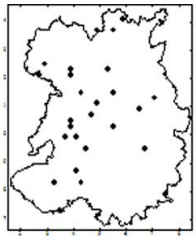

A bi-annual newsletter focussing upon the study of insects and other invertebrates in the county of Shropshire (V.C. 40)

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~ Welcome ~

Welcome to the 10th edition of Shropshire Entomology. It is fabulous to be able to continue with the production of Shropshire newsletters, though on a slightly different footing to those previously. As regular readers will know, I was made redundant from my post at the Field Studies Council at the end of 2014 after an eight year tenure as a Project Officer based at Preston Montford. As my future is still unclear Nigel Jones has volunteered to take on co-editing duties and potentially full editing duties should I need to relinquish my involvement with this newsletter this year? I am very grateful to him for stepping in. I'm also very grateful for some SEDN / FSC funding to enable me to spend time on this edition and to Adrian Pickles at Preston Montford for letting me use the facilities at PM to prepare Vol.10.
This edition includes several County Recorder summaries of 2014 as well as a mixture of other articles as usual. I hope you find it enjoyable. It is hoped that Vol. 11 will follow in October. Therefore if you fancy sharing your entomological experiences from the summer please send any articles to me by Wednesday 30th September 2015 at the address above.

Pete Boardman

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

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The FSC Invertebrate Challenge insect reference collection

I was delighted at the response to come and help with the important invertebrate collection housed at Preston Montford. This is a wonderful testament to the dedication of Invertebrate Challenge volunteers and of course Pete Boardman. The collection is in good condition and the team changed insecticide and silica gel to keep it that way. A vast amount of work was also carried out in the painstaking business of confirming any identifications, starting to integrate new material and smartening the labels. This has resulted in it becoming even more useful with space for new additions and very clear labels with the most recent taxonomic names. This is detailed and time consuming work and I am personally so very grateful to all for giving up their time and expertise to help maintain this collection. The work will ensure that the specimens remain accessible to all entomologists to check records, confirm identification with a specimen and to see the range of variable presentations for many species.

Volunteers working on the insect collection at Preston Montford (Photo: Sue Townsend)

The next Collections day is at Preston Montford in the Wenlock lab at 10:00 on Thurs 2nd April. Please let me know if you can attend (*my contact email is at the end of this article*)

Thanks to Steve Falk, we are lucky to have some further fly specimens including the rare *Phaonia jaroschewskii*, Hairy Canary Fly (Muscidae) – to quote Steve's website; 'This is a medium-sized, rather nondescript *Phaonia* (resembling *P. rufipalpis* or a small *P. falleni*) but closer inspection of the male hind legs reveals a unique configuration of bristles and hairs combined with a fan of very strong anteroventral bristles in the apical half of the hind femorae. This species has been recorded from Dorset, Hampshire, Shropshire, Yorkshire and Durham. The term 'Hairy Canary' was coined by the great Yorkshire entomologist, Peter Skidmore (1936 – 2009), when attempting to protect Thorne Moor and Hatfield Moor from peat cutting. He regarded the fly as a barometer of peatland health (hence the canary bit) with reference to its hairy back legs. It has been reared from a puparium found in *Sphagnum* moss and larvae are presumed to be predatory on other invertebrates in such situations.

Phaonia jaroschewskii (Photo: Steven Falk)

This is a rare species mostly recorded from *Sphagnum*-rich, base-poor peatlands, including raised bog, valley mire and boggy woodland clearings. In 2011, a strong population was discovered in coastal grazing marsh along the Hampshire coast near Lymington suggesting it may not be quite as restricted to peatlands as previously thought, though the ditches of coastal marshes along this stretch of coast often feature species more characteristic of valley mire in the New Forest (one of its strongholds)'.

P. jaroschewskii is a UK Priority species subject to a JNCC action plan: jncc.defra.gov.uk/speciespages/2496.pdf.

This information is supplied by Steven on his fabulous Flickr site; https://www.flickr.com/photos/63075200@N07/sets/72157632827488537/#

[Ed. this species was found at Fenn's, Whixall & Bettisfield Mosses NNR by Cyril Pugh in 1940. It has not been recorded there since but could still be present given the recent program of bog restoration carried out by Natural England / Natural Resources Wales]

There are several Invertebrate Challenge legacy courses running this year – please have a look at the 'Dates for your Diary' section for further details and booking links.

Sue Townsend sue.t@field-studies-council.org

Attempting to Master Entomology

"Glow worms? In Telford? Seriously?" is along the lines of what I was thinking in late September, 2005, having just started a University placement at Severn Gorge Countryside Trust (SGCT). I was looking through ecological survey reports for various species and habitats to get a feel for what inhabited the Ironbridge Gorge.

At the time I was a student at Harper Adams University College, studying BSc Countryside & Environmental Management, and the course included a placement year for developing skills and knowledge of the sector.

Birds and mammals had always been my main focus of interest in the natural world but ultimately everything natural got my attention. Insects had been an interest ever since I bred my first colony of 7-spot Ladybirds *Coccinella septempunctata* in a plastic Ferrero Rocher box at the age of six-years-old. However, they had kind of slipped down the pecking order in my priorities over the years. That is until the Glow worm *Lampyris noctiluca* came into my life.

These creatures to me were those of myth and legend. Perhaps this was naive of me, but as I had never encountered them I had never thought to look them up in my numerous natural history books. Anyway, I sat down with the reports and devoured them! The reports I mean, not the Glow worms.

Amongst the records for White-letter Hairstreak *Satyrium w-album*, Dingy Skipper *Erynnis tages*, Scarce Yellow Splinter *Lipsothrix nigristigma* and the aforementioned *L. noctiluca*, was another name new to me - Pete Boardman. There was no scientific name coupling what turned out to be the surveyor of this land of woods, meadow, and remnant heath. I had stumbled upon Mr Cranefly!

The more I read, the more I walked in the woods, the more I observed the birds and mammals, the more I surveyed trees, the more I noticed. And the more I thought and reflected upon these moments, the more I saw the link: insects. They had always been in my thoughts but typically subconsciously. While watching Badgers *Meles meles* at the sett I would be harassed by

mosquitoes (species unknown). When looking to the skies in summer as the Swifts *Apus apus* screeched by feeding I would note plumes of insects. And sitting quietly in the heathland I would observe Common Lizards *Zootoca vivipara* hunting insects amongst the grasses.

During the intervening years I have been fortunate to work full-time at SGCT, carry out ecological surveys in remote parts of Australia, and work on numerous ecological surveys in the UK. Nearly ten years have passed and I am back studying at Harper Adams. This time I have opted to concentrate entirely on insects as I study MSc Entomology.

The main reason for me choosing this course is the realisation that insects, although incredibly numerous and diverse in species, are astonishingly undervalued in the world of ecology. Great Crested Newt *Triturus cristatus* and the bat species resident in the UK are the focus of thousands of surveys every year, yet how many of these surveys take in to consideration insects? I say insects as the bats and newts feed on them. In fact they depend on them for their survival.

I am not going to change the world. I am not going to be involved with every survey of bats. And I am most definitely not going to preach about the importance of insects. However, the more I can learn, the more I feel I will be able to contribute to their protection, understanding, and appreciation amongst others.

I knew that the course would be a steep learning curve. It has definitely proved to be so but what an enjoyable experience. I am studying full-time for a year and since September I have studied modules covering biology and taxonomy, diversity and evolution, ecological principles and decision tools, and advanced research methods. Professor Simon Leather heads the experienced and passionate team of entomologists teaching us. Experts from the entomology world who visit Harper Adams and give great in-depth lectures complement this team. Max Barclay (Coleoptera), Dr Erica McAlister (Diptera), Steve Brooks (Odonata), and Dr Amoret Whitaker (forensic entomology), all from the Natural History Museum, are amongst the guest lecturers who I have had the pleasure to meet.

Of course nowhere near everything regarding the subject of entomology can be covered, even in a year, but we are exposed to everything from biological control to curation, population dynamics to life cycles, taxonomy to computer modelling, and the list goes on.

I have just completed yet another assignment. Writing you will probably assume. Yes, writing is involved but the focus is the collection and presentation of 10 insect species. The development of my collection began last September with collecting of specimens out in the field. They have gradually been collected and stored in the bottom drawer of the freezer until quite recently. The main reason being that I needed to build up the courage to pin and point them. This has been an extremely interesting exercise but also quite scary when worried that the specimen will break. A couple of legs have been lost but I am happy overall with the pinning and the development of my knowledge. I do believe we learn more when we get hands-on and this course allows for such experience through lab lessons using microscopes and the collection of insects.

Assignment specimens (Photo: Andrew Cutts)

Gradually, I can feel my language changing when talking about insects. Nowadays when in discussion about entomology I will readily speak of the coxa, halteres, chitin, pronotum etc. Initially these words seemed like a foreign language but as I further my understanding of them, and observe such features in detail, I gain more confidence in the use of them.

The Royal Entomological Society (RES) generously supported my studies through the award of a bursary. A visit to their headquarters was another highlight of the course. I got to see the inked signatures of Charles Darwin and Alfred Russel Wallace; that was a spine-tingling moment!

While on the subject of signatures, we had a visit from a VIP the other day at Harper Adams. I'm not one for name-dropping but the said person was none other than HRH The Princess Royal. I had a brief chat with her after she had officially opened the Jean Jackson Entomology Building. She then went on to sign the visitor book right before my very eyes. Cursive style in ink was the approach to simply writing large in the centre of the page, 'Anne'.

