

Spider Recording Scheme News

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Editor: Peter Harvey; srs@britishspiders.org.uk

My thanks to those who have contributed to this issue. S.R.S. News No. 60 will be published in March 2008. Please send contributions by the end of January at the latest to Peter Harvey, 32 Lodge Lane, GRAYS, Essex, RM16 2YP; e-mail: grays@peterharvey.freeserve.co.uk

Editorial

Unfortunately little or no progress has been made with a UK status review of spiders. We still need to finalise interpretation of the criteria and how this affects the status each species is given, to update existing species text as necessary and provide text for any new species included in the review. We await a lead from JNCC on input to this and progress to publication.

A session on using MapMate to record for the recording scheme was given at the AGM in June 2007. There are currently 282137 Araneae records in the MapMate database. Over the winter period I intend to import all the provisional atlas dataset (over 517,000 records in Access) into MapMate. Habitat and other site related data will need to be separately imported through Access after site codes have been created by MapMate. This will then mean however that all our data will be together in one database, much increasing the ease with which data can be extracted and analyses can be undertaken.

I am very grateful to Mike Towns for a huge number of detailed records with detailed site habitat and date information in Excel file format from a large number of sites in various parts of the country. I have also received over 100 new RA65 cards from Tom Thomas, mainly for Bedfordshire. These will make an enormously valuable addition to the records held by the recording scheme.

Information and guidance on the identification of difficult species is making slow progress, but will hopefully be completed over the coming winter months. Updated phase 2 guidelines to take account of MapMate are also planned to be completed over the winter.

Two encounters with spiders

by Howard Williams

I recently came across two spider species in an unexpected habitat location. The two occurrences were in different months and places, but the location was the same in each case.

On 12th July while on holiday in Oxfordshire, I came across my first *Drassodes lapidosus*. This species, common in southern England, is apparently rare in Nottinghamshire with just one record for the county (Lawrence Bee at Budby Heath, 1989). Although I did recognize it as a gnaphosid of some kind, I was unable to identify it until I took some specimens back home to inspect under the microscope.

Apart from unfamiliarity, there was a more interesting

reason why I was in some doubt about the spiders, and that is their location. There must have been dozens of them (many or most with white egg sacs) in webs built high up at the juncture of the walls and roof of a wooden bird-hide at Farmoor Reservoir. Some also occurred lower down on the walls or under the window shelving, but most were higher than this. Now most literature states that the species is to be found under stones, on screes or even synanthropically under loose debris etc lying around in gardens. Peter Harvey finds it frequently on waste ground (pers. comm.). All these examples are presumably low down or at ground level in the open.

The hide itself (Shrike Meadow Hide) is situated in an area of mown grass quite close to the reservoir embankment. Further off down the slope on the other side is a hedge, a footpath and some low-lying wetland. The hide is in a sense quite isolated, so it would be interesting to know how this colony established itself there so successfully. One can only speculate, but perhaps the wood of the hide originally bore some egg sacs while stacked somewhere awaiting use. The doors and windows of the hide seem to be open for much of the time, so it is also possible that some ballooning youngsters found their way in through the apertures and found a niche there.

Despite the proximity of all these webs and silken cells to each other, the spiders themselves appear to get along well enough. Intermixed with them were many *Steatoda bipunctata* and at least one young female *Tegenaria gigantea/saeva* – occupants more to be expected there.

One of the two females I took back retained her egg sac. In a plastic film spool holder in her cage she built a cell for herself and the egg sac and never re-emerged. Nor would she take food. Ultimately she died standing over the egg sac. In the early days of August young spiders began to appear. After only a day or so, some had died or been killed by their siblings, so I decided to release the remainder against a sheltered wooden fence in my garden. It remains to be seen whether any manage to survive there in the nearby loose debris.

The second encounter also coincidentally involved a bird-hide, but this time in Titchmarsh NR in Northants on 18th August – a gravel pits reserve. In neither of these instances was I really equipped for spidering, having, on both occasions, gone along to do a spot of birdwatching, but this time I did have a lens.

