Spider Recording Scheme News
July 2012, No. 73

Editor: Peter Harvey; srs@britishspiders.org.uk *SRS website:* http://srs.britishspiders.org.uk

My thanks to those who have contributed to this issue. S.R.S. News No. 74 will be published in November 2012. Please send contributions by the end of September at the latest to Peter Harvey, 32 Lodge Lane, GRAYS, Essex, RM16 2YP; e-mail: srs@britishspiders.org.uk or grays@peterharvey.freeserve.co.uk. The newsletter depends on your contributions!

Editorial

As always, thank you to the contributors who have provided articles for this issue. **This issue nearly didn't appear for lack of material**, so please, please help future issues by providing articles, short or longer, on interesting discoveries and observations.

We now have 904,113 SRS records in total to date in MapMate. In the last SRS News I provided a table showing numbers of records submitted to the recording scheme for each vice county 2000-on and 2005-on. In fact the numbers provided in the table were of the numbers of records actually in the SRS database and so did not include records submitted, but still awaiting inclusion into the database.

This resulted in my failure to include 10,880 Leicestershire records to the end of 2009 which John Daws had provided over a year earlier, but which still awaited import. Including SRS site habitat information is a quite difficult and time consuming process where it is to be matched and imported as well as basic record information, so I had put this task aside and forgotten these awaited import. I must apologise to Jon, and I have now undertaken the task so that all these records are now in the database.

There are several other large Excel spreadsheets of records provided to the scheme e.g. for Sussex where the same task is still required, and can only urge that recorders use MapMate to record their spiders and regularly submit these results to their Area Organiser, or if the AO does not use MapMate, also directly to me using the MapMate sync system so that after verification and validation these data are immediately incorporated into the SRS database and uploaded to the SRS website, where the results are then available for everyone to see.

Area Organiser plea

John Stanney has been AO for Montgomeryshire and Merionethshire for some time now, but since moving home further away he no longer manages to get over in that direction. John therefore thinks it is time he resigned and we get someone more actively involved in the area. If you are interested in spiders and actively recording them in Montgomeryshire and Merionethshire or can suggest someone who might be able to take on the role, please let me or John know.

Recording 'easily recognisable' spiders

As a result of feedback received from Anthony Brandreth on the SRS website forum, I have now added *Nuctenea umbratica* (the 'Walnut Orb-Weaver Spider') to those species which logged-on users and members of the public can submit to the recording scheme through the website record form.

Users are encouraged to include an image with their record to help confirm identification, and the system enables records to be accepted or rejected before inclusion into the SRS database. All records submitted are mapped on the website, so that recorders can see the results of their efforts.

We have received quite a few records for easily recognised species through this system, often filling in gaps in coverage, and it has proved a valuable provision on the website. There is no doubt we could extend this to include other spiders and some harvestmen, such as *Dicranopalpus ramosus*. Please let me know if you can suggest new species to add and some content for the supporting text and images for these.

Ostearius melanopygius – a cosmopolitan spider

by David Haigh

In November 2011 I received an email from Pete Bradshaw, a Gloucestershire Wildlife Trust Reserves Manager, together with 2 photographs of spiders swarming over a blanket of web.

The site was Snows Farm Nature Reserve, Slad Valley and the photographs were taken on a weed-covered horse manure heap by Mike Komarnyckyj, a Trust volunteer, on November 17th and to whom I am grateful for permission to use his photographs. The inference of this observation is that the spiders had spun the silken web and were preparing to disperse by 'ballooning', i.e. aerial dispersal. In most cases young spiders scatter shortly after hatching and this instinct avoids overcrowding, predation and ensures colonisation of new habitats. Unusually the spiders photographed seem to be adults or sub-adults but may well be about to disperse.

The spiders were *Ostearius melanopygius,* family Linyphiidae, one of the more easily identified 'money-spiders'. The reddish abdomen with a posterior black tip is an obvious diagnostic characteristic. Roberts in his *Spiders of Great Britain and Ireland (*1987) states that *O. melanopygius* has an increasingly widespread distribution in England, Wales and Scotland and occurs in a wide variety of habitats often associated with human activities, e.g. rubbish tips, compost heaps, haystacks, buildings and gardens. This spider has been recorded in Gloucestershire on 12 occasions, 6 from compost heaps, one from a quarry, one from a garden centre and in pitfall traps at

Figures 1 & 2. *Ostearius melanopygius* at Snows Farm Nature Reserve, Slad Valley, Gloucestershire. Photographs © Mike Komarnyckyj

Bromsberrow and Coombe Hill Meadows. W.S. Bristowe in his *Comity of Spiders* Volume 1 (1939) has recorded it from sewage filter beds in Barnsley and goes on to say that it has a world-wide distribution being recorded in New Zealand, Madeira and the Azores and widespread in Europe as far north as Sweden. Dick Jones in *Country Life Guide to Spiders of Great Britain and Northern Europe* (1983) states that this spider is probably the most widely found spider in the world, quoting the Azores, Hawaii, Surrey and as a 'ballooner' on natures reserves in Hampshire and Dorset.

To this cosmopolitan spider our planet would seem to be a 'global village' and it may well be distributed by its own dispersal methods and very probably by human help.

I would welcome further suggestions as to the reason for this behaviour and Gloucestershire records of this spider, indicating site/location, grid reference, habitat and date.

Merrivale, 27 St. Lukes Road, Cheltenham, Glos. GL53 7JF. Email: djrhaigh@hotmail.co.uk

Grab a Grid Reference – a very useful website

Geoff Oxford

Geographical positioning system (GPS) units are commonplace these days, but there are often times when one isn't to hand. This is where the website **Grab a Grid Reference** (http://www.bnhs.co.uk/focuson/grabagridref/html/index.htm) is so handy. Developed by the Bedfordshire Natural History Society, this site comprises two adjacent maps. The left one can be viewed either as a map (not terribly useful) or an aerial photograph while the right shows an Ordnance Survey map of exactly the same area (see the screen grab in Fig. 1). The scale of the maps can be altered independently but then matched with the button under the right-hand map. Both maps have markers but only that on the left-hand side can be moved – the right one moves in concert. The mapping areas shown and the desired output can be chosen from the tick-box menu on the right. Under the right-hand map one can toggle different vice-county outlines, which is extremely useful if you are operating close to a boundary and want to know which VC you were collecting in.

Our own SRS website also shows the grid reference of the map cursor immediately underneath maps. The locate page (http://srs.britishspiders.org.uk/portal.php/p/Locate) provides a 'look-up' for grid references where a location can be searched for by name, grid reference etc, and the grid reference is automatically defined as a grid square at the grid reference resolution on the map. A new facility also enables prior selection of a resolution (10km, 1km, 100m, 10m) and then clicking on the map at a point will define the containing grid reference grid square at that resolution (see Fig. 2).

