Spider Recording Scheme News
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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. 91 will be published in Summer 2018. Please send contributions by the end of May at the latest to Peter Harvey, 32 Lodge Lane, GRAYS, Essex, RM16 2YP; e-mail: srs@britishspiders.org.uk or grayspeterharvey@gmail.com. The newsletter depends on your contributions!

Editorial

As always, thank you to the contributors who have provided articles for this issue. **Please help future issues by providing articles**, short or longer, on interesting discoveries and observations.

We now have 1,061,638 spider records in total in MapMate. About 425,429 have at least some site-based phase 2 habitat information. A backlog of Excel data in very user-unfriendly format remains to be dealt with.

Harvestman species accounts have now been provided on the website through the work by Mike Davidson to produce the accounts and Helen Smith, who has very kindly uploaded them. ID difficulty ratings are also given, in the same way that they are provided for spiders.

As originally described in the March 2012 SRS News No. 72 pp.2-23, the SRS website provides logged-on members with an 'Area Lists' page that provides species totals for vice counties, counties and countries (England, Wales, Scotland). Selecting the vice county, county or country will then generate a species list for that area from the records in the database, with the national status and last year recorded. This also now includes the total number of hectads in a VC in which each species has been recorded.

I would urge submission of records to Area Organisers, or where they do not use MapMate copied directly to myself. The Spider Recording Scheme is about far more than simply putting dots on maps, the most basic requirement for any recording scheme.

MapMate provides the means to record the Phase 2 autecological data that are a primary aim of the recording scheme. This has resulted in a remarkably data-rich database, unique in its structured autecological content and which is probably unparalleled in this country. MapMate provides the means to seamlessly exchange data that take account of edited and deleted as well as new records, and to upload these from the master database to the website using the Schemes software, so that the SRS website data are always up-to-date. The value of automatically keeping track of changes like this and the work saved by this process is huge.

Although the recording scheme will accept data in Excel or similar format, I must emphasise that the use of Excel means the loss of any site-based Phase 2 autecological data, and also often creates a very large amount of work to iron out the many errors which almost always result from taxon name typos, to check and correct incorrectly entered grid references (e.g. odd numbers of digits), to iron out inconsistencies in the use of non-SRS field entries and often to also find site vice counties where these have not been provided. None of this is necessary when records have been entered into MapMate because of its automatic built in validation.

We continue to have exciting discoveries, with a new harvestman reported in this issue in the form of *Scotolemon doriae* Pavesi, 1878 found by Prof. David Bilton in a Plymouth cemetery. How widespread might it turn out to be in the south-west?

Area Organiser changes

Bill Blumson takes over as Area Organiser for Wiltshire VC7 & 8 (Wilts. North, Wilts. South). Contact details are: Bill Blumson 30 White Street, West Lavington, DEVIZES SN10 4LP billblumsom@aol.com

Many thanks indeed are due to Martin Askins for the many years he fulfilled the role and all the work he did towards the production and publication of the provisional atlas.

Scotolemon doriae Pavesi, 1878 in Britain

by David Bilton

On 31st December 2017 a single male specimen of this harvestman was found in a Plymouth cemetery. A further search on New Year's Day revealed that the species was widespread across this site, being found on the underside of embedded stones overlying small cavities in the soil. *S. doriae* becomes the first member of the sub-order Laniatores known to occur outdoors in Britain.

When first spotted, this small (1.5-1.7 mm), pale orange animal was almost passed over as a large orange mite, but adopted a characteristic hunched posture when disturbed. Within the genus, *S. doriae* can be distinguished by the shape of the male trochantal apophysis, and penis apex.

The species is apparently native to the north-western Mediterranean, but has recently been reported from western France (Iorio & Racine, 2017). A full description of this find will appear soon, likely in *Arachnology*.

Reference

Iorio, E. & Racine, A. 2017. Première observation de *Scotolemon doriae* Pavesi, 1878 dans le Massif armoricain (Opiliones, Phalangodidae). *Revue arachnologique* **4**: 41-45.

