Het News

Newsletter of the UK Heteroptera Recording Schemes

Issue 13
Spring 2009
2nd Series

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Editorial:

The HN indexing saga continues. Richard Dickson duly produced a draft index covering Series 1 & 2 of HN and this was awaiting BSN's attention when we discovered that it is possible to search back issues very easily using Google's 'advanced search' option (see article on p.6). The big advantage is that this eliminates a perpetual indexing committment into the future, which we feel outweighs the inconvenience for random browsing, so we have filed the work already done and do not propose to pursue it.

A certain sparseness of contributions for this issue was noticeable & we put this down to a real sparseness of (some) bugs following two years of adverse weather. This was most noticeable among southern species. If any of you have data on this we would welcome contributions on the subject for the autumn issue.

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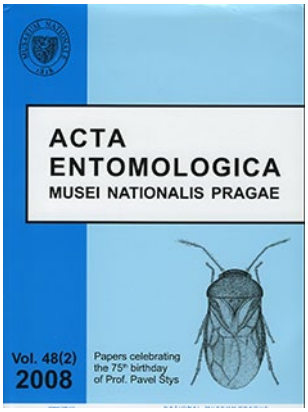
Contents

RECENT PUBLICATIONS

Book Review: Papers celebrating the 75th birthday of Professor Pavel Štys.

Petr Kment (ed)

Acta Entomologica Special Edition, **48**(2), 209-696 (488pp.)*, National Museum, Prague, 2008. ISSN 0374-1036.
[* Internet: *www.nm.cz/publikace/acta.php*]



This impressive volume comprises 37 papers dealing with Heteroptera from around the World - four of the five continents. A scan through the contents list indicates that the papers include descriptions of 4 new genera and 27 new species of Heteroptera, and not a few are named in honour of Professor Štys. A scan through the body of the work reveals many colour plates illustrating the preceding, together with numerous drawings of the critical parts of some and the habitus of others.

Three of the papers have direct relevance to the fauna of the British Isles:

(i) Papacek & Soldant present a 20 page study of *Aphelocheirus aestivalis*, covering its reproductive system & strategy, and the varied life-cycle, 2-3 years in central Europe. The population structure in the study area (Czech Republic) is believed to comprise three age cohorts, accounting for the diversity of age forms that we see in our population too.

(ii) Damgaard presents an 18 page review of the rich fossil record of the water-skaters (Gerromorpha); all the families of which have a history extending back to at least the Cretaceous, and some probably to the Triassic.

(iii) Carpintero & Dellapé discuss, among other things, the relationships of various anthocorid genera. They conclude that *Dufouriellus* should not be included in the same tribe as *Cardiastethus*, *Brachysteles*, *Buchananiella* etc. Consequently, the tribe Dufouriellini is denuded of all genera except *Dufouriellus*, while the other genera become Cardiastethini (again). There can be few tribes inhabited by so little biomass - one species 2 mm long!

The full list of papers is listed below together with, for the benefit of readers not familiar with Professor Štys, the preface to this special volume..

Preface to the celebratory volume:

———————

We are celebrating the seventyfifth anniversary of Professor Pavel Stys' birth

However unbelievable it is, Dr. Pave! Štys, Emeritus Professor of Entomology in the Department of Zoology of Charles University in Prague celebrates his 75` birthday. The present issue of Acta Entomologica Musei Nationalis Pragae is dedicated to him on this occasion, in honour of his life of excellent entomological research of great importance, interesting lectures, inspiring hypotheses and ideas, from both his heteropterist and non-heteropterist friends, students, and colleagues.

Pavel Štys is known world-wide and acknowledged as an outstanding specialist and great person in the community of heteropterists. A survey of his work and his laudatio were published some years ago (Papacek & Vilimova 1999, Vilimova 1995). He has always been an active man, working as a Commissioner of the International Commission on Zoological Nomenclature (ICZN) and editor of the *European Journal of Entomology*, managing field courses in invertebrate zoology, giving lectures on the methods and principles of systematic zoology and general entomology, and supervising MSc. and Ph.D. theses.

The importance and fruitfulness of Pavel Štys' magnificent scientific work are apparent in his nearly 450 publications, which are cited world-wide. The success of his pedagogical work can be illustrated by the fact that his former students now have positions as university professors or leaders of research teams in the Czech Academy of Science.

Professor Štys is interested not only in heteropterology but also in problems of evolutionary entomology, phylogeny, and classification of Arthropoda. His larger current research projects include: revision of Enicocephalomorpha, and the morphology of Enicocephalomorpha & Dipsocoromorpha, new family group taxa of Cimicomorpha and Pentatomoidea from Australia and Madagascar, and wing venation and articulation of hemipteran wings (jointly with Jarmila KukalováPeck, Carleton University, Ottawa). At present, he is also working jointly with his wife Alice Exnerová (Charles University, Prague) on multimodal antipredatory defences of Heteroptera, mainly on learning, generalization and attitudes of passeriform birds towards aposematic heteropterans from the ethological and phylogenetic point of view.

We look forward to the long continuation of such interesting research projects, and send all best wishes to Pavel Štys for the coming years.

Miroslav Papáèek

Contents of the celebratory volume

ARTICLES

Another N American bug reaches Europe, *Belonochilus numenius* (Say), Lygaeidae!

Armand Matocq
(transl. : Sheila Brooke)

We are grateful to Armand Matocq for permission to publish this shortened translation of his paper:
Présence en France et en Corse d'un Hétéroptère néarctique, *Belonochilus numenius* (Say, 1831) (Hemiptera, Lygaeidae, Orsillinae).
Armand Matocq . *Bulletin de la Société entomologique de France*, **113** (4), pp533-534, 2008.

In October 2008 a lygaeid of the tribe Orsillini which does not appear in the European literature, was found in Corsica by a visiting entomologist. At the same time another specimen of the same species was found in Montpellier. A. Matocq identified the specimens as *Belonochilus numenius* (Say, 1831), a North American species. This species was thought by N American workers to be rare, until it was realised that the host plant is plane (*Platanus occidentalis*); thereafter it was found to be abundant on these trees.

Wheeler (1984) (Seasonal History, Habits, and immature stages of *Belonochilus numenius* (Hemiptera: Lygaeidae). *Proc. Ent. Soc. of Washington*, **86** (4), 790-796.) studied the biology of this species in detail, partly in the laboratory (1976-81) and partly in Pennsylvania. He observed the overwintering eggs on the fruits of the plane (*P. x acerifolia*), not only those on the tree but also those that had fallen to the ground. Some fruits disintegrate or fall to the ground during the winter. Hatching took place around mid-April and the first adults appeared at the end of May. A second generation appeared in July, a third in August-September and adults were found until November. Adults and immatures feed on ripe and unripe fruits and their long rostrum allows them to puncture the seeds of the hairy achenes which form the compact, round, stalked fruit. This species is also able to develop on *Ambrosia trifida* (Great Ragweed) a member of the Asteraceae and common in N. America, as well as on species of elm (*Ulmus*) and willow (*Salix*).