Department of Biology (Area 14), University of York, Wentworth Way, Heslington, York YO10 5DD

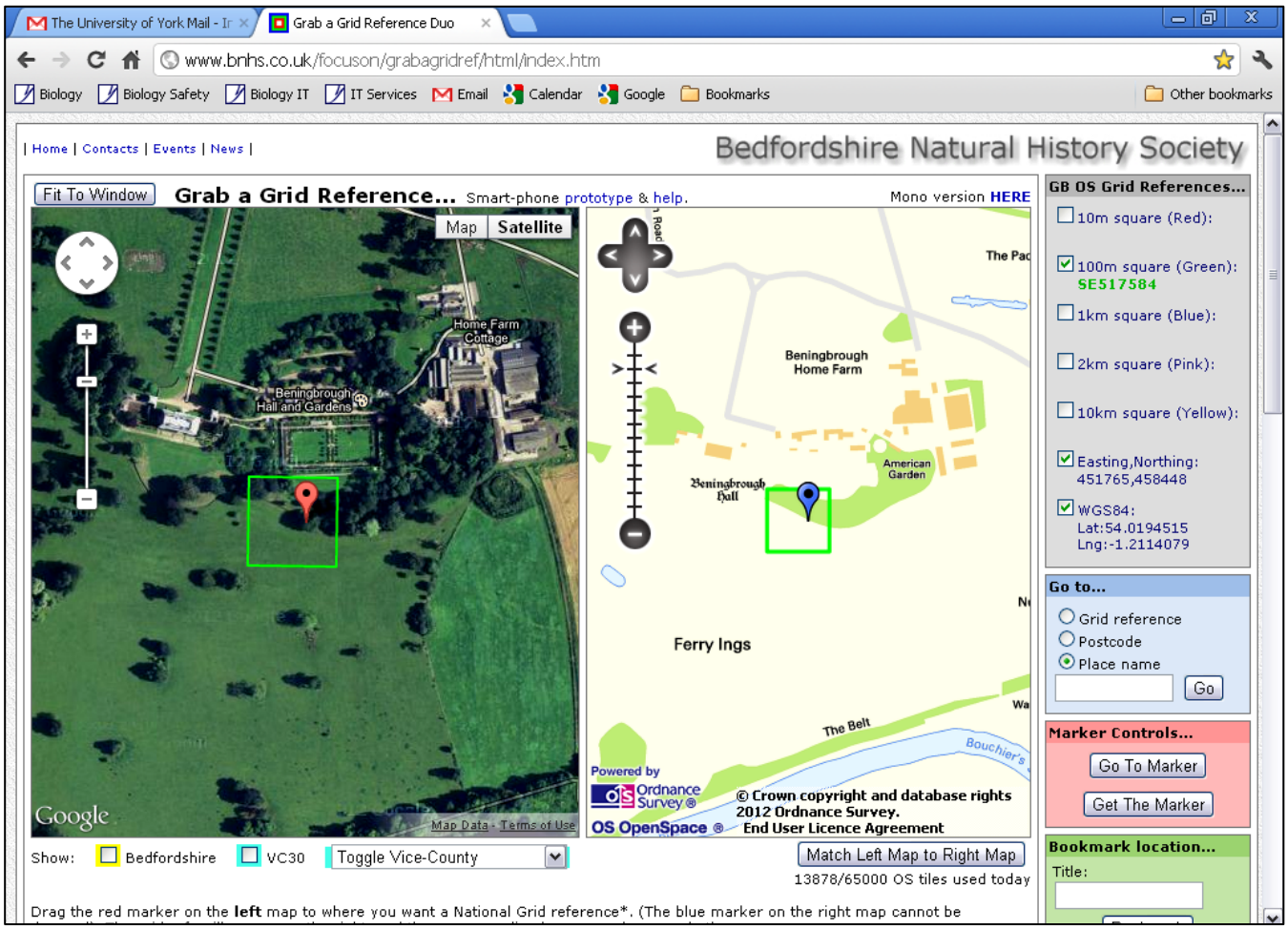


Figure 1. Grab a Grid Reference website (http://www.bnhs.co.uk/focuson/grabagridref/html/index.htm)

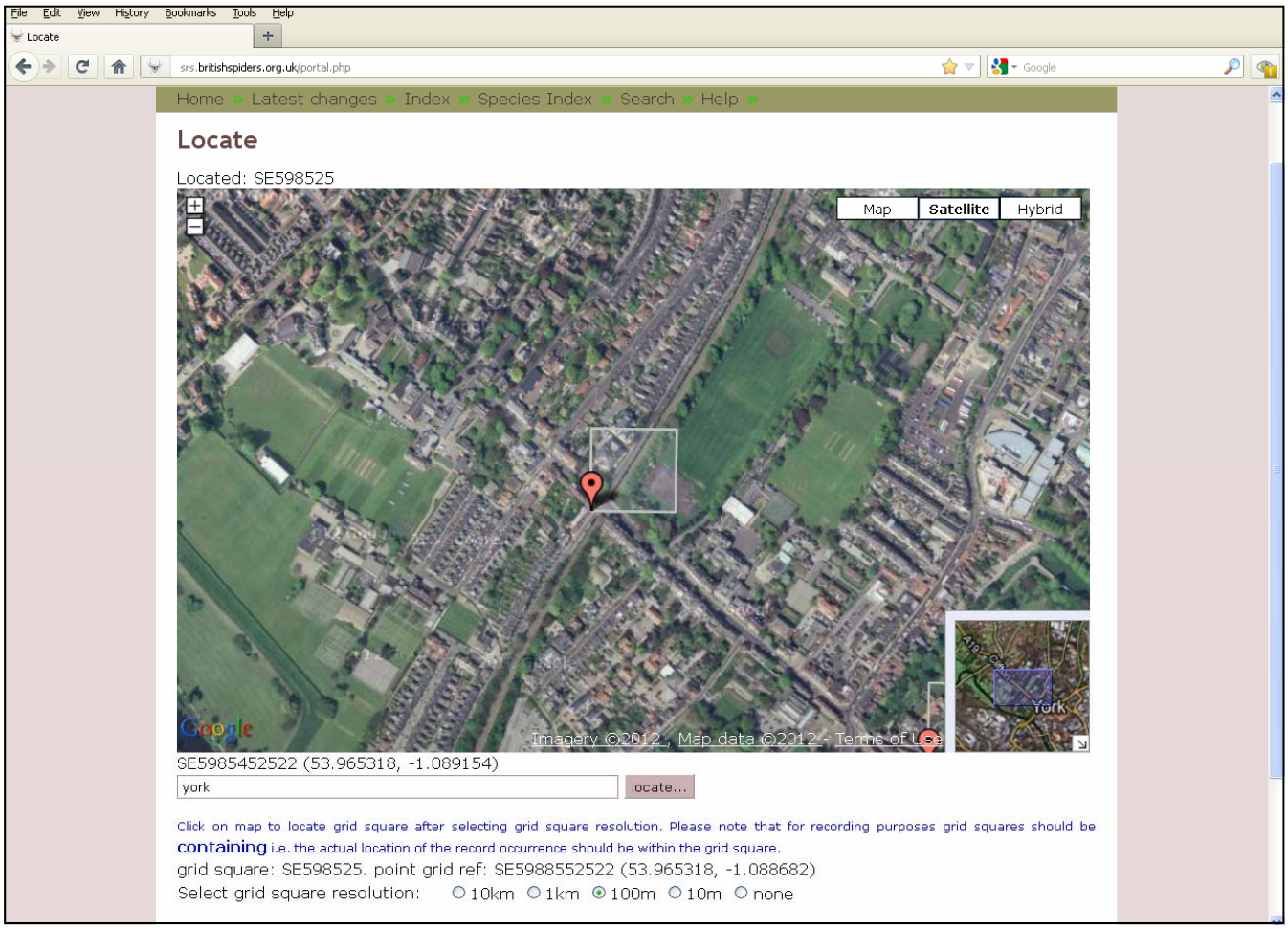


Figure 2. Locate page of SRS website (http://srs.britishspiders.org.uk/portal.php/p/Locate)

Pholcus observation

by Richard Price

I observed *Pholcus phalangioides* in my bath carrying an egg sac. The creature kept falling over as it tried to stand upright and walk so I strategically placed a towel near to it so that it could climb out of the bath. The next day it appeared in the corner of my bedroom ceiling where it stayed for a week. The night before it left I noticed it wrapping the eggs (that had become a looser bundle) more tightly and hanging with its back leg touching the sac. It vanished overnight. I searched the house but couldn't find the spider.

