are now available for download as PDF's from www.invertebrate-challenge.org.uk/newsletters-and-resources.aspx

~ Contents ~

The problem with *Carabus problematicus*

Two species of large Carabids which can be difficult to identify in the field are the aptly named *Carabus problematicus* Herbst, 1786 and its close relative *Carabus violaceus* Linnaeus, 1758 (Violet Ground Beetle) (fig 1). Both are from the family of ground beetles (Carabidae), and at first glance both species look very similar, but with a little practice there a couple of key characteristics which provide a straight forward way for them to be distinguished from one another.

Unfortunately both species are of similar size, ranging from 20 – 30mm, so this feature does not really help in identification. *C. violaceus* is found in most undisturbed habitats throughout the UK and according to the literature (Luff, 2007), *C. problematicus* is most commonly associated with *Calluna* heath or forest in upland areas although it can occasionally be found in gardens.

(fig.1 – photo by Simon Yates)

Fig. 1 *Carabus problematicus*. The lines or grooves (striae) running down the elytra distinguish it from *Carabus violaceus* (fig. 2)

(fig. 2 – photo by Simon Yates)

Arguably the main identifying characteristic when distinguishing these two ground beetles is the patterning or striae on the elytra (fig 3). *C. problematicus* has distinctive sculpturing running down each elytron whilst *C. violaceus* is much smoother. If the sculpturing is hard to see a second feature to look for is to look at the back of the pronotum the edges of which are upturned in *C. problematicus* (Luff, 2007). Finally the distance between the lobes can be used to aid identification as it is wider in *C. violaceus* (Walters, 2009).

(fig. 3 – photos by Simon Yates)

Fig 3. *C. problematicus* on the left shows the distinctive sculpturing on the elytra, the upturned sides of the pronotum and a narrower distance between the lobes. The elytron on *C. violaceus* on the right is much smoother, the pronotal edges are not as raised and the distance between the lobes wider.

Simon Yates

Cuckoo Bumblebee Apparently Carrying Pollen Loads

On 31st July 2011 I was sitting in my garden in Telford when a large bumblebee landed heavily in front of me. On examination it was obviously a female of either *Bombus vestalis* or *B. bohemicus.* Both species are present locally. They are 'cuckoo' species and so do not make their own nests or collect pollen. However, to my astonishment this bee appeared to be carrying pollen loads on its hind tibiae. Before I could grab my camera, it took off and flew over the garden fence. Fortunately it landed heavily again just outside. I was able to take three photographs of it before it flew off again, this time disappearing over neighbouring gardens.

Bombus vestalis (David Williams)

I sent the photographs to Ian Cheeseborough, but he was as nonplussed as I. I then emailed David Baldock, retiring membership secretary of BWARS and author of the seminal 'Bees of Surrey'. He was also puzzled, so distributed them to other senior BWARS members for opinions. Eventually, the consensus was that the accretions were not pollen but dried mud or similar. Both George Else and Mike Edwards said that they have previously seen similar accretions on a number of occasions and in a number of species. George also identified the bee as almost certainly *B. vestalis*.

Close-up of accretion (David Williams)

To me, these accretions looked, superficially at least, so much in form like pollen loads that I wondered if they could have accumulated by chance, or if they had been formed in some way by the bee. However, George Else was certain that their similarity to pollen loads was purely coincidental. The bee had presumably spent time in a damp, muddy burrow or similar and simply happened to pick up mud on its hind legs.

In the meantime I had also sent the photographs to an ecologist friend of mine, Dr. John Wilkinson, for an opinion. This lead to an interesting conversation along the following lines: Cuckoos, unlike 'socials' have densely hairy, velvety hind tibiae. Is it possible that in

grooming mud/clay off its coat, this had built up and then dried and hardened, on its hind tibiae? This might, in fact, be a process quite comparable to that by which queens and workers of social spp. groom pollen back into their corbiculae, the important difference being that the outer surface of their hind tibiae is flat and shiny, which presumably facilitates the unloading of pollen loads in the nest. The hairiness of the cuckoo's tibiae would cause the mud to stick fast. Perhaps this even gives a clue as to how bumblebees' corbiculae evolved in the first place, though grooming off foulants. Is this all rather fanciful? Perhaps – George Else certainly thinks so; he is certain that it is all just coincidence, with the mud aping the form of pollen loads by pure chance. The precise mechanism by which a social female compacts pollen into the corbiculae is unknown to me. And we may reasonably ask why if hairy-legged cuckoos are prone to collecting foulants on their hind legs as a consequence of grooming it off their coats, they are not constantly observed carrying such accretions. In his emailed reply, Mike Edwards said he has "seen this in a number of species over the years". Which species, and just how often were not disclosed, but could be significant. Were any of them cuckoos, I wonder? It appears that David Baldock has not seen anything similar before, nor Ian Cheeseborough.

An interesting phenomenon nevertheless, the concentration of the accretions onto the hind tibiae being an arresting and thought provoking sight, to me at least.

Acknowledgements
I would like to thank Dr John Wilkinson, Ian Cheeseborough, David Baldock and all the people to whom David sent my email and photographs including Stuart Roberts, George Else and Mike Edwards.

David Williams

Shropshire Ecological Data Network update

The invertebrate database aspect of the SEDN continues to grow and so here is a quick update in the figures as to how things stood when the database was uploaded to the co-ordinator at the end of January 2012;

- Total invertebrate records – 281,353
- Total number of species – 5646

During 2011 the Odonata database was rationalized with help from Sue McLamb (county recorder) and Steve Prentice of the British Dragonfly Society. Many thanks to them. Significant data was received from the following people (in no particular order); Nigel Jones, Ian Cheeseborough, Keith Fowler, Godfrey Blunt, Ian Thompson, Allan Dawes, Caroline Uff, David Williams, John and Denise Bingham, Maria Justamond, Don Stenhouse, Paul Watts and Sue Hiatt. Data from Fenn's, Whixall & Bettisfield Mosses NNR was incorporated also. Again many thanks to everyone who submitted data to me for inclusion to the database.

Too late to be included in the figures was the update from butterfly and moth county recorder Tony Jacques, which is currently stuck on my machine due to firewall problems so I know it is there but cant access it. Also I am due to meet Rosemary Winnall (Wyre Forest Study Group) and Simon Wood (Worcestershire BRC) to take forward the process of obtaining the data for the part of the Wyre Forest that it is VC40 which is another exciting development.

The SEDN funded some recording work in Priority BAP habitats during 2011 that was carried out by Nigel Jones, Ian Cheeseborough and I. The summary report can be downloaded from the Natural Shropshire website

(www.naturalshropshire.org.uk) or I can email a PDF of the report to anyone interested.