As seen in the photograph, the bug is yellowish-brown with the apices of the hemelytra reddish. It is elongate but not flat, as is normal for the tribe Orsillini, and is covered with semi-prostrate pubescence. The head is very elongate and the part in front of the eye is 3x longer than the eye, the buccal area is unpunctured and the rostrum is very long and may pass the apex of the abdomen. The vertex has no keel but the scutellum is rounded, flat and has a strong keel in the shape of a letter 'T.' The anterior femur has a sub-apical tooth, which is occasionally absent.

The material examined consisted of 2 males and 2 females from the shade of a sycamore (*Acer pseudoplatanus*) at a railway station in Ajaccio, Corsica on 4.x.2008 and 1 male from the castle grounds in Montpellier, Hérault, also under sycamore, on 10.x.2008.

There is no explanation as to how these bugs reached Europe. It is, however, becoming more common for alien species to be found in many countries. The countless transport movements these days, as well as the massive importation of all sorts of plants, many ornamental, gives rise to accidental introductions. It will be interesting to see if this Lygaeid survives in Europe and if it multiplies as quickly as the coreid *Leptoglossus occidentalis*. After all, plane trees are not lacking in Europe.

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5th EUROPEAN CONGRESS ON HEMIPTEROLOGY
Velence, Hungary : 31 August - 4 September 2009.

Scope
Any research field relating to Hemiptera.

Venue
Plant Protection and Soil Conservation Directorate,
Agricultural Office of Fejér county: 23 Ország street, Velence.
120 seat congress hall, poster exhibition hall, meeting rooms, & outdoor facilities.
Velence is a popular tourist centre 40 km from Budapest, by the beach of Lake Velence.

Access
Easily reached by car from the M7 highway or by train from Budapest.

Field work
Velence is surrounded by very diverse habitat types,
a field trip is planned to Balaton Uplands National Park:
http://www.bfnpi.hu/index.php?lang=en

Proceedings
It is hoped to publish the complete congress proceedings in
Acta Phytopathologica et Entomologica Hungarica,

Congress website
http://fmmgszhnti.hu/5thehc/

Macrolophus species in Britain.

Bernard Nau

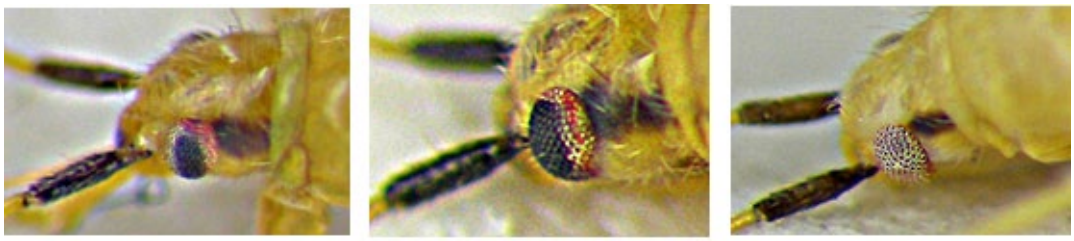

Figure 1
L: *M.pygmaeus* ♀, Yorks
C: *M.pygmaeus* ♂, Lancs
R: *M. rubi*, Hants
(coll. B. S. Nau)

Figure 2
3♀ *M. 'melanotoma'?*
Battersea, 2008
(coll. P. Kirby)

For more than a century, the genus *Macrolophus* has had two established species in Britain, *M. pygmaeus* (Rambur, 1839) and *M. rubi* Woodroffe, 1957 (long treated as a form of *pygmaeus*). We will have little to say about *rubi* as it is usually easily identified: has a later season and is found on brambles (*Rubus* spp) in the dappled shade of open woodland; it is distinguished by longer antennae (seg 3≥ 2xseg4) and a tiny black mark on the apex of the scutellum (as well as on apex of clavus).

M. pygmaeus is an early summer bug almost confined to Hedge Woundwort (*Stachys sylvaticus*, Lamiaceae) where this grows in humid hedgerows or woodland margins. *M. pygmaeus* is distributed from the south of England to the Moray Firth in Scotland. It seems more frequent in the north, although sparse throughout. Considering the preference of *M. pygmaeus* for humid and northern sites in Britain, the distribution given in the *Palaearctic Catalogue* is quite surprising: Tunisia to Morocco and the Azores, northwards to Fennoscandia, and eastwards to Russia, Kazakhstan and Iran.

Identification of *pygmaeus* was formerly straightforward but now requires separation from escaped *Macrolophus* introduced for pest control on horticultural crops in glasshouses, in particular *M. melanotoma* (Costa,1853).

M. melanotoma is very similar to *M. pygmaeus*. In fact the original type specimen of *melanotoma*, designated by Reuter in 1883, later proved to be *pygmaeus* and in 1995 another specimen from the same series was designated as a lectotype.[1,4] Also, Kerzhner & Josifov in the 1999 mirid volume of the *Palaearctic Catalogue* include a footnote to the entry for *M. pygmaeus* saying: "not improbable that the name *pygmaeus* is actually a senior synonym of *M. melanotoma*". The confusion extends to the extensive scientific literature treating these species, such as studies of their ecology, biology & behaviour.

However, recent DNA studies of *Macrolophus* from Iberia & the Canary Is. indicate that the above are two distinct species, with *pygmaeus* closer to a third, *M. costalis* Fieber, 1858 than it is to *M. melanotoma*.[1]

Both *pygmaeus* & *melanotoma* occur naturally in southern Europe, and *melanotoma* is used here for pest control on horticultural crops (especially for white-fly). It is marketed commercially, often under the invalid name *M. caliginosus* Wagner 1951[1] (as in Wagner & Weber, 1964 [5]). Furthermore, commercial stock of *melanotoma* have sometimes accidentally included *pygmaeus*[1]!

M. melanotoma has also been used in the UK, for pest control on glasshouse tomatoes and it is has sometimes escaped to at least the vicinity of the glasshouses.[2,3]

The *Macrolophus* used in the above DNA study[1] were reliably assigned to hosts. In particular, the sample of *melanotoma* were taken from Woody Fleabane *(Dittrichia viscosa*, Asteraceae) and the *pygmaeus* sample was taken from Tomato (*Lycopersicon esculentum*, Solanaceae). Both samples were from Iberia & the Canary Is. The authors were also able to compile reliable descriptions of the two *Macrolophus* species in these samples, with detailed morphology & measurements. However, since the samples came only from the SW of the species' ranges this information on host-plants and the descriptions cannot be assumed applicable throughout the geographical ranges of the two species, in Britain for example.