This left me thinking that the way this species moves around its habitat is interesting and could be the subject of an accessible study. Would it have been able to stand and walk in the bath if it had not been carrying the egg sac? Does the spider need to tighten its bundle before moving to each new location? Does it hunt with the egg sac in tow? Why did it relocate? Was it because when the spiderlings hatch out they require a particular humidity, temperature, microclimate? Lots of interesting questions to answer for anyone wanting to take up the challenge?

2 Howard House, Terrace Road, ST LEONARDS ON SEA, East Sussex TN37 6UF

Improving the quality of spider records available via the NBN Gateway

by Peter Harvey, on behalf of the British Arachnological Society and Spider Recording Scheme

Background

Earlier this year the British Arachnological Society was commissioned under a Defra/NBN Trust contract to produce verification rule sets for spiders as part of an ongoing process to improve data provision, management and coordination in the National Biodiversity Network. The report produced as part of the contract is available for download from the NBN's website at http://www.nbn.org.uk/Tools-Resources/Recording-Resources/NBN-Record-Cleaner.aspx, where the NBN Record Cleaner software tool may also be downloaded. This is a new, free software tool to help people improve the quality of their wildlife records and databases.

The report outlines how the verification rules were created and what verification processes should be used - essentially, what to do with records flagged up by Record Cleaner. The tool is designed to help you spot common problems in your data. The goal is to aid the process of data cleaning and ensure the quality of any datasets you pass on to others.

The NBN Record Cleaner tool is designed to access biological records stored in a wide variety of formats such as text files (CSV, tab delimited, etc), Excel spreadsheets and databases - including those in biological recording packages such as *Recorder* and MapMate. The tool first "validates" your data - checking the format against a set of built-in rules. This includes spotting bad dates (e.g. 31st February) or spatial references (e.g. TL123) and checking the spelling of items like species and vice county names. You can correct any problems on screen or change the original source and reload before proceeding.

You then choose the "verification rules" you want to apply (verification is the confirmation or additional proof that something that was believed (such as an identification) is correct. These rules essentially check whether the data are credible and give you warnings about records that are unusual in some way and need further investigation. These checks can include issues such as a record is outside its currently known range, or occurring at a time of the year when it is not expected. You choose which verification rule sets you wish to use and they are downloaded and installed from the internet. The application automatically notifies you about which rule-sets are available, or have been updated.

As well as presenting the records with the potential problems highlighted, the tool also allows you to map your records. This helps you to spot misplaced records.

The tool does not change your original data. It produces reports of the items that were queried, but you must apply any required changes using whatever tools you normally use to manage your data.

Summary

Work to achieve the project objectives was undertaken during the period February – March 2012 by the National Organiser of the SRS, Peter Harvey, with support from the Council of the BAS and a number of Area Organisers of the recording scheme, the Project Team, who helped reaching a consensus on the identification difficulty classification. We are particularly grateful to the following arachnologists who helped in this work, Mike Davidson, Ian Dawson, Francis Farr-Cox, John Harper, Paul Lee, Doug Marriott, Geoff Oxford, Howard Williams, Richard Wilson. The Project Team also enabled a consensus to be reached on details of the specific criteria to be used in the generation of the rule sets. We are grateful to Mike Davidson, Ian Dawson, John Harper and Geoff Oxford for valuable discussion about these rule set criteria and aggregate species.

One of the outputs of the work was a report on the project. This report provides some background on the British Arachnological Society, the Spider Recording Scheme (SRS) and the history of spider recording in Britain. It sets out the objectives of the SRS and the greater emphasis placed on autecology and phenology in Phase 2 (post-provisional atlas). The report also summarises a standardised approach to the essential and desirable data fields for spider records, together with information on handling verification queries and issues surrounding the flow and quality control of data.

Identification of most spiders to species level depends on microscopic examination of critical features in adult specimens. We therefore recommend that all spider records should be subject to verification by SRS Area Organisers and the BAS Verification Panel, as appropriate, prior to uploading to the NBN Gateway or being made available to potential data users via other means.

However the Record Cleaner is a decision support tool, so we have taken a pragmatic approach when creating the rules and asked "would we want records of this species to be flagged up if the identification might be

suspect or the records fall outside the temporal/spatial range?" The rules have been developed to try and ensure that the Record Cleaner does not flag up so many records it will create a burden on the Area Organisers and national experts, but will alert Area Organisers to potentially interesting and important records in their region.

The current framework provided by the SRS scheme collates, verifies, validates and manages high quality reliable spider data. However, any expectation that the scheme should manage larger quantities of data from external sources such as local record centres and other organisations would require staffing and substantial ongoing funding.

The project has developed baseline information for taxon-specific rules to assess the spatial, temporal and identification veracity of spider records using the NBN Record Cleaner data validation software. Taxa have been graded according to inherent difficulty of identification and information derived from existing sources has been used to define currently acceptable geographical distributions, maturity periods and appropriate year ranges. These rules will require regular revision and the methodology for regular updates of these has been developed in the work undertaken for this contract.

Used together, the rules will enable records to be prioritised for scrutiny, which should be undertaken by the appropriate British Arachnological Society specialists in the form of its Verification Panel and the Spider Recording Scheme Area Organisers.

Spider recording in Britain - a background

Spiders have only started to receive the attention they deserve during the past 60 years. The publication of *British Spiders* (Locket & Millidge 1951, 1953; Locket, Millidge & Merrett 1974), and the formation in 1958 of the Flatford Mill Spider Group, which became The British Spider Study Group and subsequently developed into the British Arachnological Society, provided a firm impetus for the study of arachnology in the last half of the twentieth century. The publication of a photographic field guide by Dick Jones (Jones, 1983, 1989), the massively important modern identification work by Michael Roberts (Roberts, 1985, 1987) and the Collins field guide (Roberts, 1995) provided arachnologists with additional tools to identify reliably most species of spider to be found in Britain. Spiders have increasingly been found to be useful in assessing the quality of sites for nature conservation, and with the dependence of many species on structural aspects of a habitat for web building and predation, they are frequently useful in informing the management of sites for a wider range of flora and fauna.