Meeting The Princess Royal and chatting about entomology (Photo: from The Shropshire Star)

I continue to meet interesting people directly or indirectly related to entomology and was grateful to Sue McLamb, County Recorder for Odonata, for allowing me access to her collection of exuviae. They were photographed and included in my video promoting Odonata. The video 'A-Z of Entomology: D is for Dragonflies and Damselflies' is available to view here: http://youtu.be/_JjpqRq8cOY

Still from Andrew's A-Z of Entomology: D is for Dragonflies and Damselflies (Photo: Pete Boardman via You Tube)

As you've probably realised, I could go on and on about insects and my studies. I will stop now but would just like to say thank you to all the people I have met so far on my entomology journey. You have all taught me something valuable whether you realise or not and without your enthusiasm, knowledge, and support, I would not have had the confidence to study MSc Entomology.

Shropshire Diptera Report (Brachycera)

There was lots of recording activity during 2014, with more people contributing records of flies than ever before, a gratifying outcome to the Invertebrate Challenge project. Our County Spider Recorder, Nigel Cane-Honeysett made a contribution, courtesy of his vacuum sampling activities, which provided numerous specimens of Diptera that are not often, or at all,

encountered by the usual Diptera catching techniques, such as sweep netting. Keith Fowler recovered the Opomyzid fly *Geomyza subnigra* Drake, 1992, from one of Nigel's vacuum samples at Old Oswestry Hill Fort on 20 April. This is a certain new Shropshire species, as in this case the species was unknown in Wallace Pugh's time, so we don't need to say it's new, pending investigation of Pugh's records. In the Reabrook Valley, on 10 September I recovered a few small Diptera from one of Nigel's vacuum samples and made records for the Drosophilid *Lordiphosa andalusiaca* (Strobl, 1906) and the Chloropid *Chlorops limbatus* Meigen, 1830. Both are probably widespread flies, but seldom recorded on account of their inconspicuous size and habits.

Keith Fowler also recorded the large and early season Conopid fly *Conops vesicularis* Linnaeus, 1761 from Comer Wood, Dudmaston on 18 May. He also made an unusually late record for this Conopid on 30 July, from woodland at Randlay, Telford. *C. vesicularis* is infrequently recorded from Shropshire, but in the last five or so years there have been records made in most years. It is usually encountered in woodlands. At the other end of the season Keith recorded the rather scarce Conopid *Leopoldius signatus* (Wiedemann, 1824) on 13 September in the Rea Brook Valley. Another noteworthy record from Keith was the robber fly (Asilidae) *Machimus cingulatus* (Fabricius, 1781) which is much less common than its widespread congener *M. atricapillus* (Fallen, 1814). *M. cingulatus* is nearly always found in situations with free draining (particularly sandy) soils. Keith's record is from Ironbridge on 29 July.

Rare (VERY) and scarce flies recorded from Shropshire in 2014

Perhaps the most exciting Shropshire Diptera find of recent years came from Devil's Dingle, Buildwas; a site that continues to furnish us with new species and seemingly endless entomological excitement. On 20 June I swept over an area of damp and saturated ground on ash waste soils, close to a woodland edge. It was not until autumn that I turned my attention to the samples swept that day. When sorting through the sample I was on the verge of chucking out yet another small common *Empis* look-a-alike, as one I had already determined several times, when I stopped and thought, "that looks a bit different". On closer inspection it very much looked like the extremely rare *Empis limata* Collin, 1927; a BAP Priority Species known as the borders dance-fly.

Empis limata (Photo: Nigel Jones)

The borders in question are the Welsh/English borders from whence until recently it was the only place on the planet that this fly had ever been found! The Buildwas specimen appears to be one of less than 20 that have ever been recorded. In 1998 two specimens were taken in Romania, so that *E. limata*, although still incredibly rare, can no longer be considered a British endemic.

In the last edition of Shropshire Entomology I reported on the discovery of the southern silver stiletto fly *Cliorismia rustica* Panzer, 1804 from sandy deposits along the Cound Brook. The exposed riverine deposits along the Cound Brook also provided records for five other interesting Diptera:

- *Tachydromia woodi* Collin, 1926 – a nationally scarce fly, swept on 24 & 29 June from Condover and Eaton Mascott;
- *Tachydromia morio* Zetterstedt, 1838 – A possible first Shropshire record (I need to check through Pugh's archive) of a fly with a north-west British distribution, swept on 24 June from Condover;
- *Tabanus cordiger* Meigen, 1820 a largish horsefly that appears to be associated with gravelly streams. Two females of this nationally scarce species were recorded from near Condover and Eaton Mascott on 24 and 29 June respectively.
- *Lonchoptera nigrociliata* Duda, 1927 a nationally scarce "pointed wing fly" of riverine sediments, swept on 22 June. It was also recorded from the Rea Brook in Shrewsbury in 2014;
- *Spilogona scutulata* (Schnabl, 1911) a nationally scarce, rather drab Muscid fly, swept near Condover on 24 June;

On 7 May, Dan Wrench picked up a single *Tachydromia* specimen from a post at Eardington Nature Reserve. Amazingly, as Dan is not in the habit of collecting small Diptera (this one was about 3mm length), his capture turned out to be, not *T. umbrarum* Haliday, 1833, by far the most common *Tachydromia*, but *T. smithi* Chvála, 1966 – only the fourth British record for this fly, since it was discovered in Britain just eight years ago (Gibbs, 2006).

Tachydromia smithi (Photo: Nigel Jones)

Most *Tachydromia* are smartly marked with dark wing bars and they are almost always seen (as was Dan's) running about on tree trunks and posts. It will be worth sampling any such flies to see if we can find more sites for *T. smithi* in Shropshire. I'll be happy to identify any specimens captured. By the way it is good sport trying to catch them with a small tube or pooter, as they have an unerring ability to run swiftly forward or sideways to avoid capture. Although they rarely fly off, they are a big challenge to get into a tube.

Survey work at The Bog (SO3597) for the Shropshire Hills AONB Partnership provided some noteworthy Diptera. Among these was the all orange coloured Psilid fly *Psilosoma lefebvrei* (Zetterstedt, 1835).

Psilosoma lefebrvrei (Photo: Pentii Ketola)

This is probably a Shropshire first (I don't yet know whether or not Wallace Pugh got there first). *P. lefebvrei* is a rather infrequently recorded fly in Britain and also, it would appear, across Europe*. Shatalkin & Merz (2010) say that it is "not uncommon in Switzerland in higher altitudes of the Alps" where it may often be swept from large stands of *Alnus viridis* (green alder). At The Bog, an upland location, I swept one from a stand of Alder and willow.

Following a review of British Chyromyidae (the so-called "golden-eyed flies"), David Gibbs added *Chyromya miladae* Andersson, 1976 to the British list (Gibbs, 2007). At that time Gibbs knew of just two specimens from Britain and considered it as appearing to be "a rare or elusive species". On 18 June 2014 I swept a male *Chyromya* from the Rea Brook Valley (SJ505117), which I initially determined as *C. femorellum* (Fallén, 1820), but later, remembering that Gibbs had revised the British species, I checked his key and descriptions to find I had in fact captured *C. miladae.* This is of course a new Shropshire species and is a very notable record for the Rea Brook Valley. David Gibbs knows of no further British records and neither does *Chyromya* specialist, Martin Ebejer at Cardiff Museum, so this is almost certainly one of very few British records for *C. miladae.*

Also from the Rea Brook Valley, the Tephritid *Euphranta toxoneura* Westwood, 1840 was swept from willow trees on 10 June. This is the third Shropshire record for this nationally scarce species. Previously it has been found by Steven Falk has at Hencott Pool and Pete Boardman at Preston Montford. Most unusually for a Tephritid fly, *E. toxoneura* is not phytophagous. It parasitises *Pontania* Costa, 1859 sawfly larvae inside their galls on willow leaves.

Cinochira atra Zetterstedt, 1845 at 2-3mm length is the smallest Tachinid on the British list. Amongst a bunch of small fry swept from Loamhole Dingle on 24 May 2011, I recently found a single male. I had not even recognised it as a Tachinid in the first instance and had thus put it back into store awaiting determination, which I eventually achieved in February 2014. *C. atra* frequents the edges of damp woodland and is a parasitoid of ground bugs ((Hemiptera, Lygaeidae). Although its tiny size no doubt leads to under recording, there have been records from few counties in recent decades, so this is considered a potentially Nationally Scarce species. It's probably another county first too.

Finally, it will come as little surprise to learn that Devil's Dingle has provided yet another Nationally Scarce species. I swept several distinctive, small, shiny black Muscid flies from the site in 2013 and again in 2014. When I eventually mustered the courage to try and determine them, they in fact keyed out very readily as *Coenosia atra* Meigen, 1830.

Coenosia atra (Photo: J A van Erkelens)

C. atra has been recorded from scattered localities across the southern half of England and Wales. It is associated with marshy areas in various habitats and is suspected of undergoing a range extension in Britain.

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*I posted an enquiry to the Diptera community on the Facebook Diptera Group page, asking had members encountered *P. lefebvrei* at all across Europe? Responses indicated that it is very infrequently recorded.

Nigel Jones vc40insects@taltalk.net

Shropshire Diptera Report (Nematocera)

I once more focused on the Tipuloidea out of the wider group of Nematoceran flies during 2014. The key species found during the year are as follows;

- *Molophilus ater* (Meigen 1804) – new to Shropshire (collected Nigel Jones). Location – close to The Stiperstones NNR. This species is associated with wet moorland and blanket bog and is one of very few flightless craneflies. New Axiozoan.
- *Dicranomyia (Dicranomyia) ornata* (Meigen, 1818) – 2nd Shropshire record and 1st sighting since the 1990's. Location – Haybridge (South Shropshire). This species is associated with butterbur close to stream banks but appears to be genuinely uncommon.