Martinez-Cascales et al.[1] found that identification characters given in recent literature[5,6,8] were unreliable, varying within and between populations. These were: length, vertex/eye width ratio, male genitalia, pigmentation of 1st antennal segment, and thickness of the dark stripe on the side of the head, behind the eye. Characters they recommended, being reliable in their samples, were:

a) *pygmaeus*: edges of dark stripe diffuse & parallel;
b) *melanotoma*: edges of dark stripe well defined & usually tapered, converging posteriorly.

We now come to the crux of the matter in hand. On 13th May 2008, on a brownfield site in Battersea (Inner London, Surrey VC197), Peter Kirby found a number of each of two 'horticultural species' of Dicyphini: *Dicyphus escalerae* (see *Species Notes* in this issue) & a *Macrolophus* sp., precipitating the present note. The *Macrolophus* were on Pellitory-of-the-wall (*Parietaria judaica*, Urticaceae), interesting since in the literature there is reference to this as a host plant of both *melanotoma* and *pygmaea*[1] - but subject, of course, to the above caveat on reliability of identification of *melanotoma* & *pygmaea*.

The most likely species of *Macrolophus* to be found on a brownfield site in central London in company with a horticultural species of *Dicyphus*, would be another dicyphine 'horticultural species' known to be present in the UK, namely *M. melanotoma*. This was PK's conclusion and he sent specimens to BSN for a second opinion.

Figure 3
top row - *M. pygmaeus*,
bottom row - *M. melanotoma*.
Iberian material (reproduced in edited form from ref.1) determined by the authors of ref.1. The right column have pale 1st antennal segment.

Figures 1, 2 & 3 show the evidence available, which will be discussed in relation to the recommended diagnostic characters listed above and illustrated in Figure 3. However, first note that the eyes of the southern *specimens* appear more remote from the pronotum than in the British specimens, possibly becausethe heads of the former were stretched forwards during mounting.

Compared with southern *melanotoma,* the southern *pygmaeus,* have a wider dark stripe with more diffuse edges and a slightly ovate form (not strictly parallel sided); also it is angled slightly downwards posteriorly. On the other hand, the southern *melanotoma* have a fairly defined stripe which narrows posteriorly; this taper seems variable, being more obvious in the right-hand image.

Compared with the southern *pygmaeus* (Figure 3), the dark stripe of the Battersea bugs (Figure 2) is shorter and narrower but with similar or even more diffuse edges.

Compared with the British *pygmaeus* (Figure 1), the dark stripe of the Battersea bugs (Figure 2) is narrower but otherwise not dissimilar, the edges are at least as diffuse.

Summarising:

- the head stripe in the Battersea bugs and southern *melanotoma* differ in blurring /sharpness of the edges, and absence/presence of taper.

- the head stripe in British & southern *pygmaeus* is similar.

- the Battersea *Macrolophus sp.* are probably *M. melanotoma* but, if so, then the form of the dark head stripe in *melanotoma* can deviate greatly from that in southern examples and the diagnostic characters have to be reconsidered.

References

1) Martinez-Cascales, J.I., Cenis, J.L., Cassis, G., & Sanchez, J.A., 2006, Species identity of *Macrolophus melanotoma* (Costa 1853) & *Macrolophus pygmaeus* (Rambur 1839) (Insecta: Heteroptera: Miridae) based on morphological & molecular data & bionomic implications. *Insect Syst. Evol.*,**37**,385-404**.**

2) Sampson, C.R. & Jacobson, J., 1999, *Macrolophus caliginosus* Wagner (Heteroptera: Miridae): a predator causing damage to UK tomatoes. *IOBC Western Palaearctic Region Section Bulletin,* **22**,213-216.

3) Bale, J.S. & Walters, K.F.A., 2002, *Assessment methodologies for establishment potential of nonnative arthropods.* Final Report to DEFRA. School of Biosciences, Univ. of Birmingham, UK

4) Carapezza,A., Faraci, F., & Péricart, J.,1995, Designation of lectotypes & paralectotypes of Palaearctic Heteroptera in the collection of Achille Costa (Museo di Zoologia dell'Università di Napoli). *Naturalista Siciliano,* **19**, 279-294.

5) Wagner, E. & Weber, H.H.,1964, *Hétéroptères Miridae.* Faune de France, **67.**

6) Josifov, M., 1992, Zur Taxonomie der paläarktischen *Macrolophus*-Arten (Insecta: Heteroptera:Miridae). *Reichenbachia*, **29**, 1-4.

7) Kerzhner, I.M. & Josifov, M., 1999, *Catalogue of the Heteroptera of the Palaearctic Region vol.3,* Aukema & Rieger (eds), Netherlands Entomological Society, Amsterdam.

8) Cassis, G., 1986, A systematic study of the subfamily Dicyphinae (Heteroptera, Miridae). PhD thesis, Oregon State Univ.

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Please send contributions for the next issue of *Het News* by 30th September 2009

Searching for information in *Het News*.

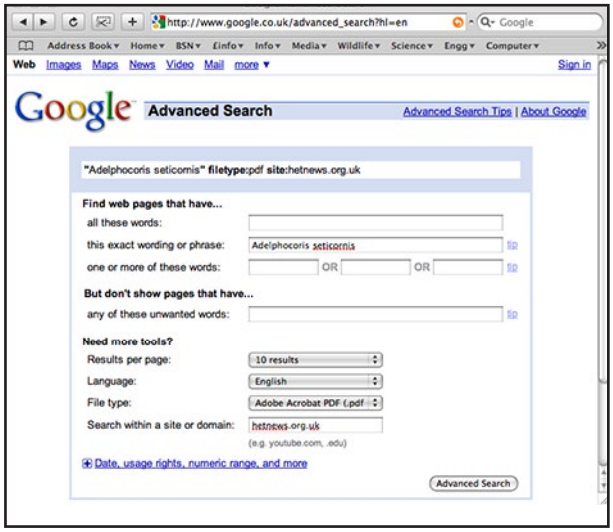
Bernard Nau

Have you ever spent ages looking for a piece of information in *Het News*? You can save a lot of time and effort by using Google to search for the information in *Het News* . This is simple to do because Google is able to search the PDF copies that are stored on our *Het News* website. As an example, suppose you want to find all references to '*Adelphocoris seticornis*', proceed as follows.

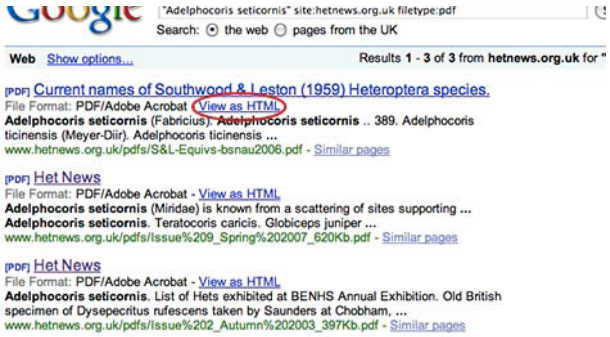
1) Start from the Google home page at: www.google.co.uk/
2) Click the 'advanced search' option beside the empty search field, an 'advanced entry form' will be displayed.