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Vice county totals update from the National Organiser

All the information provided on the SRS website is derived from records provided to the recording scheme and the distribution and autecological information is dynamically generated from the latest data, so is completely up-to-date with the data provided to the scheme in a format which can be dealt with reasonably easily and uploaded. The table below provides an update of totals for records submitted to the Spider Recording Scheme by VC. I would urge recorders and Area Organisers from all vice counties to help fill in the gaps.

Table 1. Summary of records per VC

VC	Records	Records2001-on	Records 2010-on	VC	Records	Records2001-on	Records 2010-on
1	2919	589	204	57	16055	3300	455
2	1944	597	155	58	10915	1037	852
3	10550	4621	2312	59	13929	2532	831
4	4629	2238	2079	60	18356	8691	1419
5	5404	647	229	61	7754	896	253
6	5182	759	390	62	10167	1212	784
7	14496	1542	121	63	21880	6726	1355
8	13685	2377	91	64	12795	3910	1702
9	22257	9499	3900	65	2781	1207	892
10	2544	1022	78	66	3364	377	261
11	19508	5210	1646	67	5648	774	725
12	11339	5185	2432	68	1311	93	76
13	9415	4397	2316	69	12312	5516	361
14	11351	6849	2886	70	14971	6404	1990
15	24174	12797	4083	71	3999	21	21
16	13436	5303	1432	72	4179	1880	1861
17	46774	22375	9563	73	10195	2319	2221
18	81226	30153	12240	74	1785	644	631
19	54750	5486	1826	75	2196	74	63
20	14500	3811	401	76	2302	76	54
21	14287	2922	1116	77	3479	690	573
22	7635	4161	752	78	1009	144	144
23	5034	951	81	79	471	43	43
24	4892	778	436	80	707	37	36
25	23974	7981	2214	81	829	37	27
26	10435	5870	1885	82	3269	991	991
27	19299	6729	1402	83	5224	114	83
28	7167	2638	1636	84	925	1	1
29	8737	2991	1097	85	5111	633	542
30	30425	8227	1154	86	6583	422	123
31	10413	5229	2406	87	2682	1008	281
32	9335	982	91	88	6739	1711	1423
33	3993	1075	113	89	3125	351	231
34	4480	809	94	90	8186	361	135
35	3139	310	79	91	2451	1206	456
36	4162	629	89	92	5539	2056	1270
37	11305	4341	608	93	3369	1520	369
38	7888	1491	208	94	1105	336	190
39	25949	503	151	95	6612	5424	1648
40	12257	3639	1771	96	17177	12573	3458
41	6068	1374	727	97	1595	465	57
42	2201	436	184	98	1770	197	92
43	1526	56	26	99	2441	43	33
44	3604	57	21	100	1161	374	273
45	10964	1926	94	101	919	246	221
46	12145	2357	544	102	2061	667	347
47	2373	107	18	103	702	556	105
48	5999	1187	582	104	2174	703	289
49	13814	3256	1719	105	2263	308	275
50	7402	1286	892	106	3017	2121	1124
51	5467	449	381	107	6290	5348	3236
52	6671	1243	942	108	1743	308	122
53	6031	2466	900	109	22236	6492	25
54	14556	4417	989	110	935	117	93
55	39466	11003	224	111	2152	1548	285
56	12127	6175	1673	112	525	24	1

The Status of Spider Recording in Watsonian County Durham

by Richard Wilson

Introduction

In spring 2016, I took on the role of spider recorder for the Watsonian vice-county (VC) of County Durham (VC 66), which now means I cover the north-east region of England (i.e. Yorkshire VCs (except VC 63 [South Yorkshire]; and both Northumberland VCs (VC 67 [South Northumberland] and VC 68 [North Northumberland]). This short article provides a brief review of the status of spider recording in VC 66 and follows on from previous articles covering Yorkshire (Wilson, 2011) and Northumberland (Wilson, 2015); and is based on the national spider recording scheme (SRS) dataset; which is available on-line at http://srs.britishspiders.org.uk.