This hide too was festooned with webs, mostly high up as in the previous hide, with many medium to large spiders standing in them and scores of egg sacs. A look through the lens at a long-legged male revealed a *Larinioides*, as did an inspection of a large female. The

striking markings and size made me think of *Larinioides sclopetarius*, but I have been caught out before on that score, as some *L. cornutus* can achieve sizes well in excess of the dimensions given in most texts.

A look through the microscope back home confirmed that these spiders were indeed the local to uncommon *L. sclopetarius*. I have seen these at Lound gravelpits in Notts on a metal, strutted bridge over the river Idle and on wooden post-and-rail fencing, just such places as are mentioned in the literature. It seemed odd to find so many congregated inside a small, dark, wooden hide; more looked-after than the previous one, for the door and windows are kept shut when the hide is not in use. Another interesting thing is that the webs in the crowded space were no longer the familiar orb webs, but rather resembled a mix of *Tegenaria* sheets and *Theridion* tangles, but were very extensive and light and often inextricably merging one with another.

Males, females and immatures were present in the webs, but the only other species I could find after an admittedly cursory look round was *Zygiella x-notata*, a common inhabitant of bird-hides everywhere, usually but not always in the windows.

Various contributors (including me) have written in to the Newsletter over the years describing encounters with spiders in unfamiliar places and it seems to me that we have here two other instances of how opportunistic spiders may be when they find themselves in unusual surroundings, and how they are capable of turning circumstances to their advantage.

131 Windsor Road, Carlton-in-Lindrick, Worksop, Notts. S81 9DH

The 2008 re-surveys of the East Anglian Fens

by Richard Price

Introduction

This article follows on from the article on timed hand-collecting and repeating the 1969-1974 East Anglian Fenland Surveys (March 2007 SRS News 108:23-26) and further discusses why they are a good idea, and how they might be achieved.

Background

The original survey covered 53 fens in Norfolk, Suffolk and Cambridgeshire and aimed to discover how they differed in relation to geographical situation and land use history. When the data were analysed Duffey decided to reduce the fen total to 44. This was to ensure that all the fens included the same cover.

During the 1969-1974 surveys the fens were grouped into 3 major and 1 minor geographical region. Three

geographical groups were defined, West Norfolk (named Breckland Edge Fens), the Norfolk Broads and the Suffolk Coastal Fens. The largest of the major groups was the 14 Breckland Edge fens situated in small drainage areas on the edge of the West Norfolk upland with the Breck soils to the East and Fenland basin to the West. In this document 8 sites are listed. All sites were surveyed in June, 2 were also surveyed in September. The 14 Breckland Edge fens are as follows from north to south: Sugar Fen, East Winch Common, East Walton Fen, Caldecote Fen, Borough Fen, Stoke Ferry Fen, Foulden Common Thomson Common, Cranberry Rough, East Wretham, Pashford Fen, Icklingham Poors Fen, Tuddenham Fen (all in Norfolk) and Chippenham Fen (Cambridgeshire).

The 1964-1974 survey was a large project, a history of land use over the last 200 years was commissioned for 9 of the Breckland Edge fens and Eric used copies of the first 1 inch OS maps (early to late 19th century) to assess changes in the others. More of the Breckland Edge fens had been affected by drainage and reclamation than elsewhere in East Anglia. It is these fens which need to be reassessed.

The survey technique consisted mostly of grubbing in the ground vegetation. This included taking spiders from surface vegetation and even tall herbs when they formed part of the area collected in. Surveyors paid particular attention to the litter layers using waterproof trousers or a stout waterproof sheet to kneel on.

Aims and outputs for 2008

The primary aim is to produce a second set of good quality scientific data for comparisons with 8 of the original sites surveyed in 1969-1974. Additionally, it is hoped that the data can be used by future surveys.