Photo: *Dicranomyia ornata* (Pete Boardman)

- *Scleroprocta sororcula* (Zetterstedt, 1851) – 2nd & 3rd Shropshire records – Locations – Cound & Rea Brook Valley. Associated with wet woodland.
- *Gonomyia (Prolipophleps) abbreviata* Loew, 1873 – 4th Shropshire record. Associated with fen carr and calcareous seepages though this individual was taken from a wet area in a sand quarry near Bridgnorth.
- *Nephrotoma crocata crocata* (Linnaeus, 1758) – 5th (Bex Cartwright) & 6th (Steve Sprules-Wright) Shropshire records. This species is known from a variety of sites in Shropshire. Some have a sandy substrate, some peat, and one calcareous site. Locations – Devil's Dingle & Eardington NR
- *Molophilus (Molophilus) niger* Goetghebuer, 1920 – 6th Shropshire record. Regionally uncommon species found in South Shropshire woodland dingles. Location – Haybridge.
- *Hoplolabis (Parilisia) areolata* (Siebke, 1872) & *Hoplolabis (Parilisia) vicina* (Tonnoir,

1920). Both species associated with sandy river corridors. Relatively frequent in Shropshire but quite uncommon nationally. Locations – Rea Brook Valley & Cound.

Following 2014's work I have updated the list of axiozoan species for Shropshire which now stands at 45 species of craneflies. Axiozoans are those species of national importance (S41 / UK BAP / old 'Red Data Book' / Nationally Scarce or uncommon species associated with Priority Habitats such as dead wood, lowland raised mire, calcareous flushes etc).

A total of 815 cranefly records were added to the SEDN database and 63 records of other Nematocera) and were received from (in no particular order); Pete Boardman; Keith Fowler, Brian Harding, Gordon Leel, Jim Cresswell, John Bingham, Kat Woods, Marc Taylor, Maria Justamond, Nigel Jones, Bex Cartwright, Sue & Gwyn Hiatt, Graham Wenman, Catharine Wenman, Nigel Cane-Honeysett, Fiona Gomersall, Michelle Furber & Warren Putter, David Williams, Sue Townsend, Glenn Rostron, Steve Sprules-Wright (via Dan Wrench), Liz Wright, Lis Dalby, Mark Ecclestone, Tony Jacques, Stephen Mitchell, and Rich Burkmar.

Pete Boardman

Shropshire Orthoptera & allies in 2014

After 2013's batch of 'county firsts', 2014 was a quieter year of record accumulation. The usual small band of recorders submitted valuable records, Keith Fowler & his band of Wrekin Forest Volunteers being particularly sterling in their efforts. A couple of hundred records came directly to me, and a trawl of *iRecord* (I am now a verifier) brought in a further hundred or so. The Shropshire database now stands at just over 1200 records.

The lack of historical records for this group in Shropshire can be gauged by the fact that 2014's *Invertebrate Challenge* project in Rea Brook Valley generated a rash of new site records – there were no Orthopteroid records at all for either of the RBV tetrads. Finding both speckled bush cricket, *Leptophyes punctatissima* (Bosc, 1792) and oak bush cricket, *Meconema thallasinum* (De Geer, 1773) on site was particularly pleasing.

The season got off to a good start when, in March, Nigel Jones, following David Baldock's advice (reproduced in my own 'Guide' – details below) unearthed good numbers of lesser earwigs, *Labia minor* (Linnaeus, 1758) in his compost bin.

Photo: lesser earwig at Callow Hill (David Williams)

This was only the third Shropshire site record for the species. Godfrey 'Hawk Eye' Blunt subsequently spotted one of the tiny creatures scuttling across his path on a SIG field trip to Callow Hill in September, for site record number four.

Last year's new discoveries all appear to be doing well. The colony of lesser marsh grasshoppers, *Chorthippus albomarginatus* (De Geer, 1773) at Coalmoor seemed very large when we visited the site for an Orthopteroids

identification training day in August, even in the prevailing cold, grey conditions.

Photo: Female lesser marsh grasshopper at Coalmoor (David Williams)

Similarly, the colony of long-winged coneheads, *Conocephalus fuscus* (Fabricius, 1793) at Devil's Dingle was in good voice (when heard with a bat detector) when visited in September and seemed to have spread across the site somewhat. Best of all, Roesel's bush cricket, *Metrioptera roeselii* (Hagenbach, 1822), found at two sites in 2013, produced records from three further tetrads in 2014. Two of these were singleton singing males (the one I eventually managed to find was the long-winged, dispersive form). The third new site record was of a sizeable colony at Stoney Hill local wildlife site in Telford. Added to the large numbers at nearby Devil's Dingle, this means that the species does now seem to have firmly established itself in the county.

2015 marks the final year of recording for the new National Atlas for this group. It would be good to get the best possible coverage of Shropshire's species in the maps. Grasshoppers & earwigs in particular are easily found as 'bycatch' when searching for many other groups. And whilst the many colour forms of grasshoppers can be initially confusing, most usually admit to ready identification by checking a few, easily seen field characters. Their songs are also distinctive. I have produced a guide to the Shropshire species which can be found here: http://www.invertebrate-challenge.org.uk/media/1145616/guide_to_shropshire_orthopteroids_v12.pdf

A Guide to the Shropshire Orthoptera and Dermaptera

by David W. Williams

Excluding escapes and naturalised aliens (eg Egyptian grasshopper, house cricket) thirteen species of Orthoptera (grasshoppers, crickets etc) and three species of Dermaptera (earwigs) have been recorded in Shropshire. Two further species currently occur in adjacent counties. Cockroaches & mantids (Dictyoptera) are also included within the 'orthopteroid' insects (as are phasmids). Britain has three native species of cockroach, but it is unlikely that any of them will turn up in Shropshire (though there are old records of Oriental cockroach, an established alien inhabitant of artificially heated places). This guide is intended to cover all the species likely to be encountered in the field in Shropshire.

Orthoptera: Caelifera: grasshoppers (5 spp.), groundhoppers (2 spp.)

Grasshoppers are insects of high Summer. They overwinter as eggs, hatch in Spring and mature during June and July, persisting into Autumn.

Groundhopper life-cycles are more variable. They overwinter as either nymphs or adults and can be found as adults in any month of the year, though there is a peak of activity in Spring.

Sexing Grasshoppers

Identification of grasshoppers can sometimes be helped if the gender of the insect is established. Several features separate the sexes. The main picture, left, shows a pair of meadow grasshoppers. Notice that the male is smaller than the female, but has obviously longer antennae. This is true of all British grasshoppers. He also has relatively larger eyes and longer wings, though these differences can be very subtle in some species (in meadow grasshoppers, females have particularly short wings).

The lower pair of photographs show the difference in the abdominal tips of the two sexes (in this case both are mottled grasshoppers). Males' abdomens tend to be snub & upturned, whereas females' taper more evenly from both above and below.

Singing grasshoppers can be assumed to be male. In fact both sexes can sing. However female song is very quiet & rarely heard, being used only in courtship, as a signal to the male that she is ready to mate.

Grasshopper Wings

Late instar nymphs can look quite similar to adults. They are best told by their wings, which in nymphs are present only as 'wing buds'.

Adult female meadow grasshoppers typically have very short wings, which can lead to confusion with nymphs.

Top left: adult female meadow grasshopper. Note that the wings have 'adult' venation ie a network of veins enclosing many small cells.

Top right: late instar nymph (field grasshopper). Note the wing buds, which lack a defined network of veins and cells. All four wings are at least partly visible, whereas the hind wings are always hidden by the fore wings in adult meadow grasshoppers. The wings are reversed, with the hind wings lying on top of the fore wings and the costa (stiffened 'leading edge') uppermost.

Meadow grasshoppers are typically flightless. However, a fully winged form can occur. It is uncommon, but worth being aware of where high population densities occur. Both males and females produce forms with longer wings than normal and which are capable of flight.

Bottom left: long-winged male meadow grasshopper (with missing leg).

Bottom right: typical male meadow grasshopper, with wings distinctly shorter than abdomen.

Grasshopper Pronota

In most cases, grasshoppers are most easily identified by their songs. But perhaps the single most important visual identification feature is the pattern on the dorsal surface of the pronotum (saddle-shaped plate behind the head). Three ridges run along it; one on the dorsal midline, the other pair on the lateral edges of the dorsal surface. These 'side keels' vary from straight and parallel to sharply inflexed, and are characteristic of species.

David Williams excellent PDF covering all Orthopteroids occurring in Shropshire (Photo: Pete Boardman)

David Williams

Terrestrial Heteroptera, the Auchenorrhyncha and Psylloidea (Hemiptera)

Terrestrial Heteroptera

The Heteroptera have forewings that are divided into two sections; the basal section is hardened and the apical section membranous.

Following the publication of "A provisional atlas of the shieldbugs and allies of Shropshire" (ed. Boardman, 2014) I took over the responsibility for the recording of this group alongside the other terrestrial heteroptera. However, the shieldbugs and allies remain in a separate national recording scheme to the rest of the terrestrial heteroptera.

Although there was no specific training given locally in terrestrial heteroptera during the year the recording of the group did benefit from the general increased knowledge and the opportunities for site surveys and visits given to recorders by Invertebrate Challenge. It was very satisfying to have been on many of these events and be approached frequently to confirm the identity of a bug.

Over the year the number of records on the Shieldbug and Allies county list increased to nearly 3600 covering 31 species and the Terrestrial Heteroptera list to 4200 records identifying 199 species. Species new to the county (subject to confirmation by the National Recorder) are listed below.

