Het News

Newsletter of the Heteroptera Recording Schemes

Issue 5
Spring 2005

2nd Series

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Editorial: Welcome to the Spring 05 edition of Het News. We have a bias towards terrestrial bugs in this issue but we will endeavour to conjure up some aquatic news for the autumn issue. We welcome an article about the ubiquitous *Nezara* in Japan and we thank all contributors once again for taking the time to provide interesting and varied material.

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Contents

What is a True Bug? ..... Bernard Nau

For many years I innocently assumed that the term True Bug referred to the Heteroptera. After all, in 1959 Southwood and Leston called their work on the Heteroptera "Land and Water Bugs of the British Isles"; and to put the matter beyond doubt, the preface begins with the words "The bugs, Heteroptera, form perhaps the ideal group of British insects to study."

This usage is understandable in as much as the Heteroptera include the Bed Bug, an insect very familiar to the general public in pre-DDT days. Then, a reference to a 'bug' would certainly have been interpreted as meaning a Bed Bug. In fact, I have a copy of a lengthy 1942 research report on the ecology of this insect, the research having been requested by a Ministry of Health Committee on the Eradication of Bed-Bugs.

Of late, however, I have noticed a trend for the useful label True Bug to be hijacked to cover Hemiptera as a whole. My theory is that this is down to the Americans. They have long used the term 'bugs' to refer to any small creepy-crawly, hence when actually referring to Hemiptera, let alone Heteroptera, they required another label and True Bug is an easy choice. More recently, in British English, the American usage of 'bugs' has become widespread in TV, radio and printed press, and so here too there has become a need for an unambiguous term to apply to Hemiptera and the same has happened.

I don't know when the rot set in but a rapid survey shows that in 1973 Michael Chinnery's "A field guide to the insects of Britain and northern Europe" applies the term True Bug to the entire Hemiptera, white-flies, aphids and all. Bill Dolling does the same in his 1991 work "The Hemiptera". Two years later, George McGavin on page 10 of his "Bugs of the World" calls Hemiptera 'bugs' and Heteroptera 'true bugs'. In 2003, Roger Hawkins' 'Shieldbugs of Surrey" (page 10) refers to "Heteroptera, the true bugs". And, in 2004, The Invertebrate Conservation Trust, also known as "*buglife*"(!), produced a publicity poster which explains that "Bug is also a broad term used for any invertebrate; however, technically the word refers to animals belonging to one order of insects – the Hemiptera." It then expands this as follows: "true bugs = Heteroptera; hoppers & cicadas =Auchenorrhyncha; aphids, plantlice, whiteflies & scale insects= Sternorrhyncha".

So there we have it! George McGavin and *buglife* seem to have a good technical solution if we can bear to share the term 'bug' with homopterists, but can mere entomologists swim against the media tide?

PS: the *buglife* poster also says that, in the 14th century, 'bugge' meant a phantom or goblin, and possibly derived from the Welsh word 'bwg' – but we can't let these people in too!

The Southern Green Shield Bug *Nezara viridula* (L.) expands its distribution range, not only in the U.K.

Dmitry L. Musolin
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When our grandchildren write the history of global warming… the stinkbugs… may not loom large… But our descendants may well decide that it was the long string of such close-to-home observations—the early springs, the shifting ranges of plants and animals, the mortal heat waves—that, more than any climatological data, convinced people that something needed to be done about global warming.

R. Kunzig (2005),
No.1 story of *Discover* magazine 100 Top Science Stories of 2004

Nezara viridula is probably 'the-most-often-cited' heteropteran in the world and it is not surprising at all considering its almost cosmopolitan range and the great economic importance of this pest species (Fig. 1). Recently, the interest in this shield bug has increased due to emerging links between spreading of this species and climate warming.

Barclay (2004) and shortly after him Shardlow & Taylor (2004) reported a few colonies of *N. viridula* breeding in London in 2003. Inspections in 2004 showed that some of those colonies survived the winter of 2003/2004 and new colonies were also found (Barclay, pers. comm.). It was only 45 years before that Southwood and Leston (1959) stated that *N. viridula* is 'unlikely to become established' in the British Isles!