Re-surveying the fens will update our knowledge of their fauna and having historical comparable data is an opportunity that shouldn't be missed. We should seek to identify the best methods for standardising the surveying of spiders. This will lead to the BAS and others being able to examine sites and possibly even regions against each other and across years. Possibly data could be incorporated in monitoring schemes. This work could be used by scientists who are trying to standardise sampling processes (Webb *et al.*, in press; Feest, 2006). The surveys will also provide an 'ideal opportunity to survey for *Dolomedes plantarius* and *Clubiona rosserae*' (Janet Beccaloni, pers. comm.) and attempt to re-find the rarer species from the 1969-1974 surveys.

The best possible result from the re-surveys will be for the sites to be protected and managed appropriately. Eric visited 7 sites in 2007, 5 from our target list and assessed them for their botanical value; he found it depressing. Those managed by Natural England are being neglected and are overgrown. However, those managed by the Norfolk wildlife trust are in good shape. Eric identified

three sites that would definitely benefit from more detailed study. These are; Thompson Common, Foulden Common, and East Walton Common, the last two are overgrown but could be restored (pers. comms.).

Survey Locations

The hope for 2008 would be to survey all sites listed below. However, this is dependent upon availability and the support of members. The sites can be listed in priority and those that are close to each other can be grouped. If the team size is 9 then we could visit all sites in 5 days, because 9 people each carrying out 1 hours collecting equals 9 hours. The survey locations are grouped to show sites that are near each other. The list gives site names and the total survey time spent for each site. A code is assigned to each site to represent it in table 1.

In the list below (*) indicates that the site was visited by Eric in 2007.

Sites that are south of the Thetford Forest

(*)Foulden (Fou) 26 hours in total

Thompson Common (Tho) 17 hours.

(*)Caldecote (Cal) 8 hours.

Sites that are North of Thetford Forest

(*)East Winch (EWin) 8 hours).

(*)East Walton Common (EWal) 16 hours.

Sites that are East of Thetford Forest

Pashford Poor's Fen (Pas) 8 hours.

Sites that are in South East Norfolk

(*)Stoke Ferry Fen (SFF) 8 hours.

Sites that are in North East Norfolk

East Ruston (ERus) 16 hours.

Any spare time means that we can search for *Dolomedes plantarius* and *Clubiona rosserae* or members can do their own thing.

How and when

Collecting will be in units of 1 hour. Each person will be responsible for bottling their hour's worth of specimens; all spiders will be collected. Only mature spiders will be used in the analysis but juvenile and immature spiders listed, this survey will involve no selection to avoid bias whereby inexperienced people find fewer species when concentrating on larger spiders (Scharff *et al.*, 2003).

During the earlier surveys it was found that 90% of species were found in 9 hours of timed hand-collecting. A team size of 9 each carrying out an hour might achieve the same result. With this in mind if we get 4 participants then the hours spent in table 1 can be doubled.

Comparable data sets are more likely to be obtained by surveying the same areas and at the same dates as the

original 1969-1974 surveys. Eric has marked out the areas surveyed and maps will be made available.

To create data sets that are comparable with those of the earlier survey it will be necessary to limit the collecting techniques to use the same techniques that were employed during the earlier survey. Therefore, we will be grubbing in the ground vegetation, taking spiders from surface vegetation and even tall herbs, and paying particular attention to the litter layers. Members can also use their own favoured survey techniques although this would not be counted as part of the comparable data sets used for statistical analysis. Techniques that members might use outside of the survey hours will aim to give each site as full coverage as possible and might involve sweeping, beating and vacuum sampling.

Most of the sites were surveyed over a week in mid June. The BAS weekend for 2008 is early in June. Therefore, I suggest the following survey dates:

5 days, arrive evening of:

Friday 16th May 2008 and depart after breakfast on the 22nd of May.

Or;

Friday 20th June, depart Friday 26th June after breakfast. Alternatively, any one of the following long weekends for 2008 and 2009 or both during 2008.

Arrive evening of Friday 20th June to depart 4pm Monday 23rd of June.

Or;

Arrive evening of Friday 16th May to depart 4pm on Monday the 19th of May.