3) In the field labelled 'this exact wording or phrase', type: Adelphocoris seticornis
4) From the drop-down menu labelled 'File type', select: Adobe Acrobat PDF
5) In the field labelled 'Search within a site or domain', type: hetnews.org.uk

The completed search form should look like this:



6) Click 'Advanced search' button (bottom right) to begin the search, a list of results will then be displayed like this:



7) Click on 'View as HTML' (I have circled this) to display a text version of *Het News* which you can scroll through, to look for yellow highlighted search results - scroll through the whole document in case there are multiple finds. (If you click on the main heading of an item found , a complete issue of *Het News* will be displayed but without indicating where target words occur!)

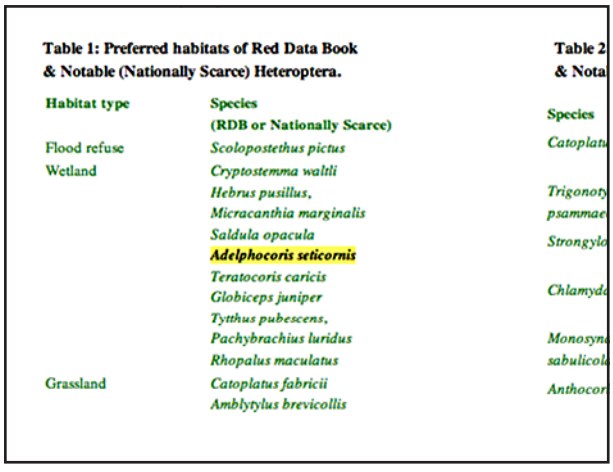


Table 1: Preferred habitats of Red Data Book & Notable (Nationally Scarce) Heteroptera.

Habitat type	Species (RDB or Nationally Scarce)
Flood refuse	*Scolopostethus pictus*
Wetland	*Cryptostemma waltli*
	Hebrus pusillus,
	Micracanthia marginalis
	Saldula opacula
	Adelphocoris seticornis
	Teratocoris caricis
	Globiceps juniper
	Tytthus pubescens,
	Pachybrachius luridus
	Rhopalus maculatus
Grassland	*Catoplatus fabricii*
	Amblytylus brevicollis

SPECIES NOTES

Arocatus longiceps Stal (Lygaeidae) in Britain, an update.

Max Barclay

The *Platanus* feeding *Arocatus* recorded in London in 2006 (Nau & Straw 2007) attracted considerable media attention in 2008, following the discovery of a large population in the Natural History Museum's wildlife garden (Barclay, 2007). Some of this publicity is available online, e.g. http://www.nhm.ac.uk/about-us/news/2008/july/mystery-insect-found-in-museum-garden.html and http://news.bbc.co.uk/1/hi/england/london/7506355.stm . Most of the news coverage focussed on the straightforward but important messages that insect species are easily transported from place to place, that it is not necessary to travel to exotic localities to find something interesting, and that taxonomy and identification, while valuable, are not always straightforward. Of over 100 letters received, most suggested identifications, especially the American box elder bug *Boisea trivittata* (Say) (Rhopalidae), a much larger, only superficially similar species.

Hoffmann (2008) gave a detailed review of the variation of *Platanus* feeding urban *Arocatus* in Europe, concluding that "all west European *Arocatus* on *Platanus* are *A. longiceps*." This conclusion seems entirely reasonable, and I believe that *longiceps* should be used in the British literature unless contradictory evidence appears. It appears that the Provence populations of *longiceps* were identified as *roeselii* by Carayon (1989), and that this error was incorporated into the key by Pericart (1998). Since this key is the general work for identifying European *Arocatus*, and specifically mentions *roeselii* on *Platanus*, authors identified the invasive *Platanus* bug as *roeselii*. When I compared specimens from London with *roeselii* and decided that they could not be conspecific, I did not consider the simplest explanation, that the key was wrong. In fact, it appears to separate 'some *longiceps*' from 'other *longiceps* and *roeselii*' and, as Hoffmann states, "the morphological criteria for determination of the two species should be revised".

Arocatus longiceps remains common in the NHM garden and environs. At the time of writing (1st June 2009) only a few overwintered adults survive, but dead examples are present, and large numbers of bright red first instar nymphs. The species is also common in Battersea Park, Surrey (TQ2877) since at least 2007. An interesting letter received in July 2008 from David Ward, stated that the bug was common on *Platanus* in Victoria Tower Gardens (TQ3079) for 'the last 6 or 7 years', suggesting that heteropterists might have been late to observe its presence in London!

References

Barclay, M., 2007
Some observations and thoughts on the Platanus feeding *Arocatus "roeselii"* (Lygaeidae) established in London.
Het News, **10**, 8-9.

Carayon, J., 1989
Arocatus roeselii hôte des platanes à Paris (Hém. Lygaeidae).
L'Entomologiste, **45**, 311-313.

Hoffmann, H. J. 2008
On Plane trees, not only *Arocatus longiceps* (Lygaeidae) but also Arocatus roeselii?
Het News, **12**, 4-6.

Nau, B.S. & Straw, N., 2007
Arocatus roeselii established in Britain?
Het News, **9**, 8.

Péricart, J., 1998
Hémiptères Lygaeidae Euro-Mediterranéens. 1.
Faune de France, **84A**, Paris.

MIRIDAE

***Dicyphus escalerae* Lindberg, 1934**

Pete Kirby, Tristan Bantock, Bernard Nau

The following is a self-explanatory, slightly edited version of Internet correspondence relating to this mirid, which is now apparently naturalised in England, probably having spread from imported horticultural *Antirrhinum majus*.

PK to BSN: 28oct08:

… I might mention that I caught a couple of *Dicyphus* from mixed tall ruderal vegetation on a mound of rubble in Battersea earlier this year (the excitement of my year - dismal ditches in Maxey, piles of rubble in Battersea . .). I'd rather like them to be *tamaninii*, but haven't managed wholly to convince myself. I didn't really notice they were interesting at the time, or I might have looked for more; I went back later in the year to look for the next generation, but the mound of rubble had become substantially bigger and the vegetation was buried. Would you look at them for me?