In view of the large increase in the number of shieldbug records I have produced an update of the provisional atlas. This does not attempt to be a second edition, it merely provides a refresh of the maps that have changed and an acknowledgement of the additional tetrads in which each species was found. Please let me know if you would like a copy. In addition I have a map and list of tetrads where no shieldbugs have yet been recorded (including all the fiddly ones around the edge of the vice-county). If you fancy doing some tetrad bashing and would like this as an aid please get in touch with me. My contact details are in "The County Recorder Network" later in this newsletter.

Coreidae

- *Ceraleptus lividus* Stein, 1858 Slender-horned leatherbug. How satisfying it must be when a prediction comes true within a year of its commitment to paper! In the provisional atlas, Pete suggested that this may be coming our way. And so it turned out to be when John Bingham identified it amongst a collection of Denticulate leatherbugs found by Denise Bingham at Dudmaston (Fowler, 2014).

Lygaeidae

- *Megalonotus chiragra* (Fabricius, 1794) was collected from moss in a roadside verge at Devil's Dingle, Buildwas in May 2014.
- *Megalonotus dilatatus* (Herrich-Schäffer, 1840) was sifted from vegetation amongst the crags at Pontesbury Crags in September 2014.
- *Peritrechus lundii* (Gmelin, 1790) was found in a sandy area of an industrial estate in Bridgnorth by Pete Boardman in June 2012. The specimen is in the Preston Montford reference collection.

Miridae

- *Amblytylus nasutus* (Kirschbaum, 1856) photographed at Upton by Maria Justamond in June 2014. Maria found a second in Lodge Field, Telford in July. British Bugs states that this is a common bug in southern England in dry grasslands and on waste ground.
- *Charagochilus gyllenhalii* (Fallén, 1807) found by an anonymous donor in grassland during the Stiperstones bioblitz in August 2014. It is associated with bedstraws growing in open situations (British Bugs).
- *Chlamydatus wilkinsoni* (Douglas & Scott, 1866) a small black bug found in short grassland usually associated with upland areas (British Bugs). It was found by Andy Cherrill on the Long Mynd in July 2014.
- *Dichrooscytus gustavi* Josifov, 1981 is a rather colourful green and reddish-brown

mirid bug. It was found on an unidentified conifer in June 2014 by Jim Cresswell at Eardington NR. A second specimen was found on a cypress at Pennerley in August.

- *Dicyphus annulatus* (Wolff, 1804) is a distinctive bug with dark antennae which have white bands on the first and second segments. It is usually found on restharrow and so it turned out to be when it was located on this plant during a bug hunt at the Beeches, Ironbridge in July 2014.
- *Halticus apterus* (Linnaeus, 1758) was collected from a meadow in the Wyre Forest in July 2014.
- *Lygocoris rugicollis* (Fallén, 1807) was found at Langley Fields in Telford in June 2014 by Margaret Mitchell. A second specimen was taken from willow at Tilstock a couple of days later.
- *Megalocoleus tanaceti* (Fallén, 1807) was photographed by Maria Justamond at Atcham in July 2014. It is normally found on tansy (British Bugs).

Megalocoleus tanaceti (Photo; Maria Justamond)

- *Pinalitus rubricatus* (Fallén, 1807) was found at Pennerley in August 2014. It was taken from a fern in the vegetation bordering a lane.
- *Psallus assimilis* Stichel, 1956 was collected from a field maple bordering a path through the Rea Brook Valley in June 2014. *Psallus* species are difficult to identify usually requiring examination of the male genitalia for determination. The time of year and host plant can provide clues but in general there is no alternative to extracting the aedeagus.
- *Psallus pseudoplatani* Reichling, 1984 was found on sycamore in Rea Brook Valley at the same time as the *P. assimilis* noted above.

Tingidae

- *Acalypta parvula* (Fallén, 1807) found on the Long Mynd by Andy Cherrill in August 2013 using suction sampling. Found again on the Long Mynd by the same method in July 2014. Look for it in amongst moss.
- *Eurygaster testudinaria* (Geoffroy, 1785) - Tortoise Bug.The Wyre Forest was the only site where this bug has been found. Indeed an additional tetrad was added to its range in the Wyre Forest this year. But now it has turned up in the opposite corner of the county when Jim Fairclough found it by the main pool in Dolgoch Quarry. So the challenge is on to find it elsewhere.

Eurygaster testudinaria (Photo: Keith Fowler)

Notostira confusion and advice

Notostira elongata (Geoffroy, 1785) is a common bug frequently found in grassland in Shropshire. There is a second very similar *Notostira* species – *N. erratica* which, it was believed, is found only in Ireland, so identification of the Shropshire species was straightforward. Nelson, 2014 has now reported that *N. erratica* is present in Britain, having been found in Oxfordshire in 2013.

Notostira elongata(?!) (Photo: Maria Justamond)

The advice from Jim Flanagan, the National Recorder, (pers. comm.) is that any records which are not supported by a male specimen should be recorded as *N. elongata* agg. Males can be examined and determined to species.

Nelson, 2014 gives the separation of the two species based on the shape of the apex of the males' left paramere. In *N. elongata* the apex is large and bulbous; it is asymmetrical about a robust apical projection. In *N. erratica* the apex is much less bulbous and nearly symmetrical about the much smaller apical projection.

Something is not quite right

As we all know not everything in the natural world is perfect. The following photograph shows two *Closterotomus norwegicus* Gmelin, 1790 - Potato Capsid on Knapweed. The one on the right displays the usual two black dots on its pronotum but the one on the left seems to have a black pronotum. Howver, if you look carefully then you can see that the pronotum is distorted and has not formed properly to cover the underlying darker tissue.

Closterotomus norwegicus (Photo: David Williams)

Auchenorrhyncha

The Auchenorrhyncha, sometimes called "hoppers", have forewings that are uniform in texture and have short antennae with terminal bristle and 3-segmented tarsi.

Alan Stewart, the National Recorder, once again journeyed to Preston Montford FSC to present

his Introduction to Planthoppers course. Unfortunately it seems to have slipped off the schedule for next year so anyone wanting training in these insects will, unfortunately, need to travel further afield.

As with the terrestrial heteroptera the recording of this group has also benefitted from the general increased knowledge and the opportunities for site surveys and visits given to recorders by Invertebrate Challenge. As a result the county list has grown to nearly 2300 records covering about 190 species. Species new to the county (subject to confirmation by the National Recorder) are listed below.

Cicadellidae

- *Alebra viridis* Rey, 1894 was found by John Bingham in Bell Coppice in the Wyre Forest in July 2014. It is usually associated with oak (Nickel, 2003)
- *Anaceratagallia ribauti* (Ossiannilsson, 1938) was separated by Jim Cresswell from material collected by vacuum sampling in grassland at the former limestone quarry Lea Quarry, Wenlock Edge in October 2014.
- *Arboridia parvula* (Boheman, 1845) was another victim of vacuum sampling in the calcareous grassland in Lea Quarry, this time in March 2014.
- *Edwardsiana alnicola* (Edwards, 1924) lived up to its name and was swept from alder in Randlay Valley, Telford in July. According to Nickel, it is usually associated with alders in moist to wet sites, often near water. It is listed as Nationally notable B and there are very few records on the NBN but those that are present are scattered around the country. Is it genuinely scarce or is it under-recorded due to the difficulty in identifying many of the *Edwardsiana*?
- *Edwardsiana avellanae* (Edwards, 1888) found on hazel in a meadow at Pennerley in August 2014.
- *Edwardsiana diversa* (Edwards, 1914) recorded in 2011 by Pete Boardman at Shakespeare Meadow, Ironbridge. According to Nickel, 2003 it is found on dogwood in a variety of habitats.
- *Edwardsiana lethierryi* (Edwards, 1881) was swept from a field maple bordering a path in Rea Brook Valley in June 2014.
- *Edwardsiana spinigera* (Edwards, 1924) came to a light trap by the Montgomery Canal, at Queen's Head one evening in July. Nickel, 2003 gives its host plant as hazel.
- *Eupteryx filicum* (Newman, 1853) was beaten from a fern on Pontesbury Crags in September 2014
- *Eurhadina ribauti* Wagner, 1935 was collected from a path across farmland near Much Wenlock in July 2013. Nickel, 2003 states that it is associated mainly with oak but may occur on other trees, breeding only on oak.
- *Fagocyba carri* (Edwards, 1914) was swept from a mature oak in the meadow bordering Apley Pool in Wellington in August 2014.
- *Grypotes puncticollis* (Herrich-Schäffer, 1834) was beaten from a Scot's pine in Eardington Quarry in August 2014. A second specimen was found, also in Scot's pine, at Shawbury Heath a few days later.
- *Kelisia guttula* (Germar, 1818) was swept from grass at Dolgoch Quarry late in August 2014 by A Green. Nickel gives its food plant as *Carex flacca* (and possibly other low growing sedges) in temporarily dry or moderately wet sites on nutrient-poor soils.

- *Macrosteles laevis* (Ribaut, 1927) was swept from the grassland bordering Heath Farm at Dudmaston in June 2013. It was found subsequently at the following sites: Rea Brook Valley; Eardington Quarry; Apley Woods, Wellington and Earl's Hill. Unfortunately many *Macrosteles* species require examination of the male aedeagus to determine the species.
- *Populicerus nitidissimus* (Herrich-Schäffer, 1835) came to a light trap set up by the Montgomery Canal at Queen's Head in July 2014.
- *Psammotettix confinis* (Dahlbom, 1850) was swept from grass bordering a ditch in Devil's Dingle, Buildwas in July 2014. Six more were recorded in the following three months.
- *Tremulicerus vitreus* (Fabricius, 1803) was collected from a cypress in Eardington Quarry by Jim Cresswell in August 2014. Brirish Bugs states that they are usually found in poplars and sometimes sallows, females often overwintering on conifers.
- *Wagneripteryx germari* (Zetterstedt 1840) a species found on pines (British Bugs) was swept from Scot's pine in June 2014 in Eardington NR.
- *Zygina schneideri* (Günthart, 1974) was collected by Pete Boardman from Sutton Wood, Coalport in September 2011.