Table 1 – Possible Itinerary for 2008

	Fou	Tho	Cal	EWin	EWal	Pas	SFF	ERus
Sat	3 hrs							
Sun		2 hrs	1 hr					
Mon				1 hr	2 hrs			
Tue						1 hr	1 hr	
Wed								2 hrs

Statistical analysis

An example of a statistical comparison of a site: Caldecote Fen

Earlier this year I carried out timed hand-collecting to re-survey Caldecote Fen. Table 2 shows the species list compared against that from the 1974 survey. Table 3 shows the composition of the families and this is also shown in the chart. The differences in spider composition are probably due to a number of differences. The 2007 survey was carried out at the end of April 2007, Eric and his team surveyed it in June 1974. In 2007 the team comprised one person surveying for one hour and 45 minutes whereas Eric and his team of 8 surveyed for 8 hours. In 2007 the survey method was almost exclusively a sweep net, Eric and his team used grubbing. In 2007, the area surveyed was a wood; 35 years ago the wooded area had open fen areas. Even without these areas of bias comparisons using two species lists of spiders do not seem to be an easy thing to do. Therefore, the comparison here should be considered as a demonstration and discussion topic rather than something that yields meaningful results.

	1974	2007
<i>Anyphaena accentuata</i> (Walckenaer, 1802)	0	3
<i>Baryphyma trifrons</i> (O.P.-Cambridge, 1863)	1	0
<i>Bathyphantes parvulus</i> (Westring, 1851)	1	0
<i>Centromerus dilutus</i> (O.P.-Cambridge, 1875)	3	0
<i>Ceratinella scabrosa</i> (O.P.-Cambridge, 1871)	1	0
<i>Cercidia prominens</i> (Westring, 1851)	4	0
<i>Clubiona lutescens</i> Westring, 1851	1	0
<i>Clubiona reclusa</i> O.P.-Cambridge, 1863	1	0
<i>Clubiona stagnatilis</i> Kulczynski, 1897	1	0
<i>Clubiona subtilis</i> L.Koch, 1867	8	0
<i>Crustulina guttata</i> (Wider, 1834)	13	0
<i>Crustulina sticta</i> (O.P.-Cambridge, 1861)	10	0
<i>Dictyna arundinacea</i> (Linnaeus, 1758)	1	0
<i>Dismodicus bifrons</i> (Blackwall, 1841)	1	0
<i>Episinus angulatus</i> (Blackwall, 1836)	1	0
<i>Ero cambridgei</i> (Kulczynski, 1911)	7	0
<i>Gonatium rubens</i> (Blackwall, 1833)	1	0
<i>Gongylidium rufipes</i> (Linnaeus, 1758)	0	15
<i>Hygrolycosa rubrofasciata</i> (Ohlert, 1865)	10	0
<i>Hypomma bituberculatum</i> (Wider, 1834)	0	2
<i>Kaestneria pullata</i> (O.P.-Cambridge, 1863)	3	0
<i>Lathys humilis</i> (Blackwall, 1855)	0	1
<i>Lepthyphantes cristatus</i> (Menge, 1866)	0	1
<i>Lepthyphantes ericaeus</i> (Blackwall, 1853)	1	0
<i>Lepthyphantes mengei</i> Kulczynski, 1887	9	0
<i>Lepthyphantes tenuis</i> (Blackwall, 1852)	1	0
<i>Linyphia hortensis</i> Sundevall, 1830	0	3
<i>Maso gallicus</i> Simon, 1894	57	0
<i>Maso sundevalli</i> (Westring, 1851)	7	0
<i>Meioneta saxatilis</i> (Blackwall, 1844)	2	0
<i>Metellina mengei</i> (Blackwall, 1869)	0	9
<i>Metellina segmentata</i> (Clerck, 1757)	0	1
<i>Micrargus herbigradus</i> (Blackwall, 1854)	1	0