The United Kingdom is not the only place on the globe where appearance of *N. viridula* most probably illustrates the on-going climate change. Recently a similar range expansion of this species was reported in central Japan.

In the early 1960s, the northern edge of the range of *N. viridula* was in Wakayama Prefecture (34.1°N) and distribution of this species was shown to be limited by the +5°C mean temperature isotherm of the coldest month (January) (Kiritani *et al*., 1963). This was because overwintering mortality depends on mean January temperature, a decrease of 1°C results in approximately 15% increase in mean overwintering mortality (Fig. 2). *Nezara viridula* inhabited locations to the south (especially along the oceanic coast), but was absent to the north.

Fig. 1 *Nezara viridula* demonstrates a pronounced case of seasonal body colour polyphenism: it is green in summer (above) and turns brown or reddish when enters diapause in autumn (below) (Photo by the author).

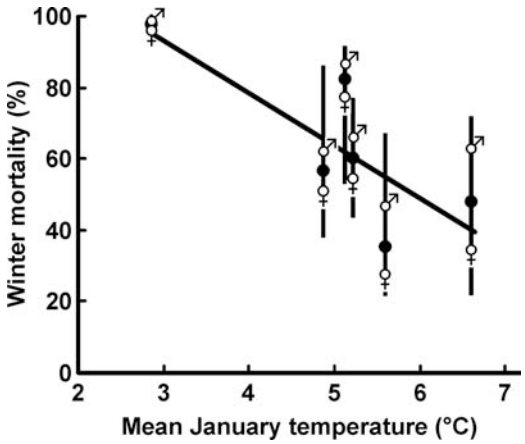

Fig. 2 Winter mortality of *Nezara viridula* adults. Solid circles mean mortality (all adults); symbols of sexes, mortality in corresponding sexes; ranges are the range of mortality in different types of hibernacula (data from Kiritani *et al*., 1966); linear regression trend line refers to the mean mortality.

Forty years later, *N. viridula* was recorded at least 70 km further north (in Osaka, 34.7°N) and eco-physiological characteristics of the local population were studied with an emphasis on diapause and overwintering (Musolin & Numata, 2003a, b).

Historical climate data (1950–2000) shows that the mean and lowest temperatures of winter months increased by 1–2 °C in Osaka from 1950s to 1990s and winters in Osaka in 1990s became as warm as they were in Wakayama in 1950s (Fig. 3). Thus, warming improved potential overwintering conditions for *N. viridula* in Osaka and promoted northward range expansion of this species. In field experiments under quasi-natural conditions, *N. viridula* showed very high winter survival.

However, overwintering success of insects is determined not only by temperature, but also by proper timing of diapause induction. Laboratory and field experiments showed that in Osaka, adult diapause in this species is induced after mid-September, much later than in local seed feeding heteropterans. This late timing of diapause induction results in ineffective reproduction in late-season: some females start oviposition in autumn when the progeny have no chance of attaining adulthood and surviving winter, and both reproductive adults and their progeny die before the next season. Thus, it is suggested that *N. viridula* is still, to a certain extent, maladapted to the environmental conditions in Osaka. Further success (or failure) of establishment of this species in the recently colonized area will probably depend on the ability of the species to evolve a lengthening of the critical photoperiod for diapause induction and, consequently, advance the timing of diapause induction. Earlier diapause will allow *N. viridula* to avoid maladaptive reproduction in autumn.

It will be interesting to follow this bug's climatic response in the British Isles.