Delphacidae

- *Criomorphus williamsi* China, 1939 was found by Nigel Cane-Honeysett in grassy marginal vegetation in Whitchurch in June 2014. This was an interesting find. The NBN lists only 19 records, all to the east of the country. British Bugs states that it is found on grasses, usually in lush, damp places such as woodland edges.
- *Euconomelus lepidus* (Boheman, 1847) was swept by Andy Cherrill on the Long Mynd in August 2013. According to British Bugs it is found on *Eleocharis* (sedge).
- *Muellerianella brevipennis* (Boheman, 1847) was found in grassland during the Stiperstones bioblitz in August 2014.
- *Paraliburnia clypealis* (Sahlberg, 1871) is another predominantly eastern resident of Britain that was found in Greenfields SWT Reserve within a vacuum sample of wet grassland.

Well camouflaged?

There are only 6 records of *Ledra aurita* (Linnaeus, 1758) in Shropshire. The two I have seen have both been nymphs. British Bugs state that they are rarely seen due to their excellent camouflage which makes them blend in with the lichen on the branches of the trees with which they associate. Well someone forgot to tell this adult which was photographed by Martin George on a car.

Ledra aurita and *Automobilus ruber* (Photo:: Martin George)

Psylloidea

The Psylloidea, or Psyllids, are part of the Sternorrhyncha which have forewings that are uniform in texture and have long thread-like antennae and 1-2 tarsal segments. Nymphs of

some of the species cause galls or gall-like structures on their host plants.

Gall on Ash caused by *Psyllopsis fraxini* (Photo: Keith. Fowler)

This year 95 records have been added to the county list, boosted by the addition of a few that were recorded as plant galls on the SEDN. There are now just over 200 records on the list with a spread of 28 species. Species new to the county (subject to confirmation by the National Recorder) are listed below.

- *Cacopsylla brunneipennis* (Edwards, 1896) was swept from willow in Lea Quarry, Wenlock Edge in March 2014.
- *Cacopsylla sorbi* (Linnaeus, 1758) was found on Rowan in Rea Brook Valley in August 2014. A second, also on Rowan, was collected from Pennerley a couple of weeks later.
- *Cacopsylla ulmi* (Förster, 1848) was beaten from marginal vegetation bordering the Harley Brook in July 2014.

Acknowledgement
I am grateful to Martin George, Maria Justamond and David Williams for allowing me to use their photographs. Thank you to all who have provided records this year.

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British Bugs – www.britishbugs.org.uk

Keith Fowler

County Recorder Report – activities of the Shropshire Spider Group

2014 was the busiest year yet for the SSG. We held 10 Field Meetings from February through to October (two in June). Most were simply walkover surveys using the usual collection techniques of sweeping, beating and vacuuming (we do leave sites very clean and tidy !) but two meetings targeted specific species. In June we set arboreal pitfall traps and vacc'd epicormic growth on ancient oaks both at ground level and (people of a nervous disposition should skip this bit) from the top of a ladder searching for *Midia midas* –the jury is still out as we haven't ID'd all the specimens yet. In September (and this bit)

we scrambled up part of a rock climber's rock face to try and determine the extent of an *Atypus affinis* colony that we had confirmed the presence of on a pre-programme visit in January.

Rich Burkmar and Martin George seek (and find) *Atypus affinis* purse webs in cracks in the rocks Photo: via Nigel Cane-Honeysett.

We were delighted to find numerous purse webs of this species recorded in Shropshire for the first time in 2013 from only this one known site.

Aerial portion of Atypus affinis purse web jutting out from under the rock (Photo: via Nigel Cane-Honeysett)

As we sat admiring the view and eating our high altitude sandwiches we were slowly overhauled by two climbers with pitons, ropes etc. I knew we should have called ourselves the Shropshire Arachnological Society (SAS) !

In January, in conjunction with Keith Fowler's Joy of Invertebrate walks, we started a programme of monthly surveys (continuing into 2015) at a disused limestone quarry which is being left to regenerate naturally. We have a series of pitfall traps emptied monthly and vacuum sample the same areas each month to see what is colonising the barren area. The most successful arachnid coloniser so far appears to be *Lepthyphantes (Tenuiphantes) tenuis* (97% of species collected in January) but that's only one year's results. The survey team includes other County Recorders covering various insect groups as well as occasional botanists and bryologists.

We ran two lab days for the SSG with Paul Lee as our determiner for difficult species and a research day at Liverpool Museum where we have access to the specimens held there and also to the experts. A very enjoyable and interesting day that has become an annual event.

In June, we ran a one day spider ID course for the Severn Gorge Countryside Trust using microscopes kindly loaned by FSC Preston Montford. Later in the year we teamed up with FSC Preston Montford again on three experimental courses where we just used spi-pots, hand lenses and a USB microscope. We only planned one but, to our surprise and delight, we kept getting oversubscribed ! Rich and I ran the last one at Whixall Moss as the local volunteer group there managed to, more or less, fill one on their own.

In August and September members of the SSG attended 3 Bioblitzes; at Fordhall Farm, the Stiperstones and Merefest in Ellesmere.

In addition to the above there was the constant trickle of Noble False Widow sightings which eventually, in November, resulted in our first confirmed Shropshire specimen.

The opportunity for more "action spidering" presented itself when I was called out to rescue and relocate a colony of the cave spider, *Meta menardi* , which was located under a "bridge" in Telford Town Park.

The "bridge" constructed from railway sleepers over an old ditch (Photo via Nigel Cane-Honeysett).

The reason for the relocation was that the bridge was planned for demolition and the ditch filled in - if the workmen could be persuaded to come back to work!

One of 60 adult *Meta menardi* spiders transferred to a secret location elsewhere in the Park (Photo: via Nigel Cane-Honeysett)

Enjoying one of my other passions, on an archaeological excavation I was allowed to investigate a large underground tunnel which turned out to be full of the same species.

Meta menardi guarding her egg sac in the underground culvert at the Old Wynde (Photo: via Nigel Cane-Honeysett)

Now I have drawn attention of the archaeologists to the existence of this beautiful spider, I have been promised a look in a half buried pigsty currently out of bounds on a road stabilising site where large spiders have been reported.

SSG members also attended field meetings organised by the Shropshire Invertebrate Group and joined forces with other County Recorders on most Wednesdays from March through to September on Keith Fowler's very successful and enjoyable Joy of Invertebrate walks. All in all, we participated in around 80 site visits and collected thousands of specimens (most still being identified). Amongst those specimens identified are seven "newbies" not recorded in Shropshire before.

The 2015 SSG programme is published but won't be quite so taxing this year.

Nigel Cane-Honeysett

Shropshire Dragonfly Report

To see this report please visit the Invertebrate Challenge website where FSC has very kindly hosted Sue McLamb's 2014 dragonfly review

www.invertebrate-challenge.org.uk and click on the 'newsletter and resources' tab. Sue's report is at the bottom of the resources bit.

Shropshire Ephemeroptera

In 2014 eight local recorders submitted 29 records of 7 species a few of which were historical, going as far back as 2008.

The bulk of the records added however are from monitoring work carried out by the Environment Agency and the Freshwater Biological Association over several years. Some 2500 of these records are still to be added to the vice-county database.

In Shropshire Entomology Issue 9 I reported on the exciting discovery of the rare *Potamanthus luteus* (Linnaeus, 1767) the yellow mayfly. These photographs of the specimen(s) in question show not only the characteristic colouring of this species but also the differences between the two adult stages – the sub-imago with its' translucent wings shorter tails and front legs, the imago with its' brighter colouration long tails and legs and the glassy transparent wings.

Photo: sub-imago Yellow Mayfly (Kain Preston)

Photo: Yellow Mayfly adult (Kain Preston)

My thanks to all those who submitted records.

Ian Thompson

Shropshire Aquatic Invertebrates: Aquatic beetles and bugs of 2014

Aquatic bugs

Last year proved to be a successful one for aquatic entomology. In 2013 the water strider *Aquarius paludum* (Fabricius, 1794) a Notable B species was found on Betton Pool a long way from its Bedfordshire home.

Aquarius paludum (Photo: via Frances Riding)

In 2014 I found it was also breeding on Bomere, Berrington Pool and a fishing pool below Walford College. Further searching should expand its range this year. Also new to Shropshire was the small Mesovelid *Mesovelia furcata* Mulsant & Ray, 1852).

Mesovelia furcata (Photo via Frances Riding)

This was found in two sites Berrington Pool and Walford.

In total 32 aquatic bug species were recorded. The smaller Corixids (water boatmen) are underrepresented due to the late start in recording. But *Notonecta maculata* (Fabricius) a back swimmer which had only a couple of records in the south of the county has now many records covering the whole county.

Water beetles

The recording of water beetles were equally successful with surveys covering Meres, ponds and sundry sites. Three new species of beetles for Shropshire were recorded. *Berosus signaticollis* (Charpentier, 1825) and *Hydroglyphus geminus* (Fabricius, 1792) were both found in the pool at Eardington Quarry along with other aquatic insects which indicated a good quality site.

Berosus signaticollis (Photo: via Frances Riding)

Hydroglyphus geminus (Photo via Frances Riding)

The third new species was a Chrysomelid *Prasocuris phellandrii* (Linnaeus, 1758), a common widespread species which lives on varies aquatic plants. This beetle was found pupating in large numbers on Amphibious bistort (*Persicaria amphibia*) at Brown Moss (Photo 5).