Pete Boardman

Entomogenous Fungi

Meaning fungi which parasitize insects, the above term is technically inaccurate as it is generally applied to fungi which attack any arthropods. This is a fascinating area of study largely neglected in the UK since the days of Thomas Petch who was active up until around the end of the last world war.

Many arthropods may be host to these fungi, which are often inconspicuous, looking like white or greyish fluff in many cases. In the case of aphids there may simply be an un-natural colour change to dead insects attached as when feeding. They are small, frequently insignificant to the eye of most of those who study fungi and are regularly overlooked. To complicate matters further there is no comprehensive guide to their identification and the literature is diverse and often in obscure journals which are difficult of access. To further complicate things most of these fungi have a two – stage life cycle, that is they appear in two different forms, possibly on different hosts and many have not yet been recognised or 'coupled' hence we have quite a confusing area of study.

What all of this means is that they are understudied and not well understood. They are also frequently under-recorded simply because they are not looked for and are most often found by chance, often to remain unidentified because the means is too difficult. However, they are very common (just look at how common the hosts are) though finding them has proven to be a learning process of considerable complexity, variety and great interest.

The British Mycological Society maintains the Fungal Records Database for Britain & Ireland (FRDBI) which lists, theoretically, all British fungal records. This provides the user (just Google it in) with an idea of the abundance and distribution of any particular species.

My own studies, which began in earnest only this year have clearly demonstrated how common these fungi are – so far 500+ and still counting for 2011. The problem was that I had to learn how to look for them first. The techniques differ. A simple mk. 1 eyeball test (looking 'small' and 'close – in') produces some results on the ground and on vegetation but far greater success can be obtained by gently removing leaf litter, searching the underside of leaves and investigating such sites as rotting logs. Sound familiar? Just what invertebrate hunters are wont to do!

The grasshopper *Chlorothippus brunneus* (if my id. is correct) is in the characteristic post-mortem pose of an *Entomophthaga grylli* infection. (photo -Don McNeil)

The results can be spectacular. According to the FRDBI there are only four specimens of the grasshopper pathogen *Entomophaga grylli* for the

UK. Yet, following a tip-off that several specimens had been found over the course of a couple of years at the Stiperstones I managed to find 102 in a couple of hours. A species parasitic on flies *Hymenostilbe muscarium* has been recorded on 21 occasions. Yet at one site at Ainsdale, S. Lancs. I have found around 100 specimens since July. A small but quite spectacular spider pathogen recorded around 200 times produced 102 specimens from Lake Vyrnwy on a visit in December 2011.

The legs of a spider *Meta marianae* are just visible beneath the numerous synnemata of a *Gibellula*, probably G. *leiopus*. (To be confirmed). (Photo – Don McNeil)

The abundance of such finds is due to a phenomenon known as the epizootic – epidemic in humans, just think flu or SARS. Not all occurrences are due to epizootics though, there is a general low level of infection in any population.

Hymenostilbe muscarium which has a pointed apex and its fertile stage *Cordiceps forquignoni*, with a terminal perithecium, on unidentified diptera (Photo – Don McNeil)

As seekers of invertebrates, the readers of this article are probably the most likely workers to come across such fungi during their own sampling. I would like to put out a general appeal for any such specimens, which come to notice, to be forwarded to myself. I am quite happy to pay reasonable postage costs and may well be prepared to travel considerable distances if the find warrants it and the information is 'hot'. But resources are not infinite! Similarly I would like to establish working relationships with specialists of everything from mites to beetles, spiders to sawflies and so on who would be prepared to examine specimens with a view to identifying the host species to whatever level is practicable and thus provide vital data. These fungi can be incredibly host specific and may even be identified as a result of determining the host but often the records imply state 'insect'.

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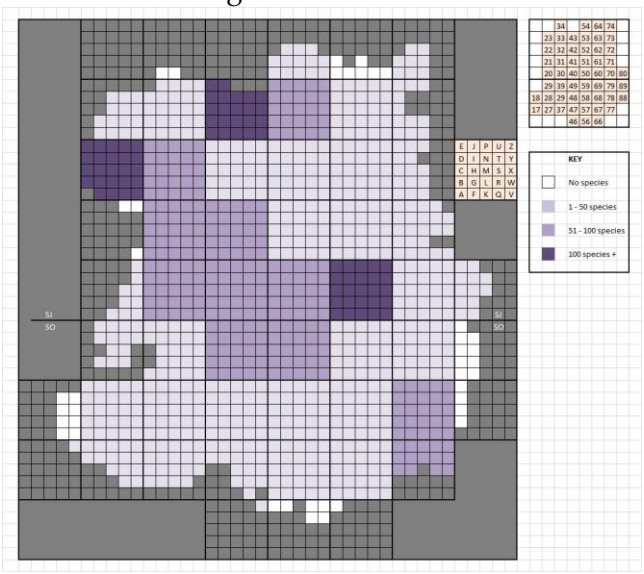
Don McNeil

Announcement: A provisional atlas and account of Shropshire craneflies (2nd edition)

Five years ago I authored and published a Shropshire cranefly atlas, perhaps the first all inclusive county cranefly atlas, which attempted to flag up this deeply unloved and unappreciated group of fascinating creatures. It was an exhausting undertaking and in the subsequent couple of years I struggled to garner much enthusiasm for the flies. However this malaise passed and now I find the old passion has returned to a degree where I would very much like to go through the process all over again! Therefore I am announcing a call to arms to anyone interested in helping me carry out fieldwork for the 2nd edition. You can help in a few ways, either by collecting specimens (easy if you run a moth trap, or have an outside light by your front door), or suggesting access opportunities onto private land. If you have a reasonable digital camera I am more than happy to look at cranefly photos as a means of identification – sometimes this is not possible as the key feature isn't in focus, or it is one of those species that need to be examined under the microscope, but many of the larger species can be identified from photographs, especially if date and habitat details are noted.

The original idea of the book was to be an accompanying guide to Alan Stubbs opus *British Craneflies* – giving a Shropshire slant and piggybacking the identification keys and ecological information. Sadly however *British Craneflies* remains unpublished and unfinished, which is a really depressing thought as it ultimately holds back interest in the group. The Shropshire book will hopefully give the clearest insight to date into the distribution of our species. In recent days I've done a lot of work on the biological recording aspects of the atlas and put together a tetrad and hectad maps of Shropshire showing the situation as we go into the 2012 recording season.



Shropshire craneflies hectad map (Pete Boardman)

Shropshire craneflies tetrad map (Pete Boardman)

The maps above show the level of recording to date. The hectad map shows that the 10 km squares containing Whixall Moss, Ironbridge Gorge and Cyril Pugh's old stomping ground of the Oswestry area have had over 100 species recorded in them, whilst the rest of the county is either reasonably recorded (lilac) or still needs a lot of work (pale lilac or white). 100 species represents just under a third of the UK fauna so

is a good indication of habitat quality – though that isnt a scientifically rigorous fact – just a gut feeling.