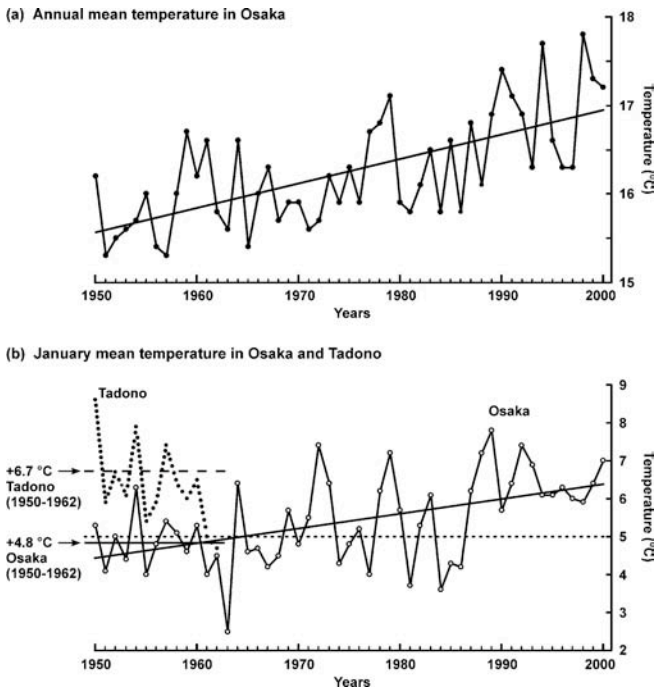

Fig. 3 Changes in air temperature in Tadono (within the range of *Nezara viridula* in the early 1960s in Wakayama) and in Osaka. Annual mean (a) and January monthly mean (b) for Osaka are shown along with linear regression trend lines. Additional lines represent mean January temperatures in Tadono and Osaka for 13 years (1950–1962) preceding the Wakayama range survey and temperature of +5 °C suggested as critical for *Nezara viridula* overwintering (data from Japan Meteorological Agency, 2003) (The figure is partly from Musolin & Numata, 2003b).

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Sigara iactans Jansson, 1983 ..... Sheila Brooke

A couple of months ago I drafted an article for this issue entitled 'Look out for *Sigara iactans* - it will be here sooner or later!'.

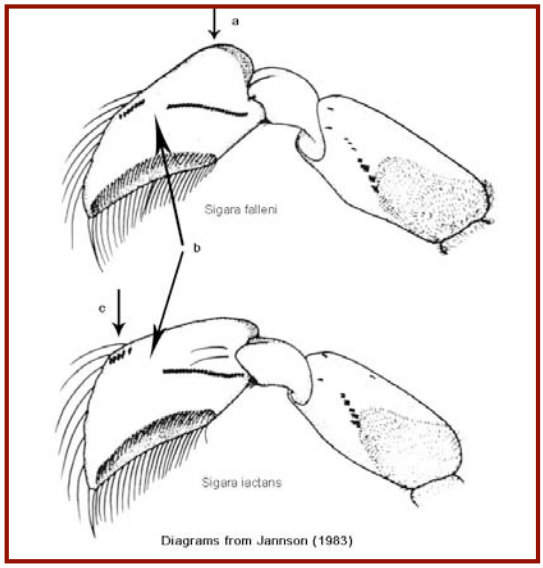
The Dutch water bug atlas (Aukema et al 2002) showed that several water bugs had spread through The Netherlands during the last decade and seemed likely to colonise Britain before too long. I planned to feature one likely newcomer in each of the following few issues, and chose *S. iactans* for this issue, as the most likely of these.

With this possibility in mind, and a decent spell of weather in mid March, Bernard and I visited a disused sand pit in Norfolk, a habitat similar to that in which *S. iactans* was first found in The Netherlands. The bug resembles *S. falleni* very closely and so we searched for *falleni*-type bugs but failed to find any.

We then headed for the coast to see if any of the dykes and pools held anything of interest. In this rather different habitat we did find *S. falleni*, but also a male that appeared at the time to have rather '*iactans*-like' characters, which we kept. It was indeed *S. iactans* and has been confirmed as such.

Full details will appear in a future issue of Het News after formal publication but suffice to say:

- Check all *S. falleni* carefully; *S. iactans* is often found with *S. falleni.* The females of the two species are difficult to separate, and the male palae provide the best means of separating the species.
- *S. falleni* has large, rather triangular palae, widest at the base (a), and the inner row of pegs, if extended, meet the short distal row (b).
- *S. iactans* has even larger palae that are trapezoidal in shape with the widest part being near the outer end (c) , and the inner row of pegs, if extended are always below the short distal row (b).