BSN to PK:

… I worked through the Dicyphinae key in Wagner's Mediterranean mirid work, this led me to *tamanini* & *escalerae*. At this point it becomes a paramere job & at first I concurred with you but gradually I veered to *D. escalerae*. The paramere 'stem' did not seem long enough for *tamanini* & the obscure 'comb' on the outside of the apical 'lobe' seemed to be confined to the basal side of the widest point of the 'lobe', unlike that in *tamanini*. Against this conclusion was the coarse black pubescence of the upperside of your bugs - for *escalerae* Wagner says 'finer and generally brown'. I then found the 2004 paper by John Hollier & Armand Matocq (*Mitteilungen der Schweizerischen Entomologischen Gesellschaft*, **77**,333-335) reporting *D. escalerae* new to Switzerland, on horticultural *Antirrhinum majus* in warm sunny places. This refers to 'rather coarse erect black dorsal pubescence, the hairs arising from black spots'! In addition, in an obscure French beetle paper I found a nice drawing showing the habitus of this species, which matches very well too. H&M also say that, in the last decade or two, *escalerae* has spread to France and Germany, from its early sites in Spain, Corsica and Italy.

There is more: if you have *Die Tierwelt Deutschlands Wanzen Band 2* it has a good photo of adult & nymph of *D. escalerae*.

And yet more: on the Yahoo het newsgroup on 17th Nov 2008, the attached photo was put forward by Tristan Bantock as possibly *D. escalerae*, from Antirrhinum in a Leicestershire garden - a conclusion based on a photo on a website somewhere. Anyway, this matches your specimens too.

I imagine this species could be quite well established in southern England on Anthirrhinums on old brick walls. Anyway, I would welcome details of dates and grid refs for your mound of rubble.

PK to BSN:

Many thanks for this unassailable piece of detective work. The photograph looks (almost) just as I remember the little creatures when freshly dead. I've deprived myself of two useful bits of information by not yet having DTDW2 (as a peripheral luxury item, I'm getting it in instalments, and so far have only 1) and not being in the Yahoo Group. … The site was in TQ2877, and the date of capture was 13 May 2008. I've been asked not to be more precise than a km square, though I can think of no good reason for this and may get a dispensation for another two figures in time. The mound was a fairly typical bulldozed site clearance heap, a mixture of soil, concrete, & miscellaneous bits & pieces but with a fairly complete cover of the usual mix of tallish ruderal plants, dominated by yellow crucifers. I didn't see any *Antirrhinum* at the time, but that early in the year, amongst a lot of other stuff, they probably wouldn't show unless there were lots of them. There were some snapdragons nearby later in the year, but though I tapped them no *Dicyphus* fell off.

Peterborough, I note, is not so very far off a straight line between Battersea and Leicestershire. I shall look with care next year at the Cathedral walls and the municipal flowerbeds.

———————————————————————

TB to hets@yahoogroups: 17nov08:

I've been puzzling over some images of a *Dicyphus* species, found on cultivated Antirrhinum in a Leicestershire garden. The bugs show characters of both *pallicornis* and *annulatus* and the upper surface is covered in coarse dark hairs. (See photo.) Is this *D. escalerae*? If so, is this species previously known from the UK?

***Fig.1 Dicyphus escalerae* , Leicester 15th November 2008**

———————————————————————

BSN footnote: the following notes were gleaned from the Hollier & Matocq paper referenced earlier:-

D. escalerae was described from Spain in 1934, had reached Italy by 1956, Corsica 1965, France (SW) 1987, (SE & SW & Paris) 1996, Germany 1995 (all publn. dates), & Switzerland in 2004. It is stenophagous on *Antirrhinum majus*, nymphs were only seen on this plant. Plant damage was obvious: yellow or white flecks sometimes coalescing into larger patches, plus blackish flecks of frass. All parts of the plant were used for feeding but damage was virtually limited to the flower spikes - buds, bracts, flowers, seed pods & stems. Damage often killed shoots above the flowers or prevented development. When disturbed the bug retreats around or down the plant, rather than jumping, flying or dropping off - this aids transport with the plant! The bugs were seen on both self-seeded and newly purchased *Antirrhinum*, and on other plants within a few metres; it has occurred in light traps.

BSN

Pameridea roridulae Reuter & ***P. marlothi*** Poppius
Bernard Nau

Matt Shardlow (Buglife) recently drew my attention to two species of South African plant-bug of the tribe Dicyphini, these live in symbiotic relationship with carnivorous plants of genus *Roridula*: *R. gorgonias* & *R. dentata*. The bug *P. roridulae* lives on both species, *P. marlothi* only on the latter.

These plants produce mucilage that entraps insects but does not digest them as in other carnivorous plants (e.g. *Drosera* & *Pinguicula*). Instead, *P. roridulae* and *P. marlothi* feed on entrapped insects and then excrete waste which the plant absorbs to supplement its diet - they grow in nutrient-poor soil. Without the bugs the plants cannot find sufficient food and ultimately die. The bugs have hairs on their feet that allow them to traverse the mucilage without being caught themselves.

Matt had just returned from a flower show at Malvern (Worcs) and had seen these South African plant-bugs living contentedly on their unusual hostplants.

Photos, and more about the plants and the bugs, can be found be found by searching Wikipedia for '*Pameridea*'. Google reveals that surplus bugs are on offer in the UK from carnivorous plant aficionados. The PBI website was the source of the above taxonomy - there seem to be 2 schools of thought on the number of terminal 'i's in *marlothi*.

LYGAEIDAE

***Rhyparochromus vulgaris* (Lygaeidae) in lab**

Alex Ramsay - found a live lygaeid wandering around the lab in Reading University a few years back -he has finally identified it from the world collection at the NHM as *Rhyparochromus vulgaris*. He thinks it was most likely imported via biomass samples from elsewhere in Europe as there were a number of projects with European partners at the time.

[This lygaeid might well extend its range across the English Channel, from the coast of France-Netherlands. Check very carefully any specimens that appear to be '*Rhyparochromus pini*'. - BSN]

***Fig.2 Plesiodema pi etellum* , Morfa Harlech, 7th June 2008**

MIRIDAE

***Plesiodema pinetella* – new to Wales**

Tristan Bantock - reports that on 7th June 2008 he beat a number of small dark mirids from a low Scots pine (*Pinus sylvestris*) on Morfa Harlech NNR, Merionethshire (vc48). On closer inspection these proved to be *Plesiodema pinetella*, (see photo opp.), the identification was later confirmed by B.S. Nau. This species has spread southwards in recent years but has not previously been recorded from Wales [Howe, M. A., 2004, A provisional checklist of the invertebrates recorded in Wales. Vol 4. True bugs (Hemi.: Het.). CCW Report]

RHOPALIDAE

Corizus hyoscyami

There have been few reports of this species since the influx of 2006 so it is worth listing those few that have come to my attention (BSN). Already there are two reports from 2009, although I have not seen any here in Bedfordshire, this year or last.

Rob Ryan sent three Oxfordshire records of *C. hyoscyami*, one from 2007 and two from a single site in 2008:

2nd August 2007 - ESE of Oxford in Spartum Fen SSSI at Latchford (SP654015, vc23), by sweeping a pond edge.