Whilst it is unlikely that I will become a regular visitor to County Durham, it is the hope that this article raises readers' awareness of the recording opportunities within this VC and stimulates individuals to submit records from what is a relatively poorly recorded area in England.

History of Spider Recording in County Durham

The earliest catalogue of spiders associated with County Durham was written by Reverend John Edward Hull and published at the end of the 19th Century, which also covered Northumberland (Hull ,1896). As described in Wilson (2015), Hull was one of the UK's early eminent arachnologists and a vicar. He spent the majority of his adult life in Northumberland. The 1896 catalogue covered both Northumberland and Durham and listed 109 species collated from earlier publications as well as his own observations from County Durham. Hull authored a number of papers between 1920 and 1940, providing some generic observations of various aspects of spider biology in the Northern Naturalists' Union publication devoted to the natural history of Northumberland and Durham, *The Vasculum*; but no clear ascription to County Durham is given where reference to individual species is mentioned.

The next reference to County Durham in the literature available to me is Michael Kilner's compendium of county records provided in the Spider Recording Scheme Newsletter is Locket, Millidge and Merrett (1974) who convey a list of 160 species recorded in VC 66. Subsequent work undertaken by David Horsfield between very late December 1977 and May 1979 from six sites within the old administrative county of Cleveland but straddling VC 66 and VC 62 (North-east Yorkshire) resulted in 219 species and brought the total for VC 66 to 210 species (Horsfield, 1980).

Since the late 1970s, records have been clustered around the mid-1980s related to Dr. Steve Rushton's work on upland spiders; and the early-1990s on Hedleyhope Fell, near Tow Law. Records in the latter half of the 1990s and in to the early 2000s are relatively sporadic; with limited recording effort thereafter. By the end of 2001 and the publication of the provisional national Atlas (Harvey, Nellist and Telfer, 2002), the number of species recorded in VC 66 had risen to 292.

Spider Recording (Post 2002 Atlas)

As of 1st January 2018, the total number of species recorded in County Durham is 295 species. Species diversity across the VC is illustrated in the diversity map (by hectad) presented in Figure 1 and associated table. There is clearly a bias towards under-recording as approximately 67 % (29 out of 43 hectads (in whole or part) have recorded no more than 50 species.

The distribution of records within VC 66 (sees Figure 2) is largely focussed on the region south-west of Gateshead, around Consett and Lanchester, with an outlier associated with Langdon Common, north-east of Cow Green Reservoir. There are four hectads where there are no historical spider records out of the 43 that cover VC 66 (NY 74; NY 72; NZ 20 and NZ 30). Within NY 74, the area of land within VC 66 is fairly small, but accessible from the minor road to Coalcleugh around Hesleywell Moor in the upper reaches of the River West Allen. Within NY 72, there is only a small sliver of land on the western edge of Mickle Fell, south of Maize Beck off the Pennine Way but otherwise relatively inaccessible.

Figure 1. Spider diversity within Watsonian County Durham. Red circles: </= 50 spp.; yellow circles: 51 to100 spp.; pale green circles: 101 to 200 spp.