Prasocuris phellandrii (Photo via Frances Riding)

Brown Moss which was the subject of a full survey also produced two Nationally Threatened species *Hydrochus brevis* (Herbst, 1793) and *Hygrotus decoratus* (Gyllenhal). The aquatic weevil *Tanysphyrus lemnae* (Paykull, 1792) is also to be found at Brown Moss.

Acilius canaliculatus (Nicolai, 1822) which is Nationally Scarce has been recorded new sites in the county which is good news for its spread. In total 84 water beetle species were recorded for the year, 26 species recorded at Crose Mere and 30 species for Pool 2 at Brown moss. Once again the most recorded species was *Helophorus brevipalpis* (Bedel, 1881) (13 sites) and *Hydrobius fuscipes* (Linnaeus, 1758) (12 sites). The most represented genera were *Hydroporus* with 13 different species.

These records mainly came from lentic sites. Therefore this year, 2015, there is to be a big push to record from rivers and streams, particularly from the smaller ones. Not only beetles and bugs are to be targeted but Plecoptera (stoneflies) which has coincided with the publication of the new Natural England review of stoneflies (see below).

Published and available on the Natural England website -

NECR161 edition 1 - A review of the scarce and threatened beetles of Great Britain: The leaf beetles and their allies. Species Status No. 19

NECR174 - A review of the stoneflies (Plecoptera) of Great Britain. Species Status No. 20

Frances J Riding franrid@hotmail.com

Shropshire Ladybirds

In 2014 there was a slight dip in records received, 396 (still the second best yearly total after 2013) with a few still to come.

Again this year we have two records for *Myrrha octodecimguttata* (Linnaeus, 1758) the 18-spot ladybird at Ellesmere Park and Brown Moss. This species has now turned up at geographically scattered sites and although not first recorded until 2012 it is clear it is quite widespread but probably in low numbers.

One new species for the vice-county was recorded, a non-ladybird coccinellid *Nephus quadrimaculatus* (Herbst, 1783) which turned up on four different sites. The first VC record was from Uffington on 30th March collected by Nigel Cane-Honeysett; the second came from the Prees Branch Canal wildlife site on 2nd July and was found by Keith Fowler. The other two records were from Michelle Furber and Warren Putter and turned up on the 2nd and 3rd August on the occasion of an Invertebrate Challenge weekend course run by Richard Comont on the smaller coccinellids.

Richard Comont leading the smaller coccinellids course (Photo: Pete Boardman)

Another significant find was another non-ladybird species *Scymnus auritus* Thunberg, 1795 which was recorded on two occasions by Keith Fowler (3rd August) and Michelle Furber and Warren Putter (21st August). At first this was thought to be another first record but subsequent searching of the Ladybird-Survey records show that this species was recorded by Hignett (J?) at Knockin Heath in 1973.

I mentioned in my last report in Shropshire Entomology Issue 8 that a number of species are now being recorded by sweep netting or beating and this trend has continued, hence the greater number of the small non-ladybird coccinellids found as only the youngest keenest eyes would be likely to spot them otherwise.

My thanks to all those who submit records either directly to me or via Caroline Uff and Keith Fowler.

Ian Thompson

Winter Beetling

[Ed. Caroline provided a summary of the 2014 season in her article in Vol. 9; p19-21]

As with many inverts, winter is a quiet time for beetle recording, with just a handful of records coming in – mostly common ground beetles and ladybirds. So I thought I would mention my favourite hunting methods that can be used with success during the winter and early spring months. I like these methods because they do not rely on indiscriminate killing. They do however produce rather a lot of small Staphylinids which can be challenging to identify!

The first is to search flood refuse. After heavy rains check your local river and fill a bag full of flood debris that has been recently dumped on the river banks (the finer material is best). The

advantage of doing this in the winter is that the beetles are inactive, so remain in the debris for some time. The bag can be taken home and examined indoors. In the Coleopterist handbook, Walsh describes the next stage like this…. '*We then sit down at the table, first having got permission from our women folk and warned them that small fry may creep or fly*' …Take heed chaps!! Then, have a good sift through the material on a white tray and try to return what you can to the river side. It is really surprising what turns up.

The second method, tussocking, feels slightly more destructive but is surprisingly productive (not just for beetles, but bugs, spiders, springtails and even flies too). For this you need a white tray or sheet and small pruning saw. Select an isolated tussock of coarse grass, common around the edges of gardens, fields or woodlands, and quickly saw through it just below ground level. Shake the loose soil and vegetation into the tray and examine what critters fall out. Then give the tussock a second shake, teasing apart the fibrous base, and it surprising how much more comes out. This can all be done in the field, and once any necessary specimens are potted, the tussock and its contents can be replaced.

Tussocking. (Photo: C.Uff)

Finally, hunting for beetles adds a bit of excitement to the otherwise tedious winter job of cleaning out nest boxes. Simply shake the nests over a white tray and check crevices in the box.

Clearing out nest boxes in winter. An aside - can anyone identify this nest made of dead bluebell stems, every year in the same dormouse box? (Photo: C.Uff)

Apparently dry nests are not as good for beetles as damp ones, but I do find a few ground beetles which seem to just shelter in dry boxes (ususally *Ocys harpaloides* and *Platynus assimilis*). There are sometimes fly or moth pupae in the nests as well, which can be kept and reared out for Nigel or Godfrey.

Caroline Uff

The Olloclip Macro 3-in-1 lens for I-phone 5/5s

During the winter of 2014 I enviously looked at a variety of macro-photography set ups that were achieving fantastic results of amazing close up photos of some of our smaller invertebrates. Also for some time I have been aware of the fabulous photographs taken by several of the contributors to this newsletter and so thought it was time to set myself up again following a few years without much photography.

I instantly found quite a large barrier came with price. Really good macro lenses capable of good close ups of invertebrates around a couple of millimetres in size can cost several hundreds of pounds and that is without the camera body, a flash, and other extras like extension tubes etc. Clearly if I was to get active with macro-photography again I would need a different and much cheaper approach. Whilst Googling I noted that there were smart-phone cameras out there and I quickly came across the Olloclip 3-in-1 lens that fits my phone (I-phone 5s). It was advertised for approximately £60, which is a lot more reasonably priced than true camera lenses but still a fair amount of money so I was a little nervous in case it turned out to be a duffer but once ordered it arrived quickly in reassuringly jaunty, well designed packaging.

The 3-in-1 lens is actually 3 separate lenses that can be used individually or fit together and give the options of x7 magnification, x 14, and x 21. The lens holder just clips over the camera lens of the phone and away you go.

Olloclip lens clipped on i-phone (Photo: Pete Boardman)

My main interest of late has been photographing soft-bodied (springless) springtails which are very oidy indeed – between 1mm and 3mm in size depending upon species. For these I've used only the x21 lens but the results have been really good (in my opinion) for the cost. There is sufficient pixel size in the I-phone camera to allow further enlargement resulting in reasonable images that demonstrate some of the features needed in the identification (or at least best guess) for many several springtails. As the season progresses I'm sure I'll get more opportunities to try the lens on other subjects but at this stage I am delighted with my purchase.

springtail *Protaphonura aurantiaca* (Photo: Pete Boardman)

springtail *Bilobella braunerae* (Photo: Pete Boardman)

actual size of photo recorded from Olloclip (Photo: Pete Boardman)

springtail *Neanura muscorum* – photo above zoomed and cropped in Photoshop (Photo: Pete Boardman)

Pete Boardman

Bees – a review of the genus *Stelis* in Shropshire

The genus *Stelis* is one of six solitary bee genera known as cleptoparasites (sometimes referred to as cuckoos). All are dependent on their hosts for survival with the larvae of the cuckoo feeding on the stored provisions in the hosts' cells after destroying the egg or killing the host larva.

Each cleptoparasitic genera have their own method of entering into their hosts nest. *Stelis* keeps it simple by laying an egg in each open cell within a nest while the host is away foraging for pollen. She will return to the same nest to lay another egg as each new cell is constructed.

In Shropshire we are fortunate to have three of the four species recorded from Britain with all of our records post 2001. This is of importance as all species are considered to have declined (Falk, 1991) their status nationally varying from scarce to very rare.

All of the hosts are aerial nesting bees in the family Megachilidae. The main hosts are shown below as suggested in Baldock, 2008 and Falk, although other species may be selected:

***Stelis ornatula* (Klug, 1807).** Rare, 3 sites in Shropshire. The host *Hoplitis claviventris* is a widespread species (13 sites in Shropshire) found in a wide variety of open habitats. Nesting takes place in broken and cut stems of plants such as bramble, rose and ragwort, and dead wood. A wide variety of flowers are visited for pollen.

***Stelis punctulatissimma* (Kirby, 1802)**. Rare, 6 sites in Shropshire. The host *Anthidium manicatum* is widespread in Shropshire (15 sites) being especially common in gardens where plants in the family Lamiaceae are present. Lamb's ear is a favourite. Another host, *Osmia leaiana* (28 sites) is a species of open habitat including gardens, woodland edge and post-industrial sites. Both species nest in dead wood with *A. manicatum* also utilising crevices in walls

***Stelis phaeoptera* (Kirby, 1802)**. Rare, 5 sites in Shropshire. *Osmia leaiana* is the host for this, one of our rarest bees in Shropshire

All *Stelis* species are small to medium sized, relatively hairless, dark blackish bees with dark wings. All are heavily punctured as seen in the following photos. The females have no pollen scopa as they do not collect pollen. Females of similar looking bees will have the scopa present. (dense patches of hairs of various colours depending on species on the underside of the abdomen). Male *Stelis* are very similar in appearance to females.