Diagrams from Jannson (1983)

There is no knowing how long it has been here – or if indeed the specimen we found was the sole immigrant. The latter seems rather unlikely but the task now is to find more. We have looked locally, but after the main '*falleni'* season, without success.

Watch this space…….!

References:

Aukema, B., Cuppen, J.G.M. et al 2002. *Verspreidingsatlas Nederlandse wantsen (Hemiptera: Heteroptera) Deel 1:* Dipsocoromorpha, Nepomorpha, Gerromorpha & Leptopodomorpha. Book publ. by: EIS-Nederland, Leiden. 169pp.

Jansson, A. 1983. Three new palaearctic species of *Sigara (Subsigara)* (Heteroptera, Corixidae). Annales Entomologici Fennici **49**, 65-70.

*A **local** rarity - Nabis rugosus* ..... W.R.Dolling

In my experience there is nothing special about the habitat requirements of *Nabis rugosus*. It seems happy with almost any habitat that is not extreme in some way, avoiding very shaded areas, very wet or very dry places, very acid habitats and so forth. Its British distribution extends from the south coast to Perthshire, Morayshire and Rhum. Yet, despite having lived in the East Riding (vice-county 61, more or less) for more than a dozen years, and having accumulated more than 70 locality records for other species of Nabidae in the vice-county, I have never found it here; though I have encountered it on occasional forays to other parts of Yorkshire, at Richmond, Doncaster, Wakefield and Bishop Monkton. There does not seem to be anything special about the East Riding: about forty 10-km squares worth of sandy river alluvium, chalk hills and glacial clays, mostly given over to agriculture. But there are very few records for *Nabis* rugosus. In 1996, the county recorder, Stuart Foster, had 41 records of this species in his Yorkshire database but only one of them referred to the East Riding. A search *of The Naturalist* for the years 1918 to the present day yielded a single East Riding record for the bug, in 1929, from Ruston Parva, a village on the Wolds about 10 km south-east of Bridlington. I am completely at a loss to account for the local scarcity of this otherwise common and environmentally undemanding insect.

Book Review

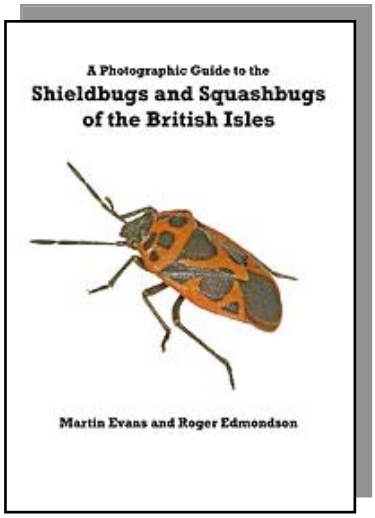
A photographic Guide to the

Shieldbugs and Squashbugs of the British Isles

Martin Evans and Roger Edmondson

Published by WGUK, 2005, price £14.95 paperback, ISBN0 9549506 0 7, 123pp & 206 colour plates, A5

For those of you interested in Shieldbugs this is a new photographic guide to help you identify these rather charismatic insects. Also included are the Coreids, or Squashbugs, cousins of the Shieldbugs.



The British species are introduced with general information about their life history and structure, with a glossary of useful terms. (The use of the term 'true bug' for the Hemiptera is arguable – see page 1.)

There is not a text key, but there are 5 pages of picture keys to use as an initial reference, before turning to the species accounts to accurately determine your identification. The species accounts occupy a double page per species, one page having several different photographs of adults, showing features useful in their identification. In some cases nymphs are also illustrated. The other page gives ID features, size range, larval details, habitat information and distribution. There is also a useful note listing similar species so that a double check on the identification is possible. Migrants, vagrants and former residents are listed with notes.

A table of life histories indicates when the bugs are adult or immature, their preferred food type and where they are most likely to be found.