For the tetrad map I've split data into five categories; 0 records (white) 1-19 species (pale lilac), 20-30 species (lilac), 21-50 species (purple), and 50+ species (dark purple). All Shropshire tetrads should be able to obtain at least a "pale lilac rating" though it would be fabulous to get to the stage of having most tetrads showing some recording effort by the end of the project. Currently about 60% of Shropshire tetrads remain "unloved" in terms of cranefly records, if I can get to the end of 2012 with maybe only 30% still to be visited then it will be a move in the right direction.

Perhaps more interesting is the work John Kramer of the Cranefly Recording Scheme is doing on assessing the UK fauna for rare or declining species and also the work he is doing on measuring the quality of wetland sites by their cranefly fauna. These are both projects I have been communicating with John about and hopefully the data generated from this atlas project will be used in this process. So by helping to collect and record craneflies in Shropshire we are carrying out important work on a national stage, not just a local one.

Pete Boardman

"Welcome to Shropshire" - The Juniper Shieldbug *Cyphostethus tristriatus* new to Shropshire

It was a cold but fine February day when I went for a stroll from Kemberton to Sutton Maddock via Brockton and back. On returning along the Monarch Way my path crossed that a fox. It seemed unconcerned with my presence as it loped away and disappeared eventually into the hedge. To avoid walking along the road into Kemberton I cut through the churchyard and noticed a green insect on the railing.

"a green insect on the railing" (Photo – Keith Fowler)

The FSC chart identified it as a Juniper shieldbug *Cyphostethus tristriatus*. As this was new to me I sent a photograph to Pete Boardman who not only confirmed my identification but told me that it is a Shropshire FIRST!

Juniper Shieldbug and thumb of finder (Photo – Keith Fowler)

The churchyard contains several conifers as well as yew. The railings on which I found the bug guard the steps that lead up to the church and

are between two trees. I believe the one on the right in the photograph is a *Wellingtonia* and the one on the left a species of Cypress.

Kemberton Churchyard (Photo – Keith Fowler)

It is possible, therefore that the shieldbug was living on one of these trees and just happened to be taking a rest on the railings as I went past.
So let's extend a "Welcome to Shropshire" to the Juniper shieldbug.
Keep your eyes peeled in churchyards near you as it may well turn up there if there are suitable trees around.

Keith Fowler

Ed's note: This is very timely!! I had only been in correspondence with Tristan Bantock two days earlier on this very subject. He said to target Cypress trees in Churchyards in towns and Keith has shown this strategy should bear fruit!

As I was putting the newsletter together I had an email from Maria Justamond to say she has found Juniper Shieldbug too (28/02/12) – so perhaps 2012 is the year of this species!!

"Websites I have loved!"

I came across this useful website for anyone interesting in aculeate hymenoptera in a recent fit of 'key' frustration. I found the easiest way to use it is to go the homepage, click on 'terms' in the main menu and scroll down until you find what you need. There is an illustration and synonyms with most of the definitions too. Warning - Clicking on random, interesting looking terms becomes mildly addictive.

http://glossary.hymao.org/projects/32/public/ontology/

Bex Cartwright

Ed. I clicked on the "*I'll get there quicker at random*" button to see what happened and this came up.....

"anterior trochanteral condyle of the metacoxa"

The condyle that is located on the anterior trochanteral articular process of the metacoxa and inserts into the anterior coxal fossa of the metacoxa. I never know when I'll need that!

At the Worcestershire Entomology Day Adam Bates mentioned the Public Library of Science (PLOS) www.plos.org which holds amongst others his paper Changing Bee and Hoverfly Pollinator Assemblages along an Urban-Rural Gradient – amongst others. Click on the PLOS One button and then search by the title.

Pete Boardman

(If you have any websites that highlight an aspect of entomology or biological recording please let me have the details for future editions please. Ed.)

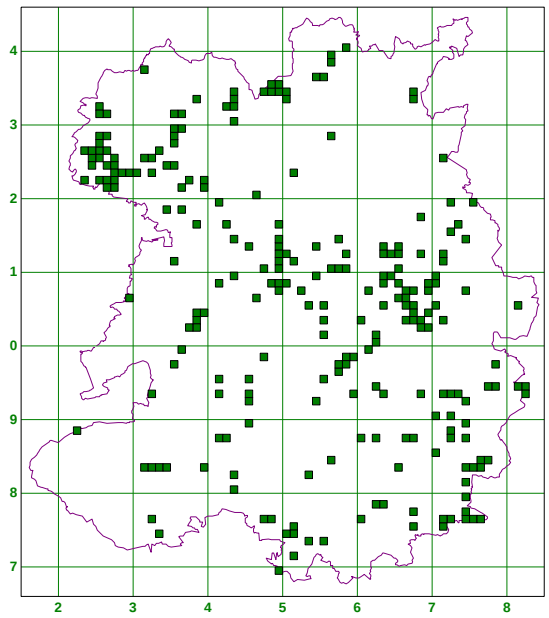
Announcement – a distribution atlas of Shropshire's shieldbugs and their allies

Following a series of training events, and the establishment of the SEDN invertebrate database, now seems a good moment to announce the beginning of a project to produce a distribution atlas of Shropshire's shieldbugs. As has been recounted numerous times both here, and elsewhere, our current knowledge of these fascinating creatures stems from a talk on the shieldbugs of Worcestershire, delivered by Gary Farmer at the 2009 Worcestershire Entomology Day. Those Shropshire entomologists there who heard the talk gathered at lunchtime and each independently considered how little we knew of Shropshire's species, sparking a seed change in our approach to this group of hemipteran bugs. Consequently the Biodiversity Training Project and now Invertebrate Challenge has highlighted the group towards this moment when we can start to consider how we might disseminate the data we have compiled, whilst encouraging more people to get involved.

Shieldbugs (and their allies) have benefitted from much recent recording work thanks to the raft of fantastic resources available to aid their identification. Alongside the more traditional identification guides such as 'Shieldbugs of Surrey' (Hawkins, 2003) the fabulous 'British Bugs' website has brought these creatures to a whole new audience. Given these resources it seems we are at a good time to encourage not only ardent entomologists to record these creatures but a whole range of people with a wider interest in the outdoors such as gardeners, photographers and hopefully members of the general public too.

I propose to publish a pictorial distribution atlas towards the end of 2013, giving the best part of two recording seasons to systematically improve the coverage of species in the county. We will cover the traditionally recognised shieldbug families of the Pentatomoidea (comprising the Acanthasomatidae, Scutelleridae, Cydnidae and Pentatomidae), the "honorary" shieldbugs - the leatherbugs (Coreoidae), plus shieldbug "allies" the scentless plant bugs (Rhopalidae) and the spurge bugs (Stenocephalidae).