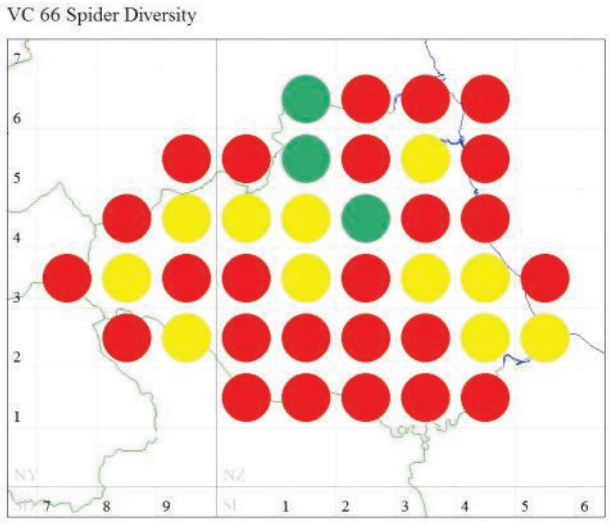
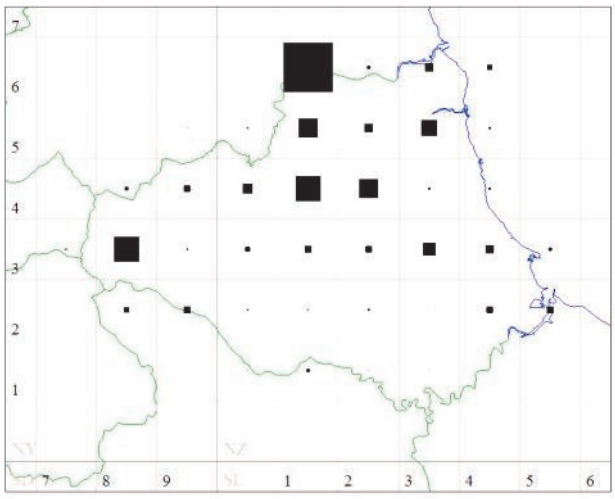


Figure 2. Relative recording effort within the Northumberland VCs. The larger the squares, the more records. © SRS/ British Arachnological Society



Anyone collecting spiders in and around NY 797 269 would be dedicated to the cause; though if the weather was clement, rewarded with some stunning scenery in glorious isolation! Within NZ 20 and NZ 30, the River Tees meanders in a few tight loops, just south of of Hurworth-on-Tees, resulting in fingers of land creeping in to VC 66.

'Rare' Spiders

An analysis of the SRS database available online for VC 66 has provided the results illustrated in Table 1. Almost one-fifth of all County Durham's species have not been recorded for more than 50 years and about a third have not been recorded for at least 25 years.

Table 1: Number of species last recorded in each date class in VC 66 (as of 1st January 2018).

Before 1964	Between 1964 & 1989	1990 to 2017
51 (17.3 %)	94 (31.9 %)	150 (50.8 %)

Like Northumberland (Wilson, 2015), County Durham is poorly recorded, which is possibly a reflection of the lack of any National Parks, though Weardale and Teesdale both fall within the North Pennines Area of Outstanding Natural Beauty. In reality, it is probable that much of the vice-county is remote and a lack of any resident naturalists with an interest in spiders has resulted in spiders being a neglected group. For any visiting naturalist, or BAS member who lives within or close to County Durham, there is plenty of scope to provide much needed modern records for this neglected corner of Britain.

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Another British location for *Holocnemus pluchei* (Scopoli, 1763)

by Paul Lee and Rob Garrod

Jon Daws collected the first British specimen of *Holocnemus pluchei* from Lutterworth, Leicestershire in 2004 (Daws, 2005) and a second colony was found near Stratford upon Avon in 2006 (Taylor, 2006). Oxford (2017) recently reported finding a single female from a third British location, a garden centre in Stockton-on-the-Forest near York but was unable to find evidence of an established colony. We report here the discovery of another British colony from Hadleigh near Ipswich, Suffolk.

On 12th October 2017, one of us (RG) observed four specimens of a spider while at work in a factory on Lady Lane Industrial Estate, Hadleigh (TM031434). Six spiders were seen the following day. At first sight the spiders were dismissed as *Pholcus phalangioides*, but on reflection they seemed a bit darker. Using a mobile phone, several photos were taken and from these a provisional identification of *H. pluchei* was made. The photos were forwarded to PL and thence to Peter Harvey who agreed that the identification appeared likely but suggested specimens were obtained for confirmation. RG collected four specimens on 16th October and these were duly confirmed by PL as *H. pluchei* (two males, one female and one immature).