Stelis ornatula (Bob Kemp)

Stelis ornatula showing the ivory coloured spots on the side of the tergites. Nationally Rare. Main area found : SE England. Since 1970 only a dozen 10km squares

Stelis phaeoptera (Nigel Jones)

Stelis phaeoptera is a medium sized black bee. The silvery hair patches are evident in this photo but can be abraded in older specimens. Nationally Very Rare. A species mainly found in southern England and south Wales with only a handful of post 2000 records. Shropshire is a hotspot for this very rare bee

Stelis punctulatisimma (Nigel Jones)

Stelis punctulatisimma is the largest of the genus. The pale bands at the tip of each tergite are distinctive. Nationally Scarce. The most widely spread of the genus. Once again the south east of England is the main area for the species with sparse records to Dumfries and Galloway.

References

Baldock, D. W. (2008) Bees of Surrey, Surrey Wildlife Trust, Woking

Falk, S. J. (1991) A Review of the Scarce and Threatened bees, wasps and ants of Great Britain, Research and Survey in Nature Conservation No.35, Nature Conservancy Council.
BWARS website. March 8th 2015

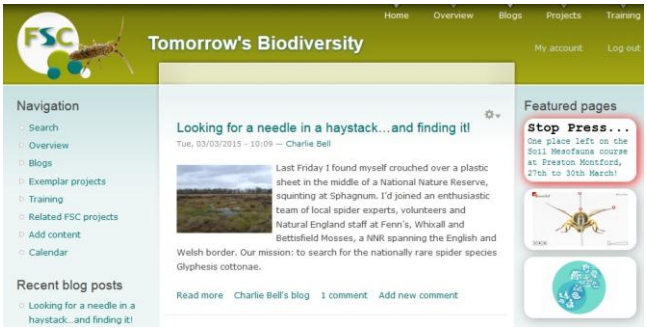
Jones, N. and Cheeseborough, I. (2014) A provisional atlas of the bees, wasps and ants of Shropshire. Field Studies Council.

Ian Cheeseborough

Tomorrows Biodiversity

In 2015 it's full steam ahead with the 'delivery phase' of Tomorrow's Biodiversity. After two years of research and consultation (and the odd dabble here and there with some training delivery) it's a great feeling to watch things starting to come together for the what matters most to us – delivering training, resources and support.
A feature of Tomorrow's Biodiversity is thinking hard about ways of doing things differently and trying new approaches. The delivery phase has shaped up as a series of 'exemplar projects' each aiming to explore one or more different approaches. Although they are largely discrete projects, there is a lot of overlap between many of them as you can imagine and one or two are full-on cross-cutting projects that facilitate the others.

One such cross-cutting project is the so called 'Internet Communications Media Project' – a horrible name for an exciting project. (I'm afraid my imagination let me down when I christened that one.) The core of this project is a new website (built with Drupal for those interested in such things) that moves us forwards from the temporary scratchpad website that has served us well for the last two years.
With the new website – www.tombio.uk – we have much more technical and creative control over the way it looks at what it can deliver. The project allows us to explore ways of using social media and other new media to support training, resources and mentoring. Dr Charlie Bell joined the Tom.bio team in early February as a part-time project assistant and part of her role is to lead on this exemplar project.



Tomorrow's Biodiversity website (via Rich Burkmar)

Some of you will have seen us promoting the 'TaxonAid' project which we are supporting through the Tom.bio 'Novel ID resources' exemplar project. We are working on this with a team from Leeds University. TaxonAid explores the utility of '3D' images of specimens, especially when used in conjunction with keys and other resources. David Bodenham, who does the photography for this project, has just produced a video to show how the images are actually made - www.tombio.uk/tamethod. It's not as difficult as you might think and could actually be tried by anyone with some quite basic kit and plenty of patience!

Taxon aid (via Rich Burkmar).

One of the exemplar projects I'm most excited about is the Spider Project which we are working on with the Shropshire Spider Group, in particular Nigel Cane-Honeysett. (We include harvestmen and pseudoscorpions, but we say 'spiders' because life is short.) Not only is this my own major taxonomic interest, but I think that with this project we will explore some of the themes at the heart of Tomorrow's Biodiversity. For example it is clear to me that just providing training courses as one-offs and measuring their success by the 'bums on seats' metric, is not serving us well. There is growing evidence, including that generated by Invertebrate Challenge, that we need to take a much more sophisticated approach and long-term view of people's learning and development than that.

With the Spider Project we can explore ideas around that idea. In 2015 we have taken the first steps to produce an integrated 'training programme' rather than a series of 'training courses'. We've thought hard about what differentiates training at different levels and how we can move people from one level to another. You can see the 2015 training programme here: www.tombio.uk/spidercourses.

Not all of the courses in the programme referred to earlier are direct descendants of Tomorrow's Biodiversity (for example the Severn Gorge spider course and the Spider Photography course) but we have tried to look at all training opportunities that we know of in our area and think about them in the round. We will do much more than develop a training programme for the Spider Project – especially around support and resources – and we will be developing these aspects through the life of the project.

For most of the Tomorrow's Biodiversity courses there is a charge to attendees. In general we have set these charges to fit with the pricing strategies currently used by our centres (in this case Preston Montford Field Centre). This is because project funding for Tomorrow's Biodiversity does not include a general subsidy for course attendance (i.e. we don't have the money to make them all free) and we also need to think about funding models that can be sustained by the FSC beyond the life of Tomorrow's Biodiversity. The Tom.bio consultation in 2014 indicated strong support for the principal of attendees making a financial contribution to cover the cost of their training as long as it was delivering a quality product.

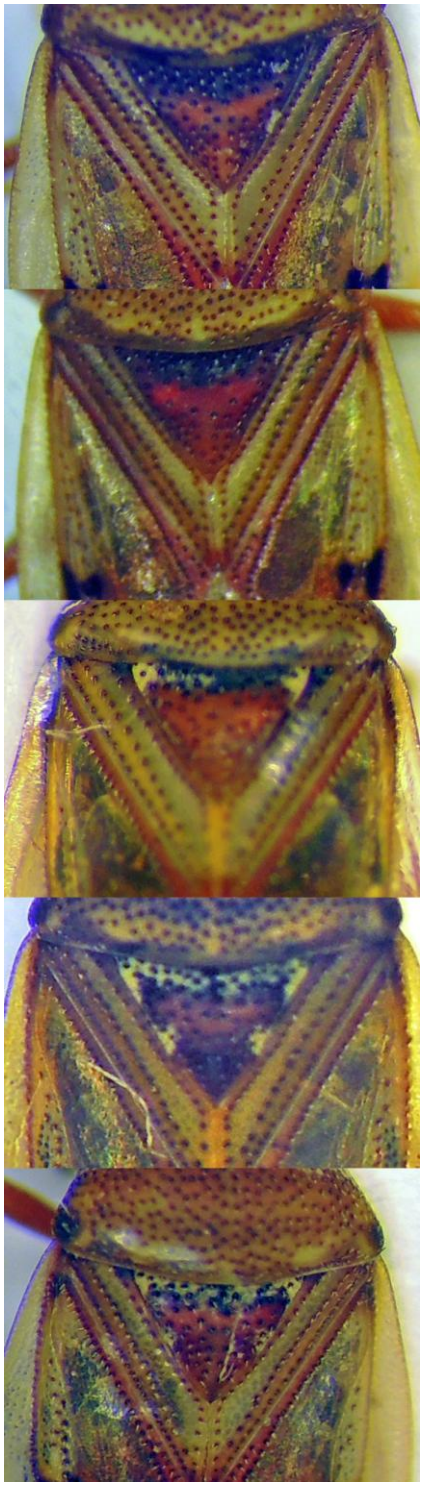
Over the next few months or so Charlie will work on ways to keep Tomorrow's Biodiversity in touch with everyone who's interested in the project. In the meantime, you can follow us on Twitter (FSCTomBio) and, of course, keep an eye on the website (we aim to keep this regularly updated with blog postings on the project – at least one a week). You can also contact the entire team by sending an email to admin@tombio.uk! We hope to be meeting many of you over 2015.

Rich Burkmar

Variation in the markings of the Birch Catkin Bug (Lygaeidae) *Kleidocerys resedae* Panzer, 1797.

Whilst looking at some samples of *Kleidocerys resedae* taken from leaflitter in Tower Hamlets Cemetery Park in London recently I noticed how variable the markings were on the scutellum and

clavus. This variability can be seen on the British Bugs website photos (www.britishbugs.org.uk) but it isnt overtly mentioned.



Scutellum and clavus of 5 samples of Kleidocerys resedae (Pete Boardman)

The variations of colour on the scutellum extend from largely black with a small amount of red, equal measures of red and black, to various amounts of red, black and white. The clavus differs in the varied amount of red banding down the punctures from hardly any to being extensively red. The specimens were all from one area of litter in the bowl of a tree root.

Pete Boardman

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.