The common names, when used, follow those applied by Southwood & Leston in *Land and water bugs of the British Isles* (1959) and are virtually the same as those used by Roger Hawkins in *Shieldbugs of Surrey,* (2004). In the FSC pull-out *Guide to shieldbugs of the British Isles,* (2004) Bernard Nau has applied new names to those with no common name and changed some of the others. The use of common or scientific name is personal preference, but there is one bug with a very misleading common name. The Sloe bug, *Dolycoris baccarum* has never, as far as I know, been seen on Blackthorn – but it is very hairy and Hairy shieldbug is a more apt name.

There is very little to criticise about this handy little book. However, the first two Cydnids are called *Tritomegas (Sehirus) bicolor* and *Canthophorus (Sehirus) impressus*. This suggests that *Sehirus* is the sub-genus, which is not the case. Both *Tritomegas* and *Canthophorus*, were promoted to genus from subgenus and so were removed from the genus *Sehirus*. Also a very minor criticism in a series of excellent photographs – when I look at *Arenocoris falleni* it seems to be missing a right 'shoulder'!

I am sure this will prove to be a very useful guide, easily carried round in the field. The photographs are very high quality and, while care must be taken not to rely wholly on the picture key, most species should be identifiable in the field with a x10 lens. Together with other recent publications on Shieldbugs mentioned above, one hopes this may result in a spate of keen, new heteropterists.

The front cover shows a very beautiful, but very rare bug, *Eurydema dominulus*, which has rarely been seen in recent years, but others are there for the finding. Some, however, will take more finding than others.

Good luck!

Sheila Brooke

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Web focus

www.WildGuideUK.com – is a photographic website run by Martin Evans, co-author of the above book. Apart from shieldbugs it includes selections of Orthoptera, Diptera and Lepidoptera. There are also links to a large number of natural history sites.

www.hetnews ?- we are, with help from Bernard's nephew, looking at launching a web site that will, amongst other things, provide information about the Recording Schemes and enable you to download Het News at your leisure etc.

Unfulfilled promises!

Unfortunately formal publications regarding the recent arrivals *Brachycarenus tigrinus, Hypseloecus visci* and *Naucoris maculatus* have not yet materialised and so details of these will, hopefully, be included in the next issue. Also having concentrated on researching *Sigara iactans* I have failed miserably in gathering information about *Notonecta lutea*. Maybe one of you will have found it before the Autumn issue comes out! SEB

Comparison of *Peritrechus nubilis* and *P. geniculatus*

John Widgery

I have been finding quite high numbers of *Peritrechus nubilis* and *P. geniculatus* together in leaf litter this autumn and have had the opportunity to photograph both species side by side. These are the only two British Peritrechus which normally have entirely black appendages (i.e. antennae & legs). Others have some pale colouration on, part of either the antennae or legs.

The photograph (right) shows clear differences which may not always be so apparent when examining one species in isolation. It may help those heteropterists, not already familiar with both species, to distinguish specimens easily in the field with just the aid of a 10x magnification. The key field identification features are shown below.

Photograph © John Widgery
Left - *P. nubilis* Right - *P. geniculatus*

	P. nubilis	***P. geniculatus***
General appearance	Bright with pale buff/cream background colour, markedly contrasting with darker pattern. Usually carries a distinctive pale spot on apical part of membrane.	Generally dull, with comparatively little contrast between orange/brown background colour and darker pattern. Apical spot on membrane very dull and hardly noticeable.
Pronotal shape	Almost 'square' (i.e. about as long as wide).	Elongate (i.e. longer than wide).
Pronotal colour	Dark over apical half, usually clearly contrasting with paler posterior half. Extreme anterior border of pronotum dull yellowish near mid-line (sometimes difficult to see).	Dark over apical two-thirds, often with little contrast with the paler posterior third.
Antennal segments	A3 is slender and usually narrower than A1	Apex of A3 is thicker than or as thick as A1

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From the Regions

North Somerset

Roger Edmondson and Martin Evans found an interesting bunch of shieldbugs on 5 May 2005 on Crooks Peak, near Cheddar, VC6. They were *Zicrona caerulea*, *Thyreocoris scarabaoeides* , 3 *Sciocoris cursitans* and the increasingly ubiquitous *Palomena prasina*, all within about two square metres.