15th & 30th August 2008 - NE of Oxford in Whitecross Green Wood (SP601146, vc23), by sweeping in a woodland ride.

John Tyler collected one *C. hyoscyami* in Bucks while beating Juniper near Princes Risborough at Windsor Hill Reserve, Bucks (SP827026, vc24) on 16th March 2009, he sent a photo (see right) for confirmation. This is a very early date and suggests that the bug had been hibernating in the Juniper.

John Widgery reported *C. hyoscyami* on 24th April 2009 in E. Gloucestershire, at Gotherington (SO9629, vc33). Exactly the same spot where he found it in 2007 so not a new site. However, considering there were none to be found here last year perhaps it bodes well for this.....or is that just wishful thinking?

SCUTELLERIDAE

Eurygaster testudinaria

John Campbell remarked that he usually associates this shieldbug with rank vegetation in damp situations, often with rushes and sedges present. However, on 13th July 2008, he stopped to look at a West Oxfordshire roadside verge because of the large number of Pyramidal Orchids in flower. The verge faced south west, fully exposed to the sun and with a free draining limestone soil. In an area dominated by ra, Gloucestershireon p6ther stunted and well-spaced Hardhead (*Centaurea nigra*) plants, he swept several specimens, including those of 4th and 5th instar *E. testudinaria*. A second visit, two weeks later, produced further specimens so it would appear that this is a well established colony in an unusual habitat for the species.

AROUND THE BRITISH ISLES

W SUSSEX vc13

(Bernard Nau)

Pyrrhocoris apterus (PYRRHOCORIDAE): I have received a letter dated 26th May 2008 from Mrs J. P. Sired of Saltdean, Sussex, a member of the public. saying that her son has bugs living in his garden which he has identified as this species. The site is beside the River Adur at Shoreham-by-Sea. She sent a description and photos to the RSPB but they kept these when suggesting she contact me.

S. ESSEX vc18

Tristan Bantock

Spathocera dalmanii (COREIDAE):

During August 2008 I found several unfamiliar coreid nymphs (Fig. 1a) at Wanstead flats, an area of dry acid grassland in the southern part of Epping forest. Their identity later became apparent when I swept an adult ***Spathocera dalmanni*** (Fig. 1b) from the same location. There are patches of Sheep's Sorrel (*Rumex acetosella)* growing amongst moss throughout much of this site. Although recorded from Epping Forest in 1951 (Forster. 1952), I am not aware of any recent reports of this species from this site or anywhere else in vc18 but *S. dalmanni* has been recorded recently from north Essex (Bowdrey 2000; Forsyth 2005).

References:

Bowdrey, J.P., 2000, *Spathocera dahlmanni* (Schilling) (Heteroptera: Coreidae) at Middlewick Ranges. *Essex Naturalist*, **17** (New Series), p73.

Forster, H.W., 1952, *Spathocera dahlmanni* (Schilling) (Heteroptera: Coreidae), an Essex record. *Entomologist's Monthly Magazine*, **88**, p72.

Forsyth, L., 2005, *Island of wildlife. The story of Fingrinhoe Wick- a gravel pit nature reserve.* Essex Wildlife Trust.

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Fig. 1: *Spathocera dalmanni* - (a) adult , (b) final instar nymph ©2009 Tristan Bantock

OXFORDSHIRE (admin)..... vc22(pt),23

John Campbell

A brief report from Oxfordshire

Lygus wagneri (MIRIDAE) from Beckley (SP50, vc23) September 2008, only our 4th record for Oxfordshire, det. Bernard Nau.

Gonoceros acuteangulatus (COREIDAE): now well established at the site in SU49 where it was first found in 2007. In 2008, also found at Buckland (SU39, vc22).

Bathysolon nubilus (COREIDAE): one in a pit fall trap at Frilford Heath (SU49, vc22) between July and August 2008, det. Bernard Nau.

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E. SUFFOLK vc25

Jerry Bowdrey

Spathocera dalmanii (COREIDAE):

In Het News **12**, p17 (Autumn 2008) I reported ***Spathocera dalmanii*** as new to Suffolk. Peter Harvey has drawn my attention to two recent records of his from E. Suffolk (vc25) that were not available at the time of writing: TM337472 Upper Hollesley Common 20th May 2006 and Purdis Heath TM211426 22nd June 2008. Peter also points out that the species is listed for Suffolk in S&L (1959), which I should have checked! The presence of this species on a sea wall was, hopefully, still worthy of note!

I thank Peter for drawing my attention to these records and allowing their publication.

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BEDFORDSHIRE ..... vc 30

Bernard Nau

County report for 2008

Main Features of The Year:

Like the preceding year, 2008 was very poor for Heteroptera in the county. The root of the problem was torrential rains in the early summer of 2007 which apparently had a disastrous effect on adults, eggs and immature stages of many species. In particular lygaeids and coreids were very scarce in autumn 2007 and over-wintered bugs/eggs were correspondingly scarce in the spring of 2008. The summer of 2008 was another wet season, although rainfalls were not of the severity of the previous year, however the already low bug populations were unable to recover and the autumn populations of affected groups were at least as low as in 2007. There was only one addition to the county list, this is a cryptic species likely to have been present but overlooked hitherto.

Addition to the county list:

ANTHOCORIDAE ('flower-bugs')

Dufouriellus ater (Dufour): On 6th May 2008 in Maulden Wood, at TL065383 on 'new heath', Sheila Brooke and I found a dozen or so adults of this tiny, shiny black bug; including individuals of both sexes. They were under loose bark on dead Larch (*Larix*) branches in a pile built to provide cover for reptiles in an open sunny area. In the 1950s this bug was considered to be sparsely distributed across counties south of The Wash but recently it has been found in the East Riding of Yorkshire (W.R.Dolling, pers. comm.) so it is either spreading northwards or was previously under-recorded, possibly both. Its continental range extends from the Baltic to N Africa.

Comments on other species:

Brachynotocoris puncticornis (MIRIDAE): the Bedford population of this ash (*Fraxinus*) bug continues to flourish along the former railway track, near the original British site by the River Great Ouse. There is still only one other known British site, in Oxfordshire.

Psallodema fieberi (MIRIDAE): this local bug of Wych Elm (*Ulmus glabra*) has not been recorded in the county for several years, as no specific search was made. However this year there was a good population in Ampthill on Wych Elms at the edge of Linden Wood, on 30th June & 14th July 2008.

Psallus montanus (MIRIDAE): there are as yet few British records of this birch (*Betula*) bug, only recently recognised as a good species, it is worth mentioning that I found one on alder (*Alnus*) in the Sandy Smith Reserve at Chicksands on 28th June 2008.

Cymus claviculus (LYGAEIDAE): a ground-dwelling species, usually only found in odd ones and twos, was found in considerable numbers on made-up weedy ground planted with sapling trees, beside Meadow Lane Quarry, Cople, on 22nd July & 25th August. It appeared to be associated with Toad Rush (*Juncus bufonius*).