The database as it stands comprises of approximately 750 records (as of November 2011) but will hopefully swell as more people record them and more data comes into the scheme. The coincidence map below shows the current situation regarding where in the county the records have to date been collected.



Coverage map of Shropshire shieldbugs and allies (at tetrad level) to November 2011 using DMAP recording software.

Many opportunities occur to record bugs in the county and even many of our more visited sites such as Shropshire Wildlife Trust reserves have

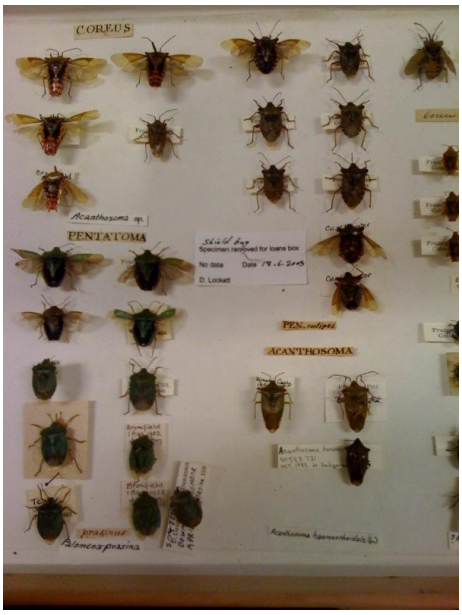
had little or no shieldbugs recorded at them. The following is a list of SWT sites with **no shieldbugs recorded** (Birch Road Pond (Ellesmere), Brook Vessons, Bushmoor Coppice, Bwlytai Wood, Clunton Coppice, Comley Quarry, Craig Sychtyn, Earl's Hill, Greenfields, Harton Hollow, Holly Banks, Hope Valley, HQ & visitor centre (Abbey Foregate), Lurkenhope Wood, Quarry Wood, Rhos Fiddle, Ruewood and The Plantation at Ellesmere).

Prees Branch Canal, Lower Short Ditch and Wood Lane have a single species recorded, Dolgoch Quarry has two species. A handful of sites have more (Catherton Common (5), Granville Country Park (5), Jones Rough (4), Llanymynech Rocks (5), Llynclys Common (4), Melverley Farm (4), Sweeney Fen (3), The Ercall (5) and Whitcliffe Common, which has the most species recorded at six, thanks to the Invertebrate Challenge event held there in April 2011. Likewise several Shropshire Council sites have few or no shieldbug records. Here is a list of those without any; Battlefield Heritage Park, Donnington and Albrighton LNR, Hodnet Countryside Site, New England Countryside Site and Reabrook Valley Country Park. Walkmill Meadows at Market Drayton has a single species, as does Oswestry Old Racecourse where Gorse Shieldbug has been recorded on four separate occasions. Therefore if you are visiting a Shropshire Wildlife Trust reserve or a Shropshire Council site this year please do record any shieldbugs you might come across!

Many questions have recently arisen regarding which species might be found in Shropshire and questions arise over five (was six but see Keith Fowler's article!!!) potential species that could / should / might have / might yet occur / occurred. In the last Shropshire Entomology (Vol. 4) you may recall an article by Brett Westwood highlighting the discovery of **Heather shieldbug** *Rhacognathus punctatus*, and the tortoise shieldbug *Eurygaster testudinaria,* plus the rediscovery of **Cow-wheat shieldbug** *Sehirus biguttatus* in the Shropshire parts of the Wyre Forest. Brett has also highlighted **Fallen's leatherbug** *Arenocoris falleni* which he found under common storks-bill *Erodium cicutarium* on dredged river sand in Worcester (Brett Westwood pers. comm.) It is not beyond the bounds of possibility that this bug may occur in similar conditions further up the Severn Valley or in sand quarries in the southerly half of Shropshire? Since then Rosemary Winnall has informed me that two further bug species, the **slender-horned leatherbug** *Ceraleptus lividus* and the rhopalid bug ***Stictopleurus punctatonervosus*** are both knocking on our metaphorical door, having been found near Stourport recently by Jane and Dave Scott (Rosemary Winnall pers.comm.). Again it wouldn't be unreasonable to think that if they are already at Stourport, it isn't too far up the Severn Valley to Bridgnorth, so dry grassland sites in the area may well be worth an extra scour for these two species.

I recently visited Ludlow Museum and Resource Centre to examine their collections for shieldbug data that I could add to the database. The day started off well as I encountered a **Hawthorn shieldbug** *Acanthasoma haemorrhoidale* in the car park by the Museum, a good omen if ever there was one! Upon inspecting the Frances Pitt collection I was intrigued to find representative specimens of tortoise shieldbug (thought to be new to Shropshire during 2011) but also two specimens of the **bordered shieldbug** *Legnotus limbosus.* Unfortunately the Frances Pitt collection has no data labels with the specimens and so we have no indication as to where the bordered shieldbug specimens actually originated, however Frances Pitt (1888-1964), a naturalist, entomologist, photographer and writer, who lived in Shropshire all her life, fifty years of which at a house called 'The Albyns' three miles south of Bridgnorth (Dickins, 1987). Obviously we can't prove that these specimens were local to Bridgnorth but it would be

fabulous to discover /rediscover them if they are in our county.



Part of the Frances Pitt collection at Ludlow Museum (Pete Boardman)

As well as the bordered shieldbug, the rhopalid bug ***Chorosoma schillingi*** was found in the Pitt collection, a species of dry grassland that should easily be recognised if it occurs in the county.

Adult male *Chorosoma schillingi* (Will George www.britishbugs.org.uk)

To encourage recording, particularly for those new to the group, I have put together a '**Shropshire shieldbug atlas information pack**' as a PDF which can be downloaded from the Invertebrate Challenge website (www.invertebrate-challenge.org.uk) or in its physical form it will include a copy of the FSC fold out identification chart to encourage people to record the insects. It has potential Shropshire species highlighted and along with the identification chart it includes images of all species and hints and tips towards identification. I've also put together five dates in the 2012 Invertebrate Challenge programme as 'Shieldbug recording days' which will target some of the more under-recorded parts of Shropshire and I would welcome your participation (see the *Dates for your diary* section of this newsletter). As well as your records I would also welcome any help with contacting other groups of people who may be interested in helping out. I've written a short article for the Shropshire Wildlife Trust members magazine but if anyone has any connections with natural history or gardening societies or individuals that may be interested in recording then please let me know.

I wish to thank Daniel Lockett for access to the Frances Pitt collection at Ludlow Museum, Brett Westwood and Rosemary Winnall for keeping me informed of bugs heading our way, and Allan Dawes for helping with the information pack. Also thanks to everyone who has to date supported the shieldbug project by submitting records.