Based on the records from Hadleigh, Lutterworth, Welford and York, females are mature in England in the autumn months (September to December) and again in March and July. Daws (2007) states females were present "throughout the year". No males were collected at Lutterworth or York. Welford supported a breeding colony including at least one male in August (Taylor, 2006) and both sexes were seen at Hadleigh in October. European workers have reported both sexes from a wider period; mature females from September to December and also February, May and July and males from March, August and September (Le Peru, 2011; Nentwig *et al*., 2017).

Rozwalka & Stachowicz (2010) argue that the absence of *H. pluchei* from keys to the spiders of Central and West European countries written in the twentieth century combined with the increasing number of post-2000 reports of the spider from these same countries provide evidence for a recent range expansion. *H. pluchei* is considered native to the Mediterranean region and Asia Minor (Brignoli, 1971) but it's European distribution now ranges from the coasts of the Mediterranean Sea northwards to Denmark and from Ukraine westwards to Portugal and Great Britain. Nentwig *et al*. (2017) state that the species 'should not be listed as alien or invasive because it is native to Europe' but both CABI (2017) and DAISIE (2017) do list it as invasive. Most of the reports of the spider as new to Central and West European countries mention synanthropic sites and Rozwalka & Stachowicz (2010) consider it to be an introduction to these sites.

Daws (2007) noted wine pallets from France or Spain as a probable route of introduction to Lutterworth. The Lutterworth and Stockton spiders probably arrived via the horticultural trade on imported plants. The factory in Hadleigh imports raw materials from a variety of

Figure 1. Underside of *Holocnemus pluchei* Photograph © Rob Garrod.

European countries and although, the exact source of the colony is unknown, these imported materials are the probable route of introduction. Given the volume and diversity of imports from Europe to Britain what is surprising is not that a further colony of *H. pluchei* has been located but rather that it has been over a decade between the initial discoveries and the latest finds. We are in agreement with Oxford (2017) that surely there must be other populations lurking in garden centres, warehouses, factories and similar sites around Britain.

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Araneus alsine (Araneae: Araneidae) at Flanders Moss lowland raised bog (VC87 West Perthshire, Scotland)

by Chris Cathrine

Araneus alsine was recorded at Flanders Moss (Site of Special Scientific Interest (SSSI) and National Nature Reserve (NNR)) (VC87 West Perthshire) in 2013 and 2014. Flanders Moss, a lowland raised bog, is a new site for this species, and the most southerly in Scotland (see 'Note on Distribution in Scotland' below). *A. alsine* has previously been recorded in Inverness-shire (multiple sites along the Great Glen) and Perthshire (Killiecrankie and Glen Fincastle) in Scotland, and is also found in southern England and Wales, in a UK context.

A single male was collected on 8 July 2013 by Chris Cathrine and Glenn Norris using bugvac (vacuum sampling) during Site Condition Monitoring surveys completed by Caledonian Conservation Ltd under contract to Scottish Natural Heritage (SNH), targeting the notified spider feature of the SSSI, *Heliophanus dampfi* (Cathrine *et al.,* 2015). The specimen was collected in an area of raised bog with slight encroachment from shrubs and birch (*Betula* spp.) regeneration, to the east of the moss, which is bordered by semi-natural broadleaved woodland (NS647981). The habitat is shown in Figure 1. The following year, after raising awareness of the spider fauna at Flanders Moss, Francois Chazel (former Reserve Manager, SNH) found a female *A. alsine* which he reported to Chris Cathrine (who confirmed the identification). This specimen was recorded on 16 July 2014 in an area of scrub near the centre of the north-west dome of the bog (NS6299). This dome is bordered by extensive commercial conifer plantation and small areas of semi-natural broadleaved woodland. The habitat is shown in Figure 2.

Although found at opposite ends of Flanders Moss, both specimens were recorded in habitat consistent with that occupied by *A. alsine* in Inverness-shire and elsewhere in Europe (Almquist, 2005; Bowman, 2010): bog with encroachment from scrub and young trees.