The gathering of records on spiders has been a core activity of the British Arachnological Society since April 1987, when a revised Spider Recording Scheme (SRS) was launched in collaboration with the Biological Records Centre. Following the county lists provided by Bristowe (1939, 1941) in the *Comity of Spiders*, Dr Peter Merrett initiated the mapping of the distribution of British spiders on an administrative county basis in Locket, Millidge & Merrett (1974) and has periodically published New County Record updates in the British Arachnological Society's Bulletin. However, it was the formation of the SRS in 1987 and the remarkable enthusiasm and energy of the late Clifford Smith that was instrumental in encouraging the active support of arachnologists and increasing the numbers of recorders. This replaced a scheme that was started in 1964 but which had fallen into abeyance.

In the first fourteen years of recording (1987-2000), over 1500 volunteers contributed more than 517,000 records. Overall coverage of Britain is good, although not surprisingly it is patchy in some areas with a number of counties intensively recorded, whilst other areas remain more poorly covered. In 2002, at the end of phase one of the scheme, the *Provisional Atlas of Spiders of Britain* was published, based on data recorded and submitted to the scheme to the end of 2000 (Harvey, Nellist & Telfer, 2002). This provides a very great amount of new information on every British species. The 647 species accounts were written by volunteer authors, without which the text could not have been produced in the timescale available.

Sensitive data

Data provision involves the copyrights of recorders and compilers of various local and national datasets, as well as the legislation and regulations dealing with Freedom of Information, Environmental Information Regulations and Data Protection. Following consultation with volunteer arachnologists and Area Organisers, the BAS provides public access to records limited to the hectad square resolution, or as mapped dots on tetrad distribution maps. Access to records at capture resolution is available only in specific circumstances and never for commercial purposes, for which these data should be sought through local record centres and local county recorders.

Spiders that should be considered "sensitive" in the context of data sharing were reviewed and the conclusion is that access to location data is unlikely to pose any threat to the conservation of spiders with the exception of one species. This sensitive species is *Eresus sandaliatus*, a spider fully protected under Schedule 5 of the Wildlife & Countryside Act, 1981, and where it is possible that there might be interest in the illegal collecting and sale of specimens. Unauthorised access to the locations of this species at its original locality and more recent translocation sites might also cause damage to their habitats, affecting the small and vulnerable population/s present. Details of these records should not be released if they could lead to the identification of colony locations at finer than hectad grid square resolution.

Aggregate taxa

Consideration was given to the existence of aggregate taxa records, and it is recognised that there is currently some inconsistency in the way in which these are treated by the Spider Recording Scheme. The need to define and publish consistent definitions for these recording aggregates has been identified.

Rule sets

Four separate rules have been developed and specified for each of *c.* 667 taxa in the Araneae as part of this work: identification difficulty, geographical range, maturity (adult season, identifiable season) period and year range. The Project Team have helped to provide a consensus on

Figure 1. On-line identification difficulty form which allowed the project team to provide their specialist expert input to the classification system used in the generation of the rule set.

1. Can be identified at sight in the field by anyone with a bit of experience. Species with which the beginner rapidly becomes familiar. Usually identifiable from a photo. Records acceptable from most sources.
2. Can be identified in the field with care and experience. Needs a good view or examination with a good quality lens. Beginners should take voucher specimens until they gain familiarity and experience. May be identifiable from a good photo. Records acceptable from competent recorders.
3. Adult voucher specimen needs checking under magnification and good lighting. The Recording Scheme would accept records from experienced recorders without further question unless the date, region or habitat was especially unusual. Voucher specimen should be retained. Records accepted from known experienced recorders
4. The Recording Scheme would require confirmation in the majority of cases, e.g. specimen having been checked by the appropriate Area Organiser or an acknowledged expert.
5. Voucher specimen of adult required (unless protected by law) to be examined by national expert. Even the most expert of recorders should seek a second opinion or the species is so rare that we would want confirmation by a national expert even if relatively easy to recognise. We should also recognise that other European species may become part of the British fauna, so would id confirmation be needed to recognise new species?

Most species will require a rating of 3 or 4, few will be accorded a rating of 1 or 2, some 5. If you don't feel able to complete all taxa, just leave these blank. You can save and return to the form at any time. Notes are optional and will rarely be necessary, but if you feel they might help, please provide them.

Select entry method: ◉ **Save all entries at bottom of form** ○ **Single entry**

Agelenidae	Agelena labyrinthica	○1	◉2	○3	○4	○5	Add/edit id note
Agelenidae	Tegenaria agrestis	○1	○2	◉3	○4	○5	Add/edit id note
Agelenidae	Tegenaria atrica	○1	○2	○3	○4	◉5	Add/edit id note
Agelenidae	Tegenaria domestica	○1	○2	◉3	○4	○5	Add/edit id note
Agelenidae	Tegenaria ferruginea	○1	○2	○3	○4	◉5	Add/edit id note
Agelenidae	Tegenaria gigantea	○1	○2	◉3	○4	○5	Add/edit id note
Agelenidae	Tegenaria parietina	○1	○2	◉3	○4	○5	Add/edit id note
Agelenidae	Tegenaria picta	○1	○2	○3	○4	◉5	Add/edit id note
Agelenidae	Tegenaria ramblae	○1	○2	○3	○4	◉5	Add/edit id note
Agelenidae	Tegenaria saeva	○1	○2	◉3	○4	○5	Add/edit id note
Agelenidae	Tegenaria silvestris	○1	○2	◉3	○4	○5	Add/edit id note
Agelenidae	Textrix denticulata	○1	○2	◉3	○4	○5	Add/edit id note
Amaurobiidae	Amaurobius fenestralis	○1	○2	◉3	○4	○5	Add/edit id note
Amaurobiidae	Amaurobius ferox	○1	○2	◉3	○4	○5	Add/edit id note
Amaurobiidae	Amaurobius similis	○1	○2	◉3	○4	○5	Add/edit id note
Amaurobiidae	Coelotes atropos	○1	○2	◉3	○4	○5	Add/edit id note

the criteria used to develop these rule sets and to accord an identification difficulty rating to each species.

1/. identification difficulty

British spiders were classified for identification difficulty into five categories (grades). Categories were defined according to the difficulty of species identification combined with the necessary level of the recorder's expertise and need for additional evidence to substantiate a record. The classification was agreed by the Project Team who reviewed a draft of the category definitions and criteria to be used. These classifications were then used in an on-line form (see Fig. 1) which the Project Team could use to submit their difficulty ratings. The form allowed the Team to also submit notes on specific identification difficulties if they felt this relevant. Both the identification difficulty values and identification notes were submitted into a database and a consensus from these used to inform the rule set.

The classification produced applies at the British Isles level (i.e. England, Northern Ireland, Scotland and Wales) and can also include the Isle of Man, but does not include the Channel Islands or Ireland. The identification grades recognise that other European species may become part of the British fauna, so whether identification confirmation would be needed to recognise new species has also been considered.

The classification of each species was based purely on identification difficulty or where extreme rarity indicated that specialist confirmation of a record was necessary, not on likelihood of occurrence in a particular place or time of year. However location, habitat, time of year and other factors also play important parts in the correct identification of species. The British Arachnological Society and Spider Recording Scheme therefore strongly

recommend that the identification difficulty classification is used in conjunction with rules addressing spatial and temporal occurrence for the purposes of verification of spider records (as in the case of the data validation software being developed by NBN).