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Dickins, G (1987). An Illustrated Literary Guide to Shropshire. Shropshire Libraries. Shrewsbury (mentioned at http://www3.shropshire-cc.gov.uk/pitt.htm)

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British Bugs Website – www.britishbugs.org.uk

Pete Boardman

Looking for Shieldbugs at Cole Mere Nature Reserve

On a damp day in September 2011, the Shield bug and ladybird group met up in the car park a Cole Mere Nature Reserve in the north of Shropshire to go hunting. Although the site has been surveyed in the past indicating some interesting previous records, it was hoped that the group would be able to add some additional shield bug records and maybe even some new records found for the site.

After leaving the car park, everyone made their way to the meadow adjoining the Mere itself and with sweep nets at the ready; the group split and began to search for shield bugs and ladybirds. Initial sweep netting by the mere netted and instar of the hawthorn shield bug *Acanthosoma haemorrhoidale* - a good start. An unusual shield bug was also spotted by Ian Cheeseborough early on in the morning, but this unfortunately fell into the undergrowth and was though lost! However, after some desperate hand searching by Jim and Anne Shaw the specimen was rediscovered and identified by Pete Boardman as the Woundwort shieldbug *Eysarcoris fabricii* Fig 1.

Fig 1. Woundwort shieldbug (*Eysarcoris fabricii*). Photograph by Simon Yates

Fig 2. Sloe or Hairy Shield bugs (*Dolycoris baccarum*). Photograph by Simon Yates

A couple of sweeps through a small patch of Devil's- bit Scabious *Succisa pratensis* at the side of the meadow collected three Sloe or Hairy Shield bugs *Dolycoris baccarum* Fig 2.

Two members of the group went to search along the hedge line on the far side of the meadow and a number of Spiked Shield bugs *Picromerus bidens* were also found. All- in- all, the meadow proved a highly successful for the collection of shield bugs with the group feeling very happy with the morning's discoveries.

After lunch in a clearing within the woods a small 'meadow' was stumbled across at the far end of the Mere and the discoveries began again. Careful hunting resulted in the finding of a fifth instar Green Shield bugs (*Palomena prasina*) Fig 3 and once the group got their eyes in a considerable numbers were spotted.

Fig 3. Green shieldbugs *Palomena prasina* with the adult on the left hand side and the fifth instar juvenile on the right. Photographs by Simon Yates

It wasn't long before the adults were also found camouflaged throughout the bramble leaves.
By the end of the afternoon the group felt very pleased with discoveries so it was a pleasant surprise that on our way back to the car park two Birch Shield bugs (*Elasmostethus interstinctus*) were also found. The day as a whole proved very enjoyable and successful with five species of shield bug recorded in all. The only slight disappointment was searching for the gorse shield bug proved unsuccessful (although previous records indicated it has been found at the site).

Simon Yates

Look out for Dragonflies! (please)

This article is a brief summary of the 2011 flight season and probably my last chance to beg for Odonata records prior to publication of the British Dragonfly Society National Atlas in 2013. It is also a very welcome opportunity to thank all those who contributed to the 'nearly 900' records received last year. It has been a great first year as County Recorder and I would also like to thank all the people who have answered my endless questions as I walk this interesting learning curve!
An exceptionally warm April triggered the start of the flight season and produced the earliest recorded sightings ever in Shropshire for Large Red Damselfly *Pyrrhosoma nymphula*, Broad-bodied Chaser *Libellula depressa*, Azure Damselfly *Coenagrion puella*, Beautiful Demoiselle *Calopteryx virgo* and Common Club-tail *Gomphus vulgatissimus*. Of these 5 species only *P. nymphula* and *G. vulgatissimus* have been previously recorded in April, the remaining 3 species all usually being recorded from May onwards.
Throughout the season 27 species were recorded comprising 16 dragonfly and 11 damselfly species. Some species were barely represented such as Ruddy Darter *Sympetrum sanguineum* and Variable Damselfly *Coenagrion pulchellum* each with only 3 records. Also of concern is 1 solitary record of Downy Emerald *Cordulia aenea* made at Berrington Pool (SJ524071). Three previously recorded species were 'missing' in 2011, namely Yellow-winged Darter *Sympetrum flaveolum*, Hairy Dragonfly *Brachytron pratense* and Scarce Chaser *Libellula fulva*. Yellow-winged Darter is an irregular immigrant that has not been recorded in Shropshire since the mid 1990's, though it has been recorded in the UK as recently as 2006. Hairy Dragonfly was last recorded in 2000 in south Shropshire at Malpass Wood (SO703767) and Neenshill Coppice at

Wyre Forest (SO705767) and Scarce Chaser has only 1 record ever made in VC40 at Attingham Park in June 2008. A further unconfirmed record of *L.fulva* from a different location was received this year so this is definitely a species to look out for. It would certainly be interesting to know if Scarce Chaser is still present on the River Severn at Attingham Park (SJ5509).

Notably Scarce Blue-tailed Damselfly *Ischnura pumilio* has reappeared in Shropshire. Male and female individuals were recorded by Jim Almond at Titterstone Clee (SO5977) which is where the species was last recorded in 2006. In addition more than 10 Scarce Blue-tailed Damselflies were seen for the first time at Bromfield Quarry (SO484775) by Ian Cheeseborough. Shropshire can also boast 2 thriving Keeled Skimmer *Orthetrum coerulescens* populations. In addition to the well established population at Cramer Gutter (SO6479), adults and larvae have again been recorded in good numbers on the Long Mynd (SO4197).

BDS National Atlas

Despite much effort we still have lots to do in this last pre-atlas field season so that Shropshire is represented as accurately as possible. The atlas will show 'recent records' dating from 2000 onwards and at present the hectad SO18 on the very SW edge of Shropshire is the only 10km square that has no recent records at all! In addition we have another 15 hectads in VC40 that are under recorded. These are mainly in the East of the County and at risk of writing the most tedious article ever I am going to list them:

SJ73	SJ72	SJ71	SJ70
SJ61	SJ23	SJ33	SJ80
SO69	SO59	SO68	SO37
SO38	SO29	SO79	

Apologies for that, but it is the clearest way to indicate where recorder effort is most needed. This information is also illustrated on the BDS website (http://www.british-dragonflies.org.uk/content/national-dragonfly-atlas). If you are enjoying the great British summer in one of these locations please keep an eye out for the dragons and damsels and please don't think records of common species are not worth sending in as these are lacking in many hectads.

Thank you again for all your records and support to date and for the hundreds of records that will come flooding in this year! Please send records to mclamb1@btinternet.com (with an appropriate subject reference) by Xmas at the latest. All points mentioned in this summary are discussed in more detail in the Shropshire Dragonfly Newsletter which can be accessed via the Shropshire page on the BDS website (http://www.britishdragonflies.org.uk/content/local-groups). This also has information on local species of interest and lists local dragonfly events and courses. Have a long and glorious summer and enjoy the dragonflies!