	1974	2007
<i>Minyriolus pusillus</i> (Wider, 1834)	2	0
<i>Monocephalus fuscipes</i> (Blackwall, 1836)	2	0
<i>Neon reticulatus</i> (Blackwall, 1853)	18	0
<i>Neottiura bimaculata</i> (Linnaeus, 1767)	6	0
<i>Neriere clathrata</i> (Sundevall, 1830)	10	0
<i>Neriere montana</i> (Clerck, 1757)	1	1
<i>Neriere peltata</i> (Wider, 1834)	0	1
<i>Ozyptila trux</i> (Blackwall, 1846)	4	0
<i>Paidiscura pallens</i> (Blackwall, 1834)	0	1
<i>Pardosa nigriceps</i> (Thorell, 1856)	1	0
<i>Pholcomma gibbum</i> (Westring, 1851)	2	0
<i>Pirata hygrophilus</i> Thorell, 1872	15	1
<i>Pocadicnemis pumila</i> (Blackwall, 1841)	19	0
<i>Saaristoa abnormis</i> (Blackwall, 1841)	1	0
<i>Silometopus reussi</i> (Thorell, 1871)	0	2
<i>Tetragnatha montana</i> Simon, 1874	0	18
<i>Theonoe minutissima</i> (O.P.-Cambridge, 1879)	2	0
<i>Theridion tinctum</i> (Walckenaer, 1802)	0	1
<i>Tibellus maritimus</i> (Menge, 1875)	9	0
<i>Tibellus oblongus</i> (Walckenaer, 1802)	1	0
<i>Walckenaeria acuminata</i> Blackwall, 1833	3	0
<i>Walckenaeria atrotibialis</i> (O.P.-Cambridge, 1878)	1	0
<i>Walckenaeria unicornis</i> O.P.-Cambridge, 1861	1	0
<i>Zelotes latreillei</i> (Simon, 1878)	1	0
<i>Zora spinimana</i> (Sundevall, 1833)	10	0

Table 2 - Species list from Caldecote Fen 1974 shown against that from 2007

	Caldecote Fen 1974	Caldecote Fen 2007
Araneidae	1.57%	0.00%
Clubionidae	4.31%	0.00%
Dictynidae	0.39%	0.00%
Gnaphosidae	0.39%	0.00%
Linyphiidae	50.59%	43.86%
Lycosidae	10.20%	1.75%
Mimetidae	2.75%	0.00%
Philodromidae	3.92%	0.00%
Salticidae	7.06%	0.00%
Tetragnathidae	0.00%	49.12%
Theridiidae	13.33%	5.26%
Thomisidae	1.57%	0.00%
Zoridae	3.92%	0.00%

During the survey of Caldecote Fen, rare species found in 1974 were not re-found in 2007. These are: *Ceratinella scabrosa* (O.P.-Cambridge, 1871), *Crustulina sticta* (O.P.-Cambridge, 1861), *Hygrolycosa rubrofasciata* (Ohlert, 1865) and *Maso gallicus* Simon, 1894. This is possibly because of the smaller team size in 2007 and because most of the time was spent sweeping rather than searching in and on the vegetation as Eric's team had.

I attempted to compare the wetland species from each survey using a 2x2 contingency table for Chi Squared testing. However, this failed due to a shortage of data (wetland species) collected in 2007.

Species lists are not the best way of presenting data for statistical testing because there are not the replicates that suit many of the more rigorous statistical methods.

A comparison of the wetland fauna of the 1974 and 2007 data sets could be carried out in a similar manner to that outlined below. To do this first identify the species that tend to be found in wet or moist habitats and then process the data in a similar manner. The results could be used to indicate desiccation at a site.

The Spearman Rank test was used to test the hypothesis that there is a similarity between the sites. The result after removing double zeroes (where both species are 0) was $p = 0.670298$ where $n = 59$. This shows that the hypothesis is accepted and is highly significant at 1%. However, looking at the difference in spider composition a result using this method seems incorrect.