Lepidoptera (butterflies and moths)

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

Odonata (damselflies and dragonflies)

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

Hemiptera (true bugs)

Terrestrial Bugs (now including **shieldbugs**), the Auchenorrhyncha and Psylloidea (Hemiptera) – Keith Fowler –
Email: keith.c.fowler@blueyonder.co.uk

Aquatic Bugs (Hemiptera) – Frances Riding
Email: franrid@hotmail.com

Coleoptera (beetles)

All families except Ladybirds and water beetles – Caroline Uff –
Email: caroline.uff@nationaltrust.org.uk

Ladybirds (Coccinellidae) – Ian Thompson –
Email: salopladybirds@f2s.com

Water beetles – Frances Riding –
Email: franrid@hotmail.com

Diptera (true flies)

Brachyceran flies (hoverflies, robber flies, horse flies, soldier flies etc), tachinid flies, conopid flies and picture-winged flies – Nigel Jones
Email: nipajones@tiscali.co.uk

Nematoceran flies (craneflies, winter gnats, bibionids, mosquitoes, etc) – Pete Boardman –
Email: peteboardman@rocketmail.com

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

Hymenoptera (bees, wasps, ants etc)

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

Aquatic insects

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

Trichocera (Caddisflies) and Plecoptera (Stoneflies) – Frances Riding –
Email: franrid@hotmail.com

Orthopteroids

Orthopteroids (Grasshoppers, Crickets, Ground hoppers, Earwigs etc) – David Williams
Email: dw1971@btinternet.com

Arachnids

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

Hexapods

Collembola (Springtails) – Francisca Sconce –
Email: fsconce@harper-adams.ac.uk

Others

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

Dates for your diary

Here is a selection of entomological goings on in Shropshire and elsewhere that I am aware of. Please note all are subject to change and you should contact the nominated person ahead of the event.

Invert Challenge Legacy Courses

(Sue Townsend "These can be booked through the Preston Montford website at the links below at a price of £5 to all you lovely people who supported our project.")

- **Identification of Beetles – 1st and 2nd June**

Don Stenhouse is back with a two day courses

http://www.field-studies-council.org/individuals-and-families/courses/2015/pm/invertebrate-challenge-legacy-event-beetle-identification-50070.aspx

http://www.field-studies-council.org/media/1645909/invert-challenge-beetle-identification-don-stenhouse-2nd-june-2015.pdf

- **Identification of Bees – 8th & 9th June**

Ian Cheeseborough will be leading one lab and one field day

http://www.field-studies-council.org/individuals-and-families/courses/2015/pm/invertebrate-challenge-legacy-event-solitary-bee,-wasp-ant-identification-50073.aspx

http://www.field-studies-council.org/individuals-and-families/courses/2015/pm/invertebrate-challenge-legacy-event-solitary-bee,-wasp-ant-identification-50076.aspx

Hoverflies – 1st & 2nd July

Nigel Jones will be leading one lab and one field day

http://www.field-studies-council.org/individuals-and-families/courses/2015/pm/invertebrate-challenge-legacy-event-hoverflies-and-other-diptera-50083.aspx

http://www.field-studies-council.org/individuals-and-families/courses/2015/pm/invertebrate-challenge-legacy-event-hoverflies-and-other-diptera-50086.aspx

- **Craneflies – 14th & 15th July**

Pete Boardman will be leading one lab and one field day

http://www.field-studies-council.org/individuals-and-families/courses/2015/pm/invertebrate-challenge-legacy-event-cranefly-identification-50089.aspx

http://www.field-studies-council.org/individuals-and-families/courses/2015/pm/invertebrate-challenge-legacy-event-cranefly-identification-50093.aspx

Joy of Invertebrate walks

Keith Fowler organises and leads most of these walks. All are on Wednesdays and begin at 10.00 am. For more details please contact Keith (details at the end of the events list.

01/04/2015 - Ercall LNR
08/04/2015 - Granville CP
15/04/2015 - Lea Quarry
22/04/2015 - Loamhole Dingle
29/04/2015 - Devil's Dingle
06/05/2015 - The Hem
13/05/2015 - Nant Mawr Visitor Centre / Jones' Rough
20/05/2015 - Lea Quarry
27/05/2015 - Apley Woods (Botanical Survey)
03/06/2015 - Dudmaston
10/06/2015 - Bucknell Wood
17/06/2015 - Lea Quarry
24/06/2015 - Wall Farm
01/07/2015 - Prees Heath
08/07/2015 - Sweeney Fen / Llanymynech Quarry
15/07/2015 - Lea Quarry
22/07/2015 - Bury Ditches
29/07/2015 - Aston Locks NR
05/08/2015 - Lodge Field/Beeches
12/08/2015 - Catherton Common/Cramer Gutter
19/08/2015 - Lea Quarry
26/08/2015 - Devil's Dingle

02/09/2015 - Nipstone Rock / The Bog
09/09/2015 - Mason's Bank
16/09/2015 - Lea Quarry Survey and Fungus Foray
23/09/2015 - Smalley Hill
30/09/2015 - Pole Cottage, Long Mynd
07/10/2015 - Nescliffe Fungus Foray
21/10/2015 - Lea Quarry
28/10/2015 - Nant Mawr Visitor Centre Fungus Foray
18/11/2015 - Lea Quarry
16/12/2015 -Lea Quarry

Contact Details: Keith Fowler
Tel: 01952 253378
Email: keith.c.fowler@blueyonder.co.uk

ECOLOGICAL COURSES FOR 2015 - CLUN VALLEY ORGANICS (BRYNMAWR, SOUTH SHROPSHIRE)

Introduction to the invertebrates of Brynmawr - an upland farm

Beginner – intermediate level **Thursday 25th June** and **Thursday 3rd September led by Pete Boardman**
10.00am - 4.00pm. Each course costs £25.00 per person, £50.00 for both. Lunch provided

For details Telephone Nick or Julie Button on 01905 339544 or 07900 026465 or email nickbutton40@gmail.com

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Submission guidelines for future articles for inclusion in *Shropshire Entomology*

It would help me tremendously if authors thinking of submitting articles to future editions of *Shropshire Entomology* used the following formats;
Font – title: **Palatino Linotype size 14 in bold**

Font – body: Palatino Linotype size 11

Font – caption for photo or table: Palatino Linotype size 10

Please wherever possible state authors for species mentioned in the title eg;

Craneflies and parallel universes – the rediscovery of *Phylidorea (Phylidorea) heterogyna* (Bergroth, 1913) at Fenn's, Whixall & Bettisfield Mosses NNR

or in the text eg. *Phaeostigma notata* (Fabricius, 1781) if it is a species central to the article.

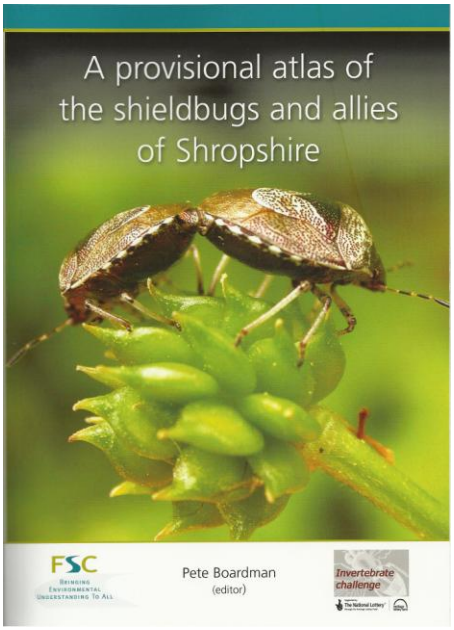
Photographs should ideally be above 200kb in size and I am happy to crop large photos to make the best use of space. **Please send photos as attachments rather than include them in the text of your article or if they are included in the article please don't wrap them in text or accompany them with a text box.** Please state the photographer's name or the source of the photograph.

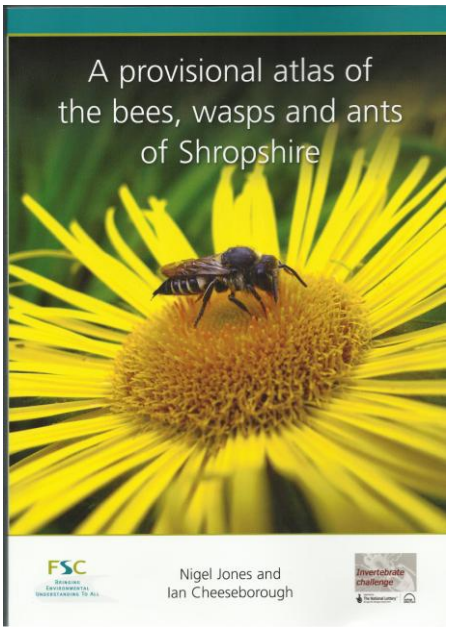
Please send text in a word file without any formatting such as columns. Only use capital letters for site or people's names. Lower case letters should be used for vernacular or common species names with the exception of those named after someone e.g.; Fallen's leatherbug.

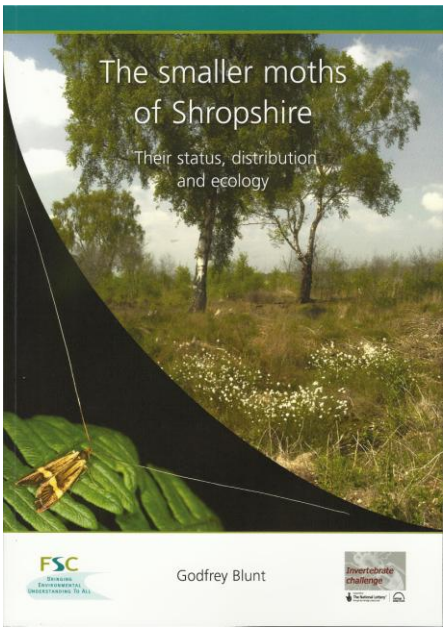
Many thanks

Pete Boardman & Nigel Jones – Editors.

AVAILABLE from Field Studies Council Publications







Boardman, Pete (Ed.) – A provisional atlas of the shieldbugs and allies of Shropshire - £15.00

Jones, Nigel & Cheeseborough Ian – A provisional atlas of the bees, wasps and ants of Shropshire - £11.50

Blunt, Godfrey – The smaller moths of Shropshire; their status, distribution and ecology - £15.00

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Fax: 01952 208919
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