Sue McLamb

The setting up and curation of an invertebrate collection at Preston Montford

One of the first things I was keen to do upon the foundation of the Invertebrate Challenge was to set up an invertebrate collection relevant to the groups of study for the project. Natural history collections can seem a bit Victorian to some and outright damnable to others but to the entomologist they are an essential tool that allows a considerable advantage when identifying difficult taxa. My own entomological apprenticeship (in the loosest sense of the word) was undertaken amongst the draws of specimens

at Liverpool Museum under the tutorage of Tom Mawdsley, Carl Clee, Chris Felton, Ian Wallace and Steve Judd – all fundamentally important people within my own entomological journey.

The framework to the collection at Preston Montford began to be established pretty early on in 2011 with the purchase of two cabinets and a host of trays, some £3000 worth of kit (funded by The Heritage Lottery Fund (HLF) and the Esmee Fairburn Charitable Trust). To this I added my own personal cabinet and trays stuffed to the gunnels with craneflies and hoverflies from my days as a consultant (donated free by me). We were kindly donated a weevil collection plus soon received spares from Nigel Jones (diptera), Ian Cheeseborough (aculeates) and Don Stenhouse (coleoptera) to bulk out the forming collection into something worthwhile.

The establishment of this collection has come amidst a general depressing trend of museums shedding staff in the economic downturn. Our own last regional entomological curator, (and friend of the FSC) Steven Falk, was made redundant from Warwickshire Museum just before Christmas 2011. Martin Godfrey tackled the importance of museum collections in general in his recent excellent British Wildlife article (Godfrey, 2011), so I won't repeat the arguments here but direct you to that if you want to read more.

Back here, with the cabinets and specimens stacked around me I emailed the Invertebrate Challenge course participants and others to see if there was anyone willing to give up some time to putting the collection together. I was thrilled with the response and over the winter months a group of six or seven of us regularly met up to tackle the specimens and curate them. Some of this was frustrating work as the names of many specimens (particularly of the weevils and beetles) have changed since their identification and so a certain amount of detective work has been carried out.

The curation will be an ongoing task as more specimens are generated through our training events and more specimens donated. At the recent entomology weekend we were offered a large hoverfly collection, an orthoptera collection and a lepidoptera collection. Sadly we can't take everything as we are limited to the space we current have but hopefully what we do have when the collection is fully curated will be regionally important.

Sue Hiatt, Bex Cartwright and Keith Fowler working on the collection (Photo – Pete Boardman)

Most importantly though is that the specimens are used by people, and it has been heartening to see regular visitors coming in to use them. Activity on the collection was finished for the 2012 field season in early March but will hopefully resume again at the end of the year.

The collection holds a reasonable selection of diptera with focus on the craneflies and hoverflies but has a good selection of families. This will grow as Steven Falk has pledged some of his acalypterate spares from this year.

We will have a good representative aculeate hymenoptera collection, and within beetles the weevils and ground beetles will be adequately represented. During 2012 a spider collection (in alcohol) will be started by the Shropshire Spider

Group (SSG) and maintained at Preston Montford by Gerry Thomas on behalf of the SSG. If you would like to come and use the collection, or help with its curation, please contact me.

Many thanks to the core of people who helped with the curation during the winter; Lorcan Adrain, Nigel Cane-Honeysett, Bex Cartwright, Allan Dawes, Keith Fowler and Sue Hiatt.

References

Godfrey, M. 2011. *Why museums matter*. British Wildlife. Volume 23 Number 2. British Wildlife Publishing. Milton on Stour.

Pete Boardman

The bilberry bumblebee, *Bombus monticola* (Smith) on the Long Mynd 2011

2011 was the fourth and final year of my Long Mynd *Bombus monticola* transect (see Shropshire Entomology Vol 3, April 2010). It turned out to be a very good year for *B. monticola,* a substantial upward trend in its numbers being observed. Gradual increase in the first three years of surveying (*B. monticola* comprised 5.1% of total bumblebee sightings in 2008, 5.9% in 2009 & 6.5% in 2010) doubled to a remarkable 12.4% in 2011. This made it the third most numerous species on the transect in 2011, as opposed to its long term position of fifth.

Interestingly, the number of *B. lucorum s.l.* similarly doubled (14.3% in 2010; 29.3% in 2011) whereas bumblebee numbers in general were much lower than recorded in the previous two years, 2011's average of 26 bombids per survey contrasting with 38.6 in 2010. Elements of the *B. lucorum* complex are known upland specialists (*B. magnus* especially), and likely therefore, as *B. monticola*, to be particularly cold-adapted. *B. magnus* has been recorded on the Long Mynd (I. Cheeseborough pers. comm.). As an example of their hardiness, all the bees recorded during a cold and wet survey on 17th July were either *B. monticola* or *B. lucorum s.l.* with the exception of one moribund male *B. rupestris.* Perhaps the unusually long and cold winter of 2010-2011 caused a fall in numbers of the more generalist bumblebee species on the Mynd, while the hardier species survived it in greater numbers?

2011 finally produced good records of pollen collecting (see previous article), including belated multiple observations from the expected sources of bilberry and heather.

The other noteworthy feature of 2011 was the discovery, on 18th June of an active *B. monicola* nest. This was the first *B. monticola* nest ever found on the Long Mynd. The transect method was thereafter modified, to allow timed (20 min) counts of activity at the nest. Bees 'in' and 'out' were counted, and their flight paths to/from the nest were noted. Normal transect counting was suspended during these periods of nest observation, the observed bees not being included in the transect count.

The nest was located on the plateau (Cow Ridge) at an altitude of approx 445m. Observation quickly established that bees were regularly disappearing into and emerging from a heather bush and an immediately adjacent bilberry bush. The nest entrance seemed to be in between the two but was concealed, at least until it was subjected to an attack, perhaps by badgers, sometime between the surveys of 30th July and 13th August. This revealed the entrance to be a hole in the ground, presumably leading down to a former small mammal nest. Bees could thereafter be observed flying down into the hole and disappearing.

Bee numbers at the nest had reached a peak at the end of July, immediately before the attack (26 bees either coming or going in 20 minutes). Thereafter, though the colony survived the assault, numbers were much reduced (just eight

in 20 mins on 13th Aug). A genuine late-season decline seemed to have set in by 9th September, and this was the last date at which any activity at the nest was observed.