(It is always a delight to find *Zicrona*, but being a predator you never know where it is going to turn up next! Eds.)

Yorkshire

Martin Hammond writes:

Records of *Cymatia coleoptrata* from a site in the Vale of York and another near Ripon confirm an ongoing northwards range expansion in Yorkshire. On the Market Weighton Canal washlands, *Ranatra linearis* is now breeding in several ponds and is clearly well established following the appearance of small numbers in 2003. At the same site, *Micronecta scholtzi* was an interesting record of another species at the northern edge of its range.

Notonecta viridis was recorded from a pond on the outskirts of Middlesbrough and also at Hell Kettles near Darlington (Co. Durham).

A number of records of *Micronecta poweri* from rivers in the Yorkshire Dales fill an obvious gap in the Provisional Atlas map. Other records of note include *Glaenocorisa propinqua* from a barren moorland pond in Nidderdale and *Sigara limitata* from two sites near Ripon.

Jim Flanagan writes:

I have a record of a number of *Ranatra linearis* obtained whilst undertaking a torchlight newt survey of a fishing pond in the Goole area on the early morning of Tuesday 24 May. I counted a total of nine individuals in two locations in the water close to the banks.

(Ranatra linearis is clearly well established in the Humber estuary region and the northernmost records in the west of the country are from E. Cheshire. Any further advances northwards will be of interest.)

Bedfordshire

Part of Bedfordshire is on the Greensand offering an interesting variety of fauna and flora. There is a field near Sandy that we visit fairly regularly, which has not been cultivated for several years but has occasionally been sprayed. It has significant patches of bare sandy ground and a varied flora, the most significant being Stork's-bill, Forget-me-not, Sheep's Sorrel and Field Pansy but there are also Cudweed, St John's-wort and many others.

We visited this site in early May on a coolish day and found a small number of our usual species such as *Peritrechus lundii, Sehirus luctuosus, Arenocoris falleni, Graptopeltus lynceus, Rhopalus parumpunctatus* and *Cymus claviculus* – but were missing some of the other regulars. We did, however, add *Thyreocoris scarabaoeides* and *Syromastes rhombeus* to our site list. However on returning on 27 May, on a very warm day, we managed to augment our previous list significantly with: *Megalonotus sabulicola, M. emarginatus, M. praetextatus, Spathocera dahlmanni* (new for the site) and a number of more ubiquitous bugs such as *Coreus marginatus, Eurydema oleracea, Eysarcoris fabricii, Aelia acuminata and Dolycoris baccarum*. Not a bad spot, at least 5 Red Data Book species!

SEB & BSN

Hertfordshire

John Widgery found some *Stictopleurus*, very late, in December and then again, very early, in March. Not a long sleep! We have not seen any this year yet – have you?

Dorset

John Hunnisett is collating all Dorset records and would very much appreciate any information about species you may have found there in your travels. John's email address is dj.hunnisett23@ntlworld.com

Local Records

We thought it would be useful to compile a list of county contacts to whom Het records, that are outside your area, could be sent. These may be individuals, County Recorders, LRCs etc and we invite you to nominate the contact for your county.

We will start a list with people we feel sure would be happy to receive your records, but if there are any corrections please let us know and we will amend the list in the next issue. There are surely lots of contacts to add so please let us know.

Bedfordshire Bernard Nau
nau.bs@btinternet.com

Cheshire Steve McWilliam
info@rECOrd-lrc.co.uk

Cornwall Ian Bennallick
ian@cornwt.demon.co.uk

Cumbria Steve Hewitt
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Pond Reference Sites for Recorders

The National Pond Monitoring Network (NPMN) is proposing to set up Pond Reference Sites for Recorders (PondRSR) in partnership with NBN Trust and recording schemes. A number of ponds will be selected and visited by recorders on a regular basis, thus building up datasets covering various taxonomic groups. It is early days yet but we will keep you informed on the progress.