Metapoplax ditomoides (LYGAEIDAE): after an initial plethora for a year ore two after this recent British colonist was first seen in the county, in 1996, it has become much less common. However, on 25th August 2008, it was common at one site (at least), with *Cymus claviculus* (see above).

Spathocera dalmani (COREIDAE): none could be found on 14th June 2008 at the usual Maulden Wood site.

Syromastus rhombeus (COREIDAE): none recorded in the county this year!

Aelia acuminata (PENTATOMIDAE): only two records this year! A few adults on Potton Heath on 21st May, and a 5th instar nymph & a few adults in Maulden Wood (on grassland managed for invertebrates!) on 29th August.

Statistical overview:

Table 1 is a 10-year summary table for the county for the years up to and including 2008. It shows the annual effort and the results this produced, so that the year's records can be considered in a quantitative context. The number of records and species in 2008 were the lowest since the year 2000, the reasons were explained above.

Year:	Mean	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999
Site-visits	102	78	67	79	135	76	105	109	166	115	90
Records	837	659	709	868	863	864	926	1261	870	578	775
Year's spp	217	192	218	231	221	226	221	239	222	187	215
New spp	3.8	1	4	8	3	0	3	3	4	6	6
VC spp	—	388	387	383	375	372	372	369	366	362	356
Note: 'Mean' is over the 10 years 1999-2008											

[This is an edited version of the County Heteroptera Recorder's report prepared for the Bedfordshire Natural History Society, to be published in Bedfordshire Naturalist 2008, vol. 63, pt.1.]

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GLOUCESTERSHIRE vc33,34

John Widgery

News from the county in 2008

The cumulative effect of two successive cool, wet summers has had a marked impact on warmth-loving species, especially those which have been expanding their ranges northwards due to the, hitherto, warming climate. This particularly applied to ***Aelia acuminata***, the coreids ***Stictopleurus abutilon*** & ***S.punctatonervosus*** and ***Corizus hyoscyami*** - which despite searches could not be found at all during 2008. If the current majority scientific opinion is correct this is probably only a temporary blip and it will be interesting to see how the situation develops over the longer term. It clearly demonstrates however just how climate-sensitive some species are.

Despite this it turned out to be an interesting year, producing four new species for the county although at least some were probably overlooked previously.

New for the county:

Agnocoris reclairei (MIRIDAE): A single specimen was beaten from White Willow (*Salix alba*) its principal host,at Coombe Hill Canal NR (SO8827, vc33)on 24th August.

Capsus wagneri (MIRIDAE): Several swept from Reed Canary Grass (*Phalaris arundinacea*) at Ashleworth Ham NR (SO8026, vc34) on 15th August.

Pilophorus cinnamopterus (MIRIDAE): Generally a common species on Scots Pine (*Pinus sylvestris*) in southern England but, surprisingly, no previous records from Gloucs until 2008 when it was found on its host species at Foscombe Hill, Ashleworth (SO8026, vc34) on 15th August. It is for conjecture whether it has been overlooked or is a recent new arrival - S&L(1959) give its range as south of a line from The Wash to Glamorgan, which means that Gloucs may always have been near to the edge of its range.

Buchananiella continua (ANTHOCORIDAE): 1st Gloucs record was on dead twigs at Ashleworth(SO8126, vc34) on 15th August. It was later discovered at Woodmancote (SO9727, vc33) on 9 October in a bird feeder containing rotting peanuts.

Other county rare or scarce species in 2008:

Capsodes gothicus (MIRIDAE): This very local insect was found at Staple Edge Wood (SO6411, vc34) on 12th July. All Gloucesrecords so far are from the Forest of Dean. It is the 6th record for the county.

Teratocoris antennatus (MIRIDAE): A male at Coombe Hill Meadows NR (SO8727, vc33) on15th August which was only the 3rd modern record for Gloucs. Also refound later the same month at the only previously known site in the county, Ashleworth Ham NR (SO8326, vc34),when two females were swept from Reed Canary Grass (*Phalaris arundinacea*).

Megalocoleus molliculus (MIRIDAE): only the 6th Gloucs record for this species was obtained near Woodmancote (SO9727, vc33) on 14th August, swept from Mugwort (*Artemisia vulgaris*) although Yarrow (*Achillea millefolium*) its usual host was growing nearby.

Oncotylus viridiflavus (MIRIDAE): Found again this year on Common Knapweed (*Centaurea nigra*) its food plant,near Wickridge Street (SO8126, vc34) on 15th August – a 5th county record.

Elatophilus nigricornis (ANTHOCORIDAE): Following a county first for this species at May Hill (SO6921, vc34) in 2007, it was found again,on its host Scots Pine (*Pinus sylvestris*) near Wickridge Street (SO8027, vc33) on 15th August.

Heterogaster artemesiae (LYGAEIDAE): Following its rediscovery in the county on Cleeve Hill after a period of over 60 years in 2006 it was found again in good numbers at the same site (SO9825, vc33) on 13th July. It was formerly recorded at Rodborough Common in 1944 and is probably still there and may well be widespread throughout the Cotswolds.

Eurygaster testudinaria (SCUTELLERIDAE): Previously regarded as 'county scarce' but this status is no longer justified. It has been found to be quite widespread being found at 19 sites since 2004 and in 2008 was collected at a further three.

Eurydema oleracea (PENTATOMIDAE): The 6th modern county record of this species was obtained at Ley Park Wood (SO7117, vc34) on 13th April.

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DENBIGHSHIRE ..... vc 50

Bryan Formstone

***Aquarius najas* (GERRIDAE) new county record**

On 14th April 2008 I had the good fortune to see at least 200 *Aquarius najas* along the River Dee and in the canal intake above Llangollen (SJ195432). This I believe is the first record for Denbighshire. A year later, on 24th April 2009, I again saw *Aquarius najas*. There were at least 5 pairs in cop on slack water at the edge of the River Dee below Llangollen at Cwmalis Wood SJ248412. This is the second county record, unless anyone knows different!

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YORKSHIRE ..... vc 63

Jim Flanagan

The following records all refer to vc63, SW Yorkshire. During 2008, ***Stictopleurus punctatonervosus*** was found new to Yorkshire county from post-industrial sites in the Upper Don Valley (Deepacar, SK2997)and Dearne Valley (ex-colliery site of Manvers, SE4401) during May and July by Jim Flanagan and John Coldwell respectively (confirmed by Bill Dolling and Stuart Foster). Further records were obtained of another rhopalid bug, ***Rhopalus subrufus***, also from visits in May to the Upper Don Valley site - SK2997 & SK2996 (previously recorded new to Yorkshire by Bill Dolling from the Magna site between Rotherham and Sheffield during 2006) along with ***Berytinus montivagus*** and ***Aelia acuminata*** (the latter new to Yorkshire in 2006). ***Neottiglossa pusilla*** was found on another former colliery site near Worsborough during 2007 (5th Yorkshire record, SE3502). This species along with ***Aelia acuminata*** and ***Palomena prasina***, were also present at the Manvers site in 2008. ***Buchananiella continua*** was recorded new to VC63 (SK3387) from a compost heap in an urban residential area in Sheffield (previously recorded in Yorkshire from VC61).