Bombus monticola (Photo – David Williams)

Observation of flight lines to and from the nest revealed that foragers appeared to be heading mainly down into the valley areas on 18th June and 2nd July, where most forage sources were then to be found (broom, thistles, rose, white clover and bramble). By 30th July the heather was beginning to flower. Also, there was a small but significant re-flowering of bilberry. Both of these plants occur mainly on the plateau. Flight paths to and from the nest were observed to have correspondingly changed direction to account for this. Some bees were still seen to be heading towards or returning from the valley sections though, where bramble in particular was still in full flower.

So, as of 2011 *Bombus monticola* seems to be thriving on the Long Mynd. It is to be hoped that this continues to be the case.

David Williams

The Formation of the Shropshire Spider Group (SSG)

During the early days of the Invertebrate Challenge, when subject areas were presented by experts, participants became polarised towards particular groups according to interest, knowledge, types of study and recording activity and no doubt a degree of curiosity.

Initially six potential arachnologists came forward to take part in the various activities planned by Pete Boardman. Paul Lee, a Council Member of the British Arachnological Society (BAS), kindly agreed to tutor those interested. This was to involve both fieldwork and specimen identification in the laboratory at Preston Montford (PM).

The beginnings of a spider group with Paul Lee (Photo: Pete Boardman)

The first meeting was a field trip when all six travelled to Suffolk to meet the tutor and to learn some basic details in Captain's Wood in East

Suffolk. By the end of the day talk of '*Metallina*', '*Clubiona*', '*Pardosa*', '*Pisaura*' , to name a few, had become part of the vocabulary of the intrepid six. The nucleus of a spider group had been formed.

Labyrinth spider at Captain's Wood (Photo: Nigel Cane-Honeysett)

One more day in the field this time in Shropshire at Ifton Meadows in August took place followed by a series of sessions at PM. Under the guidance of Paul and with microscopes to hand the hard but intriguing work began as the skill of identification of species became the focus (apologies for the pun!). These were the early days of a collection of specimens which later would become reference material for ongoing arachnological recording and data collection in Shropshire.

By February 2012 this informal group's numbers had risen to eleven, the collection of identified and unidentified specimens had increased considerably and the requirements to coordinate not only the fieldwork and data recording across Shropshire (VC40) but also the laboratory work with Paul at PM had become evident. Still under the sponsorship of the Invertebrate Challenge the Shropshire Spider Group was officially formed on 19th February 2012 with eleven members.

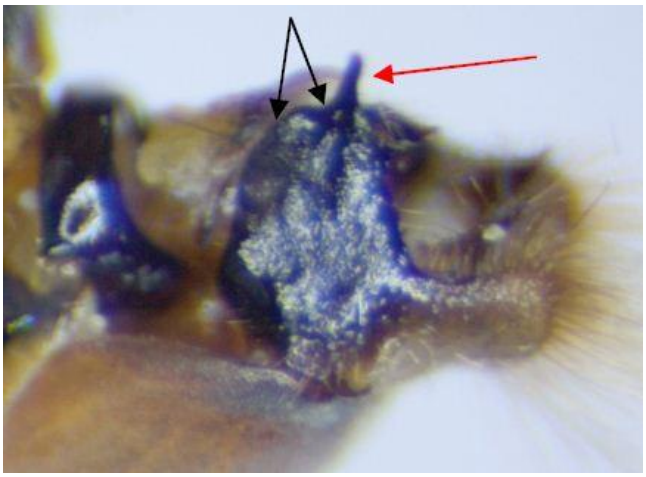
Since then one day's fieldwork has taken place at both Brown Moss and in the caves at Hawkstone. It was a successful day when many species were found including *Meta* in the darkness of the caves. The next field meeting is planned for 15th April 2012 in Telford & Coalbrookdale. Further sessions at PM with Paul Lee are also scheduled throughout the rest of the year. In addition work is ongoing to set up an accepted data recording system (The Spider Recording Scheme) which will be incorporated into Mapmate. At the same time the collection of specimens, reference books and equipment is being properly catalogued and recorded.

It has been an interesting, rewarding and overall successful year when both outdoor and indoor meetings have been fun, informative, often challenging (…'is it a spine or a hair – no, it is the trichobothrium…!) and have, hopefully, started to contribute towards a greater understanding of the arachnology of Shropshire.

Mike Fallon

Hoverfly Identification resources - *Sphaerophoria* terminalia figures

As part of the hoverfly identification courses, Nigel Jones has been working to help improve the quality of resources available for use by hoverfly workers. To this end he has produced a PDF examining the terminalia of the hoverfly genus *Sphaerophoria* to help clarify the diagrams on pages 104 -107 in British Hoverflies (Stubbs & Falk, 2002). This can be downloaded from the Invertebrate Challenge resources page. www.invertebrate-challenge.org.uk



Segment of the *Sphaerophoria* pdf (Pete Boardman)

Reference

Stubbs, A. E. & Falk, S.J. (2002). British Hoverflies – An Illustrated Identification Guide. British Entomological and Natural History Society. Reading.

Announcement: a provisional Atlas of Shropshire Microlepidoptera

Some twenty years ago the first attempt at a complete inventory of the county's Microlepidoptera was published, in an appendix to Adrian Riley's *A Natural History of the Butterflies and Moths of Shropshire*. As Riley pointed out, this group of moth families had been largely ignored in the county, with hardly any resident entomologists giving them serious attention. However, with records from several visiting entomologists, Riley was able to put together a creditable list of 650 or so species of smaller moths for the county, though status and distributional data for individual species were very limited.

Riley hoped that his list would encourage more interest in the group among resident entomologists. Indeed, this has been so. The last two decades have seen a remarkable surge of recording of the "micros", with active individuals and groups such as the Garden Moth Scheme and Wyre Forest Study Group contributing significantly to the county's database. Since 1991 we have added over 100 species to the county list. Just as impressive has been the volume and geographical spread of new records, so that we are now able for the first time to make reasonable assessments of the status and distribution of the county's smaller moths.

Now is a good time, therefore, to bring out an updated account of this fascinating group of insects. The projected Atlas will aim to summarise the data available for each species, and, where records are sufficient, map its distribution. It will also show future workers where the main gaps lie: species still to be found in the county, localities and habitats needing more work. Just as Riley's list stimulated interest, it is hoped that this Provisional Atlas will act as a useful guide for future entomologists.

Readers can support this enterprise by submitting their Microlepidoptera records, to bluntsig195@btinternet.com by the end of this year, please. I will shortly be sending out tips on what to look for in 2012 to help fill in some gaps: if you would like a copy and do not currently receive mailings on behalf of the Shropshire Invertebrates Group, please drop me a line. Photographers can also contribute, as we expect we shall need some good pictures of micro moths for the new Atlas, so please try to make this group one of your targets for 2012.