For statistical testing that involves two long species lists from one site or region a Chi-squared test is probably the best method. However, there is a problem when expected values are less than 5 as can happen when there are lots of zero counts.

For descriptive statistics family compositions can be examined using Excel charting against percentage as shown here. Diversity or similarity indices combined with Spearman rank may be the best way to proceed. In a 1969 paper Stratton and Uetz used the G-test method to compare a table of percentage similarity values against those containing Sorenson's similarity indices. This did seem to highlight the differences rather well. There may be more modern ways of doing this and I am willing to take advice.

Conclusion

In September a survey of Thompson Common was carried out by the author along with Peter Nicholson and Pip Collyer of the Norfolk Spider Recording Group. The results will be included in a future newsletter for comparison against the historic data. It was a useful exercise, though we did not stick to the correct protocol. This was my fault, I did not revise the methodology carried out for the original survey and update the protocol sheet appropriately. Therefore much of the data is likely to be non-comparable as we carried out sweeping, beating and vacuum sampling.

For the future a funded program can be put together to carry out surveys in both June and September 2008. The funding (optional for members to claim) would pay for the travel and accommodation costs of members. Perhaps it would also pay something towards their time if the budget would stretch to it. This would help to encourage support of members.

Acknowledgements

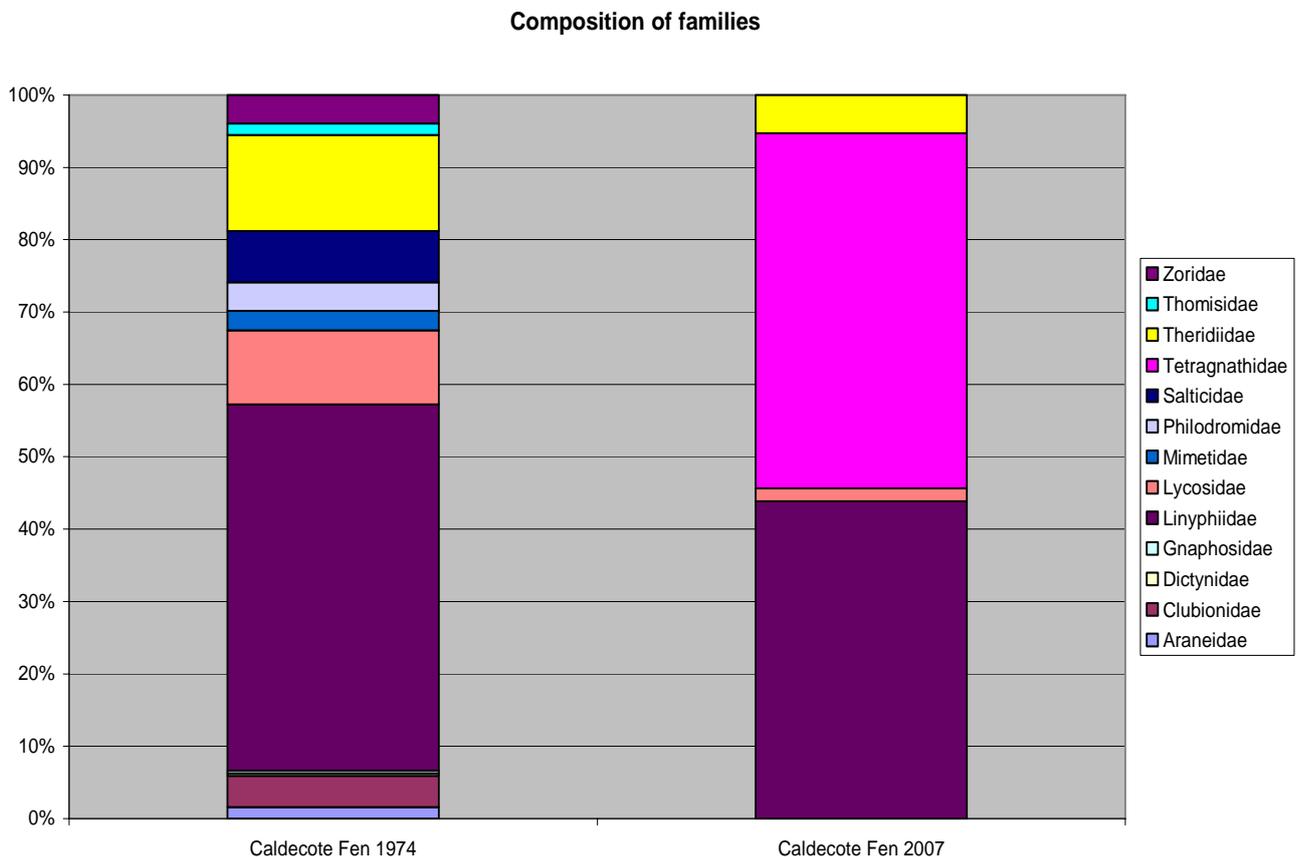
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Table 3 - Spider composition by family in 1974 and in 2007