Spiders were classified into the following five grades according to identification difficulty. **In all cases, it is assumed that the spider being identified is in good condition and that the recorder has the basic level of competence needed for the identification of this taxonomic group** (i.e. use of low power microscope with good lighting, ability to use keys, ability to critically use genitalia figures in spider identification works, to use comparative identification criteria, and to recognise when a second or specialist opinion is necessary). These are important as almost no spider taxa can be identified with complete reliability by members of the public with no training, experience or access to specialist materials to aid identification (e.g. field guides, specialised identification works, low power microscope, good lighting and examination of voucher specimens etc).

Even where spiders are distinctive and can be reliably identified in the field or from photographs, a look at the internet will confirm that such species are not always correctly identified. Generally in our experience it is people who have a good grounding in lab ID who are best at field identification, but it is usually necessary for identifications to be confirmed with a voucher specimen.

There are some species pairs such as *Araniella cucurbitina/opisthographa, Meta menardi/bourneti* and *Oonops pulcher/domesticus* where people are liable to jump to a conclusion based on habitat and commonness/ distribution. Again, critical examination of adult voucher material is the only way to avoid these difficulties.

Grade 1: Can be identified at sight in the field by anyone with a bit of experience. Species with which the beginner rapidly becomes familiar. Usually identifiable from a photo. Records acceptable from most sources.

Grade 2: Can be identified in the field with care and experience. Needs a good view or examination with a good quality lens. Beginners should take voucher specimens until they gain familiarity and experience. May be identifiable from a good photo. Records acceptable from competent recorders.

Grade 3: Adult voucher specimen needs checking under magnification and good lighting. The Recording Scheme would accept records from experienced recorders without further question unless the date, region or habitat was especially unusual. Voucher specimen should be retained. Records accepted from known experienced recorders.

Grade 4: The Recording Scheme would require confirmation in the majority of cases, e.g. specimen having been checked by the appropriate Area Organiser or an acknowledged expert.

Grade 5: Voucher specimen of adult required (unless protected by law) to be examined by national expert. Even the most expert of recorders should seek a second opinion or the species is so rare that confirmation by a national expert is needed even if it is relatively easy to recognise.

These identification difficulty ratings are now provided on the species Summary pages on the SRS website.

2/. Spatial distribution rule set - geographical ranges of spiders

Baseline distributions were defined from existing records in the Spider Recording Scheme database. This source represents an accurate modern assessment of the true distribution of each taxon, although some species and geographical areas are under-recorded. Thus it will be important to revise the baseline distribution rules over time as more records are gathered from currently un-recorded or under-recorded areas.

A large number of spider taxa can present difficulty for a non-specialist or inexperienced arachnologist to identify reliably, and even common or widespread species can be amongst these. In order for our aims to build up a reliable ecological profile of every British spider and to understand how this varies across latitude and longitude in the country, we need reliable identifications of all species. A number of the indications available which might suggest the need for verification include the broad and structural habitat in which a species is found, the date, gender and stage to name just a few. This means that simply relying on recorded hectads for the distribution rule definition is probably too crude a methodology both in terms of the potential workload it places on specialists such as Area Organisers and its value in ensuring accurate data are recorded.

Baseline acceptable geographical distributions for each taxon were defined and provided to the NBN in text file format to be used in the NBN's validation software using the specification discussed and provided below. Records falling outside of the defined distribution will be flagged for further verification.

Cut-off year for modern records

The year **1980** was chosen as the starting point for the modern distributions because recording and coverage have been particularly good after this date, with intensive recording associated with the Recording Scheme starting in 1987 and a few years prior to this, and with the availability of modern reference works which opened up identification to a much wider audience also occurring at about this time. There was also intensive sampling in the 1970s and 1980s in some areas, for example Yorkshire and in the southern heathlands, which has not been repeated. It is assumed that there has been no decline in the distributions of particular species over the last 30 years and thus the occurrence of many of the species recorded at that time is still likely in the same locations. Other rule sets used by the NBN validation software should appropriately highlight records which need further verification.

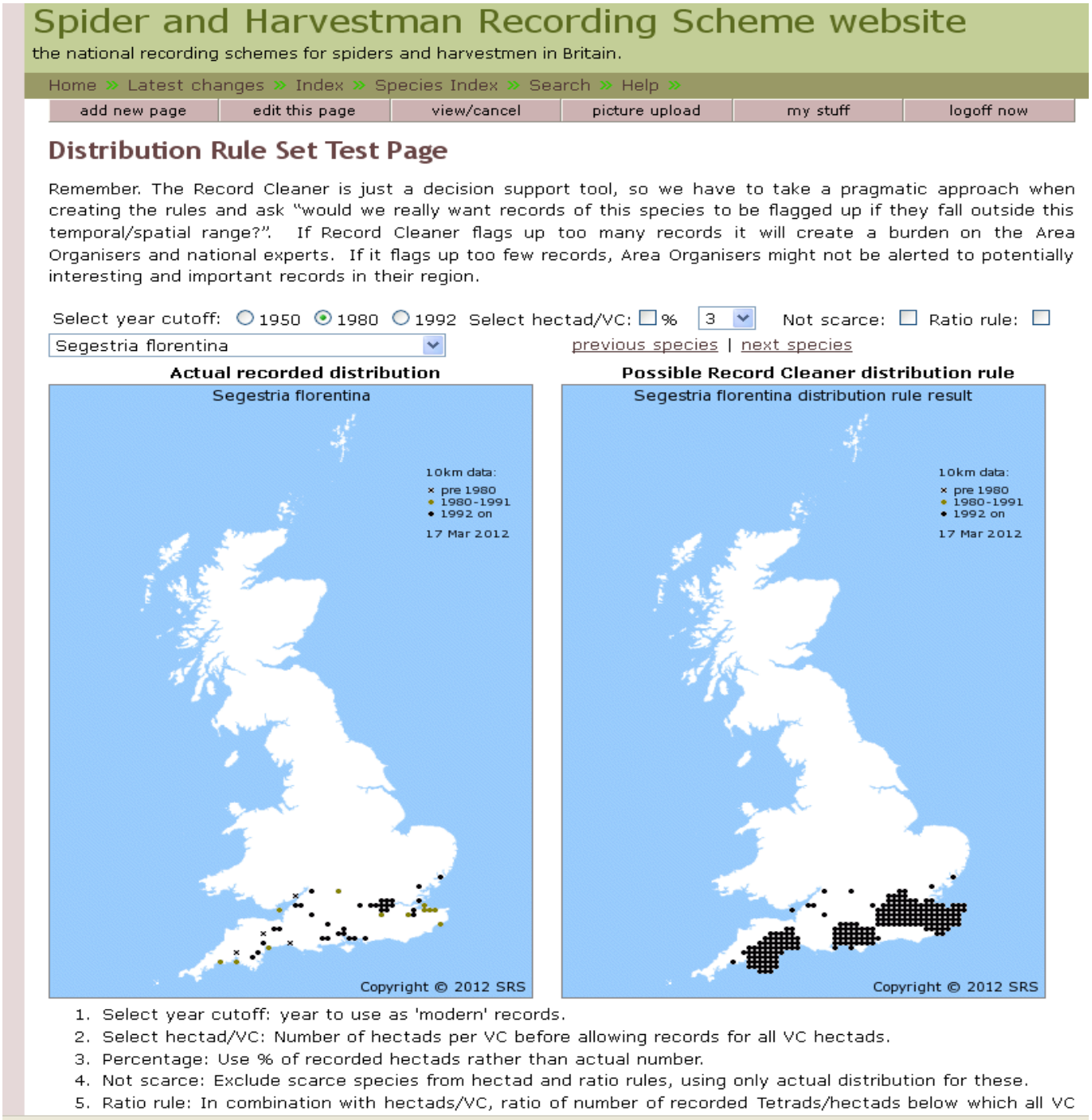
Vice Counties (VCs)

The distribution rule set files firstly list the VCs from which a taxon has been recorded 1980-on, so that any record for a spider new to a VC will be highlighted for further validation.