Godfrey Blunt

Announcement: a provisional Atlas of Shropshire Cerambycidae (long-horned beetles)

Long-horned beetles are an interesting and oft encountered group of animals that have surprisingly been neglected in Shropshire for too long. A provisional atlas therefore seemed a logical progression given the increased recording and photography of the group due to the Invertebrate Challenge beetle courses, plus the raft of online identification resources or photo storage sites that proliferate these days.

Rhagium bifasciatum (Photo: Pete Boardman)

The plan therefore is to produce an atlas of the Shropshire species by the end of 2013 giving two clear recording seasons so that we may give a reasonably true picture of their distribution. It is hoped that the atlas will also contain a good degree of photographic material to encourage the identification of this group by more people after its publication.

The atlas will be a group effort with help from several beetle group members. Principally Caroline Uff and I will be authoring the book, but with support from others interested in this beetle group.

If you would like to get involved with recording or the photography of species please get in touch!

Pete Boardman

Ladybird zombie killer found in Shropshire!!!

Recently I went for a walk to the north of Shifnal and was rewarded with a sighting of a tiny Adonis ladybird *Hippodamia variegata*.

It was nestled with half a dozen 7-spot ladybirds in leaf litter caught up in a hawthorn hedge. Quite a lot of 7-spots accompanied my walk. There were at least 30 on one ivy clad oak tree both on the trunk and tucked up in the ivy leaves. Ladybird real estate was in such short supply that there were a few displaced individuals on the kerb at the side of the road.

On my way back into Shifnal I found yet another 7-spot ladybird. As I made a record of it I noticed that there was something between its legs. It was not easy to see (or photograph) as it was on the underside of a fence rail.

Pupa of braconid wasp *Dinocampus coccinellae* under 7-spot Ladybird in Shifnal (Photo: Keith Fowler)

I decided that it may be a pupa of the Braconid wasp *Dinocampus coccinellae*.

I sent the photograph to the UK Ladybird Survey (www.ladybird-survey.org) who confirmed that it was indeed an example of *D. coccinellae*. I contacted Pete Boardman for its distribution in Shropshire; he promptly informed me that this

was a Shropshire FIRST! And, of course, he then asked me to write an article about the find!

Dinocampus coccinellae has a worldwide distribution and parasitizes many ladybird species. It is possible that its spread around the world has been greatly assisted by ladybird introductions as pest control agents. Generally the adult beetle is selected as the host but use of the larval and pupal stages is recorded. Stationary ladybirds have pretty impenetrable defences, so the wasp will pursue one that is moving. When a ladybird is walking its head is extended forward and its elytra are raised slightly.

D. coccinellae in the act (Photo: UK Ladybird Survey)

This provides the wasp with access to the soft tissue between the head and thorax and the abdominal segments in which to oviposit. The larval stages of the wasp live within the ladybird. The developing larva does not usually devour the ladybird's tissue but feeds on cells derived from the parasitoid egg. When the larva is ready to pupate it emerges from the ladybird's abdomen, spins a silken cocoon between the host's legs and pupates. The unfortunate beetle is left to stand guard over the pupa. In this last stage of the wasp's development the ladybird is initially still alive but now prevented from feeding so it usually dies of starvation. However some do survive. Not a pretty tale but probably not greatly different to thousands of other relationships between parasite and host.

If you come across an example please report it to the UK Ladybird Survey who are monitoring the distribution and levels of parasitisation.

Acknowledgement

Many thanks to Helen Roy of the UK Ladybird Survey who provided me with information about *D. coccinellae* in the form of the text included in "Ladybirds (Coccinellidae) of Britain and Ireland" by Helen Roy, Peter Brown, Robert Frost and Remy Poland and the paper "Natural Enemies of Ladybird Beetles" by Piotr Ceryngier, Helen E. Roy and Remy L. Poland. Helen also provided photographs and ensured that the information about *Dinocampus coccinellae* presented in this tale is correct.

Keith Fowler

The County Recorder Network

This information is accurate at the time of press. All these people carry out their roles as volunteers and we are indebted to their hard work.

NEW INFORMATION

Spiders – The Shropshire Spider Group –
Email: nigel@canehoneysett.plus.com

Mayflies (Ephemeroptera) - Ian Thompson –
Email: salopladybirds@f2s.com

Dragonflies and damselflies (Odonata) Sue McLamb –
Email: mclamb1@btinternet.com

Terrestrial and Aquatic Bugs (Hemiptera) – Pete Boardman –
Email: pete@field-studies-council.org

Beetles (Coleoptera);

Long-horned beetles – Nigel Jones
Email: nigelj@insectpix.net

Ladybirds – Ian Thompson –
Email: salopladybirds@f2s.com

Other beetle groups – Pete Boardman
Email: pete@field-studies-council.org

True Flies (Diptera);

Hoverflies – Nigel Jones –
Email: nigelj@insectpix.net

Larger Brachycera (robber flies, horse flies, soldier flies etc), tachinid flies, conopid flies and picture-winged flies – Nigel Jones
Email: nigelj@insectpix.net

Craneflies – Pete Boardman –
Email: pete@field-studies-council.org

Leaf-mining flies (Agromyzidae) – Godfrey Blunt - **NOTE – new instruction**
Email: blunt.sig195@btinternet.com

Other fly groups – Pete Boardman –
Email: pete@field-studies-council.org

Butterflies and moths (Lepidoptera);

Butterflies – Tony Jacques
Email: b-mcvc40@talktalk.net

Macro-moths – Tony Jacques
Email: b-mcvc40@talktalk.net

Micro-moths – Godfrey Blunt
Email: blunt.sig195@btinternet.com

Hymenoptera,

Aculeates (bees, wasps and ants) and sawflies – Ian Cheeseborough –
Email: ian.cheeseborough@yahoo.co.uk

Others

Plant Galls (of whichever taxonomic order including mites) – Godfrey Blunt
Email: blunt.sig195@btinternet.com

Orders not mentioned above: Pete Boardman –
Email: pete@field-studies-council.org

Dates for your diary

Here is a selection of entomological goings on in Shropshire and elsewhere that I am aware of.

15/04/12 **Shropshire Spider Group**

Field trip to Ironbridge Gorge and Telford. Contact Mike Fallon for more details; michaelfallon@btinternet.com

02/05/12 **Shieldbug recording day**

Oswestry area – sites to be arranged depending on interest. Contact Pete Boardman

09/05/12 **Shieldbug recording day**

Market Drayton area – sites to be arranged depending on interest. Contact Pete Boardman

15/08/12 **Shieldbug recording day**

Ludlow area – sites to be arranged depending on interest. Contact Pete Boardman

22/08/12 **Shieldbug recording day**

South west Shropshire (Clun) area – sites to be arranged depending on interest. Contact Pete Boardman

12/09/12 **Shieldbug recording day**

Market Drayton area – sites to be arranged depending on interest. Contact Pete Boardman