Peter Nicholson and Pip Collyer of the BAS and Norfolk Spider Recording Group for taking part in the tiring but rewarding survey of Thompson Common and experimenting with timed hand-collecting. The ideas generated and experience will make a useful follow up article.

Appendix

Description of the habitat in 2007

The survey area had changed from a wooded area with open fen areas in 1974 to a wooded area in 2007 with no open areas. Trees were common, shrubs present but not common. The area was very shaded and the ground very damp with pools of water and wet leaf litter. From memory, I cannot remember what plants were present and will need to revisit the area next year and pay more attention to the vegetation type (grasses, sedges, reed, field layer plants etc.). Future surveys should always make a note of the vegetation.

Timed hand-collecting protocol sheet

1. Record the grid reference of your current location. If you have a GPS device record it along with the accuracy.
2. Ensure that you have sufficient tubes for an hour's collecting and a pen and paper for noting the time that you devote to different techniques within the searching, for example, half hour sweep netting to tall herbs.
3. Note the start time and collect all species for one hour. Do not check for maturity, if it is a spider than collect it. By sampling for hour long periods it will be possible to calculate how long is needed to collect until no new species are found. Grub in the ground vegetation, taking spiders from surface vegetation and even tall herbs, and pay particular attention to the litter layers.
4. After one hour in a location the team will move to a new location even if it is only a few metres away. Allow a minimum of 10 minute break between each hour.

Notes:

After obtaining each comparable data set from surveying a site we should allow time for casual surveying whereby the participants' can do their own thing. However, these data would not be used in comparisons.

The habitat where collections are carried out should be noted, in particular note: openness (i.e. whether trees and shrubs are common); type of vegetation (grasses, sedges, reed, fieldlayer plants etc.); is the ground, and especially the litter, wet, damp or dry.

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121 Marina, St Leonards on Sea, East Sussex TN38 0BN; email: freerichard@btinternet.com

Metellina mengei – a spider of spring and early summer?

by Howard Williams

I wonder if the consistently warmer annual temperatures of the past decade or so are changing the old assumption that *Metellina mengei* is mature mostly in the months April-June, while *Metellina segmentata* is so mostly in the months July-November. There has always been overlap of course, but looking over the past 6 years I find that I have recorded *M. mengei* males and/or females on 3 occasions in September (the latest being several males and females on 15th September this year – 2007); on 2 occasions in July; and two very late (or very early) males on one occasion in January 2003.

The other records (11 occasions) did occur in the months April-June, so that the likelihood of an early-year *Metellina* being *M. mengei* still holds true. It might nevertheless be worth examining more closely some later-season *M. segmentata* – they may prove to be *M. mengei* after all.

On the other hand, all my records of mature *M. segmentata* males and/or females have occurred in the classic months of July-November. An exception, oddly enough, was a male and female found at the same site and January date as the two *M. mengei* males mentioned above. These, perhaps, were very late rather than very early.

131 Windsor Road, Carlton-in-Lindrick, Worksop, Notts S819DH

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