Defining hectad distribution for the rule set

Various options about how to define the distributions used in the rule set were considered. The simplest would rely on a list of those grid squares for which there were records of a species since a chosen cut off year. With this definition any records from 'new' 10km grid squares will

Figure 2. On-line form to enable testing of the affect of applying different criteria to a distribution rule. This was used to help come to a consensus view of the best criteria to use for the rule set.



be highlighted, those from already occupied grid squares will not. However this would apply to all species regardless of their status as common or rare, resulting in all new hectad records being highlighted and requiring further verification input, principally from the SRS Area Organisers and BAS Verification Panel, who undertake their work on an entirely voluntary basis and with very limited time resources available.

Scarce species

It was decided to treat scarce species separately from more common and widespread species, principally to avoid undue demands on our voluntary system of Area Organisers and Verification Panel in providing specialist follow up on records highlighted by the Record Cleaner.

Where a species is scarce or rare (as defined in a new national status review due to be published) any new hectad record is highlighted for further validation checks and verification as necessary. For the more widespread and common species all hectads in a vice county are included in the allowable distribution unless they fall into the criterion below as a species rare in the vice county. This will mean that common and widespread spiders will not be highlighted by the Record Cleaner even where they occur in new hectads, unless this represents a new hectad in a vice county with very few recorded hectads for that species.

Hectads per VC

Therefore a decision has been made to apply the rule differently to records of species rare in a vice county, which an Area Organiser would certainly feel needed verification if they were recorded by an inexperienced specialist, non-specialist or a recorder with unknown identification skills. The number of hectads where a cut off is chosen might vary from one vice county to another depending on a number of factors, including how well recorded the vice county is and its size, but a range of options were considered here, from where a species had only 3, 5, 10, 15, 20 recorded hectads beyond the cut off year, or a percentage of hectads in a vice county rather than actual hectad numbers. The number chosen has been selected to highlight records which would be from a new hectad for a vice county where there are existing records in a vice county from **3% or less** of the total number of vice county hectads. If the number of hectad records for a species is above 3% of the vice county total, then all hectads in the vice county are allowed. This allows common and widespread species to be included without their highlighting by the NBN Record Cleaner.

Tetrads/hectad Frequency Ratio

Species may occur in a very restricted number of hectads yet be quite common and widespread within these areas, with high numbers of tetrads occupied. Species occurring in a small number of hectads but with low numbers of occupied tetrads indicate a scattered, possibly even widespread, distribution but with isolated sites and populations. These are the more vulnerable species that require the greatest nature conservation effort (Pearman, 1997). Even the more widespread species which occur in many more hectads but with very low tetrad numbers could be under much greater threat of decline through loss or degradation of habitat than may be apparent from a hectad or tetrad distribution map. Pearman used the numbers of tetrad and hectad records for a species to calculate a Frequency Ratio of tetrads/hectad. A very low Frequency Ratio may indicate that a species should be of nature conservation concern even though the hectad distribution may suggest a widespread and common species. Our rule set uses a Frequency Ratio of less than 1.5 to highlight records which may be of higher nature conservation significance and therefore may need to be brought to the attention of Area Organisers.

New species

There is an issue about species that have not yet been recorded in the UK. Clearly these have not been included in the development of the geographical baselines for validation rules and, thus, the software will not flag up records of new species. This is unfortunate as species 'new to the UK' are a regular occurrence for spiders and such records should be picked out for detailed verification. Over twenty new spider species have been recorded in Britain for the first time since 2000 and have now either colonised the country or were species previously present but unrecorded. Some of these are now being recorded regularly across a wide area of Britain. In this situation, it is important to revise the geographical baseline distributions regularly so as to include new species recorded in the UK.

3/. Temporal rule set - seasonal range of spiders

Temporal rules for the adult life-cycle stage of each taxon were developed. These were in the form of a start date and end date for each species, between which records of reliably identifiable spiders could reasonably be regarded as normal occurrences for verification purposes. For the vast majority of spiders this range is for adults only, but a very few spiders can also be identified as juveniles and have been included in the seasonal range given for all stages. An adult seasonal range is also provided, covering the main months of the adult period(s) of each spider species in the year, including periods when adult spiders may be over-wintering. Adult males and females often have substantially different adult periods, with males often found for much shorter periods than females, which lay eggs and often guard the eggsacs and even care for the young spiderlings. A seasonal range is therefore provided separately for adult males and adult females.

All these ranges have been derived from the date data held in the SRS database, but to ensure spiders recorded outside their normal expected adult season are highlighted by the Record Cleaner as requiring further checking the rules are based on dates for months where the numbers of records are 5% or more of the total records for that species stage. We have used months rather than weeks because we know phenologies in Britain vary by latitude and longitude and so weeks are likely to be too fine a division to use. We believe this is a reasonable compromise between the need for further verification checks and recorded dates being accepted by Record Cleaner. It should also be recognised that there is undoubtedly a phenological shift in seasonal range in Britain affected by latitude and longitude, and the rules have therefore had to encompass this countrywide variation, as well as normal variation from one season to the next.

Undoubtedly a few individuals will still occur outside the temporal rules that we have defined, but these would be worthy of further verification checks.

To take account of very rare species where there are very few records, if the first and last dates in the records in the database are less than 31 days, we have set the range to include the whole month or 15 days before or after earliest and latest record, whichever is greatest. This is to ensure that Record Cleaner does not highlight every date outside our present data knowledge base, but instead uses a range we know to be applicable to other adult spiders.

As with the other verification rules, it will be important to update the seasonal range period information over time due to ongoing phenological shifts driven by climate change and to take account of additional data as they become available.

4/. Temporal rule set - year ranges for spiders

Temporal rules were also defined to cover the acceptable year range for records of each taxon. The default start year was the first year recorded in the SRS database and default end year was not specified (to signify the present year). Spider recording in Britain was not properly established until the work of Pickard-Cambridge and other Victorian naturalists. Taxa that were first discovered in Britain or have colonised since that period are given a start year in accordance to the first record in the database. This is normally the year of the discovery/colonisation event. Similarly, taxa that have become extinct in the UK or have not been recorded at all in the country for many

years were given an end year to their acceptable year range. This was chosen to be 10 years, so that potentially important records of species recorded either before the first recorded occurrence or after the last known occurrence will be highlighted by the NBN validation software. It does not necessarily mean that these species are actually considered extinct in Britain.