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LITERATURE NOTES

Dmitry Musolin (*musolin@gmail.com*) has provided the following information:

(i) The *Russian Entomological Journal* has made available a full pdf version of papers published in the Journal in 2001-2006 (vols. 10--15; 223 papers), see:
http://kmk.entomology.ru/rej.htm#alphabetic

(ii) The following water-bug bibliography is available on-line:
Bibliography of semi-aquatic and aquatic bugs (Heteroptera: Gerromorpha, Leptopodomorpha & Nepomorpha)
http://ppmeiameiameia.googlepages.com/home

(iii) The following two papers have now been published, contact DM for PDF versions :

Musolin D.L. & Ito K., 2008.
Photoperiodic and temperature control of nymphal development and induction of reproductive diapause in two predatory *Orius* bugs: interspecific and geographic differences.
Physiological Entomology, **33** (4): 291–301.
http://www3.interscience.wiley.com/cgi-bin/fulltext/121413096 PDFSTART

Tougou D., Musolin D.L. & Fujisaki K., 2009.
Some like it hot! Rapid climate change promotes changes in distribution ranges of *Nezara viridula* and *Nezara antennata* in Japan.
Entomologia Experimentalis et Applicata, **130** (3): 249-258.
http://www3.interscience.wiley.com/journal/122189322/abstract

(iv) In HN12, p20, the following reference was incomplete:

Saulich A.H. & Musolin D.L., 2007.
Four seasons: Diversity of seasonal adaptations and ecological mechanisms controlling seasonal developmentin true bugs (Heteroptera) in the temperate climate. In: Adaptive Strategies of Terrestrial Arthropods to Unfavourable Environmental Conditions: A collection of papers in memory of Professor Viktor Petrovich Tyshchenko. Stekolnikov A.A.(ed.) *Proc. Biol. Inst. of St. Petersburg State University,* **53**: 25–106. (in Russian, with expanded 3-page English summary.

BRC RECORDING SCHEMES

Vice County #	Vice County name	Contact	Contact address
VC 1 & 2	W (inc. Scilly) & ECornwall	Keith Alexander	keith.alexander@waitrose.com
VC 3 & 4	S & N Devon	Keith Alexander	keith.alexander@waitrose.com
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VC 10	Isle of Wight	David Biggs	Plum Tree Cottage, 76 Albert Rd,Gurnard, Cowes, Isle of Wight PO31 8JU
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VC 13 & 14	W & E Sussex	Peter Hodge	peter.j.hodge@tesco.net
VC 15 & 16	E & W Kent	Eric Philp	eric.philp2@virgin.net
VC 17	Surrey	Jonty Denton	JontyDenton@aol.com
VC 18 & 19	S & N Essex	Peter Kirby	peter.kirby7@ntlworld.com
VC 20	Hertfordshire	John Widgery	johnwidgery@waitrose.com
VC 23 (& 22pt)	Oxfordshire**	John Campbell	campbell397@btinternet.com
VC 25 & 26	E & W Suffolk (water bugs)	Adrian Chalkley	adrian@boxvalley.co.uk
,,	E & W Suffolk (land bugs)	Nigel Cuming	nigelcuming330@btopenworld.com
VC 30	Bedfordshire*	Bernard Nau	nauhet@btinternet.com
VC 32	Northamptonshire	Tony Cook	tony.cook@newtonfieldcentre.org.uk
VC 33 & 34	E & W Gloucestershire	John Widgery	johnwidgery@waitrose.com
VC 37	Worcestershire*	John Partridge	records@wbrc.org.uk
VC 53 & 54	S & N Lincolnshire* (shieldbugs & allies)	Annette Binding	allan.binding@ntlworld.com (also spiders)
..	.. (other land bugs)	Colin Smith	Csmith@countrywidefarmers.co.uk
..	.. (water bugs)	Richard Chadd	richard.chadd@environment-agency.gov.uk
VC 55	Leics & Rutland	David Budworth	dbud01@aol.com
VC 56	Nottinghamshire	David Budworth	dbud01@aol.com
VC 57	Derbyshire	David Budworth	dbud01@aol.com
VC 58	Cheshire	Steve Judd	Steve.Judd@liverpoolmuseums.org.uk
VC 59 & 60	S & W Lancashire	Steve Judd	Steve.Judd@liverpoolmuseums.org.uk
VC 61 & 62	SE & NE Yorkshire	Stuart Foster	stuart@blackdan6.plus.com
VC 63	SW Yorkshire	Jim Flanagan	jimflanagan@btopenworld.com
VS 64	Mid-W Yorkshire	Stuart Foster	stuart@blackdan6.plus.com
VC 65	NW Yorkshire	Steve Hewitt	SteveH@carlisle-city.gov.uk
(—)	Cumbria*	Steve Hewitt	SteveH@carlisle-city.gov.uk
VC 69	Westmorland	Steve Hewitt	SteveH@carlisle-city.gov.uk
VC 70	Cumberland	Steve Hewitt	SteveH@carlisle-city.gov.uk
(—)	Ireland (all)	Brian Nelson	brian.nelson@magni.org.uk

* records from administrative county too. **not Berks admin. county
Recorders listed are either a designated County Recorder, or are willing to accept records on behalf of the county listed here.

Water Bug Recording Scheme

There has been a recent update to the Water Bug Data on the NBN Gateway. Records now go up to 2008 and should include any records sent to me prior to August last year. I am currently inputting 2008 data and hope to complete this task before the promised hot summer weather arrives, when I will hopefully be outdoors! I would, therefore, be grateful for any records you may have.

Spreadsheet is fine and ideally the columns contain:

species name, date (dd/mm/yyyy),
site name, grid ref, VC,
recorder name,
name of determiner (if not the same).

Extra information on habitat, abundance, stage, sex and any other notes are very welcome.

The dataset ***Water Bug (aquatic Heteroptera) data for Britain*** contains the data gathered by Thomas Huxley for the *Provisional Atlas*.

The dataset ***Aquatic Heteroptera dataset*** contains all the subsequent records sent to me. There are also many older and historic records in this dataset, which came to me from various sources. Should you notice any errors on the Gateway please let me know, as it is impossible to avoid the odd mistake and corrections can be made.

I hope you all have a fruitful 2009 and let's hope for an improvement on the last two seasons!

Sheila Brooke