OBITUARY - Alan A. Savage

News of the death of Alan Savage came from Thomas Huxley. Thomas was hugely appreciative of the help and encouragement he received from Alan, especially during the early stages of the compilation of the *Provisional atlas of the British aquatic bugs*. A full obituary will be provided by the Freshwater Biological association in the next issue of *Het News*.

The Het Recording Schemes .....Sheila Brooke & Bernard Nau

Water Bug Recording Scheme

Species lists

The computerised among you may, or may not, have noticed that an updated water bug checklist was sent out by **MapMate** about two months ago in a patch, Issue 31. This includes additions and also deals with changes in spelling and taxonomy.

Likewise the latest version of **Recorder,** version 2.3.7.8, has a new checklist in its taxon dictionary. However, it is not listed under 'Heteroptera' but as 'An annotated checklist of British water bugs (Hemiptera-Heteroptera)', so you may have to search for it.!

For those with neither of these computer packages there is a checklist in Het News No3, and I can supply a copy of this if needed.

The above checklists now follow the order and nomenclature of the *Catalogue of the Heteroptera of the Palaearctic Region 1,* (Aukema, B. & Rieger, C. eds. 1995). But two species new to Britain already have to be added: *Naucoris maculata* follows *Ilyocoris cimicoides* and *Sigara iactans* (see page 4) follows *S fossarum.*

The Future of Water Bug Recording

Following publication of the Provisional Atlas we now need to gather additional records for the definitive atlas, which we hope to see published in the not too distant future. In particular we need to fill the major gaps in the Provisional Atlas, and monitor well covered areas to identify any changes. Since its publication I have amassed several thousand records in Recorder 2002 and intend to submit them to the NBN Gateway website, so that you can keep up to date with coverage and spread or decline of water bug species. So please do keep your records coming in!

Submission of records

Send computerised records by e-mail, in tabular layout (use tabs to separate columns). The file format should be either tab-delimited text, or Excel, or a Recorder export file.

Records submitted on paper should preferably be on standard recording forms – contact the Organiser for the current version.

Validation of records

Records held by Recording Schemes must be as accurate and complete as possible. Accurate identification of species is paramount. By using up-to-date keys most water bugs should be identifiable but a few do cause problems. If you are new to bug recording, or simply uncertain of a particular ID, please do send specimens to the Organiser to be verified and returned to you for future reference.

Also we sometimes ask to examine specimens if, for example, a bug is out of normal range or in unusual habitat. Any of us will slip-up from time to time but independent verification helps to ensure the highest possible standards.

Information required

It is worth listing the requirements for records submitted to the scheme, especially for those of you who may not have done so before:

1. Essential

Species name – from the current checklist.
Site name – if it is esoteric, like 'Hill Farm', include the nearest town or village - you may know where you were but we have to find it on a map!
Grid reference – a 6-figure grid ref (e.g. TL123456) is preferred but a 1km square is OK, a 10km square is better than nothing.
Date – the preferred format is 20/01/2005
Vice County – if you know this, please do give it.

2. Desirable

Abundance – an indication of numbers.
Sex – relative numbers of males and females helps to define a species' seasons.
Stage – some nymphs are recognisable to species eg *Ranatra, Nepa, Ilyocoris* and others to genus e.g. *Gerris* spp, *Notonecta* spp. Information on nymphs helps to build up a picture of the species' seasons.
Altitude - especially in upland areas
Habitat – a description of the type of site e.g. brackish dyke, disused clay pit etc., and any of the 'useful' information listed below would be appreciated.

3. Useful

Size of water body e.g. $1m^2$ or 1 hectare
Macrophyte presence – marginal / emergent / submerged
Presence of fish / ducks
Open aspect / heavily shaded
Substrate artificial / clay / sand/ silt/ peat etc.

This information is not all essential for simple mapping, but it does help to build up the picture of a species' biology and habitat requirements and, in turn, the conservation needs. We realise that some of you are not primarily recording bugs, and that on a tight time schedule it is not always possible to give more than basic data – and this is most welcome. However, if you can give more of the information outlined above please do include it.

Terrestrial bug records are also required and in the next issue we plan to say more about these.

Please send contributions for the next issue by 30th September 2005