As with each of the sets of rules, the year range temporal rule will become outdated over time as new species are recorded in the UK for the first time or species are not recorded for a long period.

Processes for verifying records

Dealing with records that fall outside the verification rules

The SRS operated by the BAS uses its system of Area Organisers, the National Organiser, a Verification Panel and ultimately a national authority as the means to ensure records are verified and acceptable to the scheme. The final decision about the acceptance or otherwise of a record rests with the National Organiser and the BAS Verification Panel. Thus, the process for dealing with records that fall outside of the verification rules defined by this contract and used in the NBN validation software is to refer to the local Area Organiser or National Organiser, who may then enlist the help of others in the Verification Panel as appropriate. If spiders are to be sent to any of these people for verification, then postage costs must be covered.

Contact details for Area Organisers are subject to change. Up-to-date details are available on-line to registered logged-on members of the BAS and SRS on the SRS website at http://srs.britishspiders.org.uk, but can also be gained by contacting the National Organiser at srs@britishspiders.org.uk.

At the local 'county' level, the Area Organiser/County Recorder may have additional specific procedures in place for dealing with verification issues. In addition, many Area Organisers/County Recorders will refer difficult records on to acknowledged national experts in an informal way.

It is recommended that brief information about the outcome of a verification decision is recorded where the original details of the record are amended. This can be done using the comment field of the record.

In the SRS it is normal practice for all records accepted by the scheme to be considered correct. Records requiring confirmation or regarded as incorrect are not normally accepted or are removed from the dataset. On some occasions a record may be retained, but 'archived' so that it is not transferred to other users.

Dealing with records highlighted by Record Cleaner

The classification that has been proposed by the NBN previously is considered to be a sensible and reasonable approach for use with spider records, namely:

- Correct
- Considered correct
- Requires confirmation
- Considered incorrect
- Incorrect
- Unchecked

The BAS and SRS recommend that all spider records should be subject to verification by SRS Area Organisers, National Organiser and the BAS Verification Panel, as appropriate, prior to uploading to the NBN Gateway or being made available to potential data users via other means. Records which pass the Record Cleaner rule set tests should be submitted to the local Area Organiser, who may then recommend further verification based on local knowledge.

1. Records where a voucher specimen or sufficient other evidence has been identified or confirmed by an experienced arachnologist and where the identification difficulty grade does not indicate that this should be confirmed by the appropriate Area Organiser, National Organiser, BAS Verification Panel or a national authority may be accepted as **correct** and should be submitted to the SRS.
2. Records highlighted by the Record Cleaner should be subject to appraisal by the appropriate arachnologists, in the first instance the local Area Organiser, then the National Organiser, BAS Verification Panel or a national authority (the Verification Process) as appropriate. Records which pass this further test can be **considered correct** and should be provided to the Spider Recording Scheme. If voucher specimens are then confirmed or other evidence has been approved as sufficient by the Verification Process then these can be changed to **correct**.
3. Records **considered incorrect** will be those where a record is either considered unlikely and there is insufficient evidence to confirm the identification, or no voucher specimen has been confirmed by the Verification Process. These records should **not** be submitted to SRS or uploaded to the NBN Gateway.
4. Records which are **incorrect** will be those where an identification has been shown to be incorrect by examination of a voucher specimen or other evidence in the Verification Process. Only the corrected record should ever be submitted to Spider Recording Scheme, with the verification decision recorded in the comment field, or uploaded to the NBN Gateway.

Developing further rule sets

We have a SRS database with over 900,000 Araneae records with distributional data and a considerable amount of phenological and autecological information for Britain. These data are co-ordinated and fed into our centralised database by our system of specialist Area Organisers who, together with a Verification Panel of national experts and the National Organiser, ensure the quality of data is extremely high. AncillarySpecies rule sets which specify a list of species that are expected to be found, e.g. in a habitat, could be developed for spiders.

We would see high value in changes being made to the Distribution rule set so that it can include different specific criteria for different species or groups of species e.g. where similar species overlap e.g. *Tegenaria saeva* & *T. gigantea*, to flag up possible confusion, and to be able to apply specific text to specific taxa.

The majority of spiders require microscopical examination of the adult genitalia for reliable identification to species, and even then there are groups of species which present a challenge to experienced arachnologists. It is not uncommon for the different sexes to present different levels of identification difficulty, and it would be desirable for the rule set to accommodate this.

References

Bristowe, W. S. 1939. *The Comity of Spiders*, *I*. Ray Society.

Bristowe, W.S. 1941. *The Comity of Spiders, 2*. Ray Society.

Harvey, P.R., Nellist, D.R. & Telfer, M.G. (eds) 2002. Provisional atlas of British spiders (Arachnida, Araneae), Volumes 1 & 2. Huntingdon: Biological Records Centre.

Jones, D. 1983. *The Country Life Guide to Spiders of Britain and Northern Europe*. Feltham: Country Life Books.

Jones, D. 1989. *A guide to spiders of Britain and Northern Europe*. London: Hamlyn.

Locket, G.H. & Millidge, A.F. 1951. *British Spiders*, Volume I. London: Ray Society.

Locket, G.H. & Millidge, A.F. 1953. *British Spiders*. Volume II. London: Ray Society.

Locket, G.H., Millidge, A.F. & Merrett, P. 1974. *British Spiders* Volume III. London: Ray Society.

Merrett, P. & Murphy, J.A. 2000. A revised check list of British spiders. *Bull. Br. arachnol. Soc*. **11** (9): 345-358.

Pearman, D. 1997. Presidential Address, 1996. Towards a new definition of rare and scarce plants. *Watsonia* **21**: 225-245.

Roberts, M.J. 1985. *The Spiders of Great Britain and Ireland*. Vols. 1 & 3. Colchester: Harley Books.

Roberts, M.J. 1987. *The Spiders of Great Britain and Ireland*. Vol. 2. Colchester: Harley Books.

Roberts, M.J. 1995. *Spiders of Britain & Northern Europe*. London: HarperCollins.

Corrections to published historical spider records

by Ian Dawson

Assessing old spider records is fraught with difficulty and uncertainty, given that in most cases no specimens now exist for checking, though since most important historical records come from a few well-known arachnologists we should accept these on trust unless there is evidence that an error has been made. I draw attention to two examples from Wicken Fen, Cambridgeshire, where such evidence exists.

Wicken Fen is an important site with good historical spider data. The key early collectors at Wicken according to Bristowe (1928, 1938) were W. Farren in 1869, F.O. Pickard-Cambridge in 1889, C. Warburton in 1892, W. Falconer in 1912, 1913 and 1919, A.R. Jackson in 1912 and Bristowe himself between 1920 and 1934.

Marpissa nivoyi

The record of this species at Wicken keeps reappearing in the literature (e.g. Friday & Harley 2000) despite the error of its original inclusion having been corrected in print more than once. It also appears in the Provisional Atlas (Harvey, Nellist & Telfer 2002), is mapped on the Spider Recording Scheme website <srs.britishspiders.org.uk/portal.php/p/Summary/s/Marpissa+nivoyi>, and is included in the National Trust biological records dataset for the site. The record was first published by O. Pickard Cambridge in his *Spiders of Dorset*, part 2 (1881), but he himself corrected the misattribution in *Proceedings of the Dorset Natural History and Antiquarian Field Club* in 1889 and 1893, such that Warburton did not include the record in his account of spiders in Cambridgeshire published in 1904.

However, Bristowe included the species in his initial contribution to the fauna and flora of Wicken Fen, published in 1925, but in his Cambridgeshire spider list of 1928wrote "I suspect the Wicken record is a mistake". In his subsequent list of Cambridgeshire spiders in the *Victoria County History*(1938) Bristowe provides the supporting evidence that an error has been made: "It is necessary to expunge *Hyctia nivoyi* from the Wicken list. The suspicion that this species had been recorded in error has been confirmed by the discovery of corrections by the original authority", with the footnote "Corrected to *Salticus promptus* Bl. (O. P. Cambridge, Proc. Dorset N H and Antiq. F. C. 1889). *S. promptus* Bl. established as a synonym of *Marpessa pomatia* Walck. [=*Marpissa radiata*] (ibid. 1893)." In the systematic list, under *Marpessa pomatia* Walck. [=*Marpissa radiata*] Bristowe clarifies: "Early records of *Hyctia nivoyi* which have been followed in recent lists refer to this species".

The Comity of Spiders, vol. 2, also by Bristowe, published three years later in 1941, includes a 'Synonymic Index of British Spiders'. The entry on p. 523 under *nivoyi, Hyctia* has the comment "records from Cambridge Fens = **Marpissa pomatia**" [=M. radiata]. Indeed in vol 1, published in 1939, Bristowe himself presciently notes that "faulty identifications there must be and authors' subsequent corrections are easily overlooked."!

This error has also previously been pointed out by David Nellist (2001): "At the Biological Records Centre, I have been able to examine that part of the database which lists Wicken Fen records up to the late 1970s. Some of these records, extracted from the literature and transferred to S.R.S. recording cards by the late Clifford Smith, date back to the middle 1920s. … Records for *Marpissa nivoyi* (1925), due to W. S. Bristowe, were extracted by Clifford Smith from early literature. .... I do believe that the record for *Marpissa nivoyi* in the S.R.S. database is an error. In the Arachnida section of the Victoria County History of the County of Cambridgeshire, published in 1938, Bristowe noted that the early records of *Hictya nivoyi* actually referred to *Marpissa pomatia* (= *Marpissa radiata*) and not to *Marpissa nivoyi* and it was not, rightly, included in Eric Duffey's 1970 list."

It would appear that Clifford Smith did not extract spider records from Bristowe's account in the Victoria County History (1938) and therefore did not see the correction from *Marpissa nivoyi* to *M. radiata*. This is borne out by the absence from the Spider Recording Scheme dataset of a number of additional Cambridgeshire records published by Bristowe in this later account (records which I have now added).

To summarise, the record as *nivoyi* was first published by Pickard Cambridge in 1881, and republished by Bristowe in 1925, from which source it was added to the Spider Recording Scheme dataset by Clifford Smith. The error was corrected to *Marpissa pomatia* (now known to be *M. radiata*) by Pickard Cambridge in 1889, questioned by Bristowe in 1928, and fully corrected by him in 1938 and 1941, and again by Nellist in 2001. The correction was known to Warburton in 1904 and Duffey in 1970, but not specifically mentioned by them when they published their checklists of spiders of Cambridgeshire and Wicken Fen respectively, both of which omitted *M. nivoyi*.

Episinus truncatus

Nellist (2001) writes: "Records for *Episinus truncatus* (1925 and 1928), due to W. S. Bristowe, were extracted by Clifford Smith from early literature. *Episinus truncatus* appears to be another new record for VC 29, and it is curious that this species did not appear on the list in Eric Duffey's Spiders of Wicken Fen. Maybe it was overlooked, or possibly the identification was regarded as unreliable".

However, until the early 20th century what we now call *E. angulatus* was known as *E. truncatus* (and *E. truncatus* as *E. lugubris*). Although Bristowe lists only *E. truncatus* for Cambridgeshire in his 1925 Wicken list and his 1928 and 1938 Cambridgeshire lists, in the chapter on British Spiders and their Distribution in his *Comity of Spiders*, vol. 1 (1939) he includes Cambs in the distribution of *E. angulatus*, but not that of *E. truncatus*, so I believe he realised the error. Indeed a footnote explains: "Until 1906 the two species of *Episinus* were confused. O P-Cambridge's *E. lugubris* = *E. truncatus* and his *E. truncatus* = *E. angulatus*, thereby adding to the confusion". Bristowe uses italics in the Comity where the county record may refer to either species: significantly, the record for Cambs under *angulatus* is not given in italics, indicating no doubt on Bristowe's part.

Although the first published record for Wicken specifically under the name *Episinus angulatus* does not appear until 1960 by A.M. Wild, given the lack of suitable heathland habitat it seems certain that all *Episinus* records from Wicken in fact refer to *angulatus*, the earlier records of '*truncatus*' merely using the name under which *angulatus* was known at the time. This was clearly recognised by Duffey in his inclusion of *E. angulatus* alone in his 1970 checklist of the spiders of Wicken Fen.

References

Bristowe, W.S. (1925) The spiders and harvestmen of Wicken Fen. *In* Gardiner, J.S., ed. *The natural history of Wicken Fen.* Bowes & Bowes, Cambridge

Bristowe, W.S. (1928) *The Spiders of Cambridgeshire*. Fauna List no. 2. Cambridge Natural History Society

Bristowe, W.S. (1938) Arachnida, pp. 206-212. *In* Imms, A.D., ed. *The Zoology of Cambridgeshire*. Victoria County History of Cambridgeshire and the Isle of Ely, vol. 1.

Bristowe, W.S. (1939) *The Comity of spiders*, vol. 1. Ray Society, London.

Bristowe, W.S. (1941) *The Comity of spiders*, vol. 2. Ray Society, London.

Duffey, E. (1970) *The spiders of Wicken Fen*. Guides to Wicken Fen no. 7. National Trust.

Friday, L. & Harley, B. (2000) *Checklist of the flora and fauna of Wicken Fen*. Harley.

Harvey, P.R., Nellist, D.R.& Telfer, M.G, eds. (2002) *Provisional atlas of British spiders (Arachnida, Araneae)*. Biological Records Centre

Pickard-Cambridge, O. (1881) *The spiders of Dorset*, vol. 2. Louis Henry Ruegg, Sherborne, for the Dorset Natural History and Antiquarian Field Club.

Nellist, D.R. (2000) The National Trust's 100th Anniversary Field Meeting at Wicken Fen, 12th-13th June 1999. *BAS Newsletter* no. 88.

Nellist, D.R. (2001) Further Additions to the Check List for Wicken Fen. *BAS Newsletter* no. 91.

Spider and Harvestman Recording Scheme website. srs.britishspiders.org.uk [accessed 29 June 2012]

Warburton, C. (1904) The Arachnida of Cambridgeshire IN Marr, J.E. & Shipley, A.E., eds. *Handbook to the natural history of Cambridgeshire*. Cambridge University Press.

Wild, A.M. (1960) Wicken. *Flatford Mill Spider Group Bulletin* 8: 1-3.

100 Hayling Avenue, Little Paxton, ST NEOTS, Cambridgeshire PE19 6HQ