Neither Stewart (2001) nor Lee (2004) recorded *A. alsine* during surveys targeting spiders at Flanders Moss, although the latter was part of the SSSI site condition monitoring programme and so targeted *H. dampfi.* This may suggest that this distinctive species occurs on the bog at low densities, or isolated locations within this large site (859 ha) (Cathrine *et al.,* 2015).

Flanders Moss is the largest remaining lowland raised bog in Britain and the most intact in Europe (Cloy *et al.* 2005). It is managed by SNH, and a flagship site for peatland restoration. Since *A. alsine* was recorded, the bog has been subject to intense restoration work, particularly in the east, where tree and scrub regeneration has been removed and the water level raised by various

Figure 1. Habitat at east of Flanders Moss, where male *Araneus alsine* was recorded in 2013.
Photograph © Chris Cathrine / Caledonian Conservation Ltd.

Figure 2. Habitat on north-west dome of Flanders Moss, where female *Araneus asline* was recorded in 2014. Photograph © Chris Cathrine / Caledonian Conservation Ltd.

means at the location where the male specimen was collected in 2013. This is likely to have reduced the available habitat for this species, although the interface between the bog and the birch-dominated semi-natural broadleaved woodland is likely to remain suitable. As peatland restoration work continues, and previous management actions take effect, the bog will become wetter and more open, with little or no scrub or tree encroachment, and therefore less suitable for *A. alsine*.

Araneus alsine is Nationally Scarce but not assessed as qualifying for an IUCN threat category in the latest status review (Harvey *et al.,* 2017).

Note that all invertebrate records collected during site condition monitoring undertaken by Caledonian Conservation Ltd in Scotland are available at full resolution on NBN Atlas as required under SNH contract (https://registry.nbnatlas.org/public/show/dp4). The results of the 2013 Site Condition Monitoring surveys at Flanders Moss SSSI are described in Cathrine *et al.* (2015), focussing on the target notified spider feature (*H. dampfi*).

Note on Distribution in Scotland

At the time of writing there were two additional records of *A. alsine* from Scotland in a Buglife dataset on NBN Atlas: one from 2014 at Ardeer (NS289412, VC75 Ayrshire) and the second from 2016 at Cowdenbeath (NT149909, VC85 Fifeshire). These records are erroneous, relating to *Larinioides cornutus* and not to *A. alsine* (Craig Macadam, Buglife, pers. comm. 20 November 2017).

Acknowledgements

The author is grateful to SNH for commissioning the invertebrate surveys at Flanders Moss SSSI as part of their ongoing site condition monitoring programme, and to Athayde Tonhasca for encouraging the publication of articles to share results with the wider ecology community. The author would also like to thank Glenn Norris for his assistance with fieldwork and Francois Chazel for reporting incidental spider records at Flanders Moss. David Pickett (current Reserve Manager for Flanders Moss, SNH) also helped by providing further details relating to Francois' record of *Araneus alsine*.

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Observations on *Dipoena torva* (Araneae: Theridiidae) ecology, including a record from Alvie Site of Special Scientific Interest (VC96 East Inverness-shire, Scotland) in birch dominated woodland

by Chris Cathrine

Dipoena torva is considered to be associated with Scots pine (*Pinus sylvestris*) in open woodland in Scotland, where it spins a web in fissures of bark near wood ant (*Formica aquilonia* and possibly other species) trails. When the ant's antennae are ensnared by the web the spider envenomates its prey, biting through the thin membrane at the base of an antenna. The spider then tends to move the captured wood ant away from the tree trunk, and the risk of other ants attacking it or stealing its prey before it can feed on the tissues in its head. Even immature *D. torva* are able to feed in this way (Bratton 1991; Roberts 1995; Davidson 2011; Bee *et al.* 2017; Chris Cathrine pers. obs.). Observations of *D. torva* are provided below, hopefully adding further ecological detail, which may aid surveyors hoping to locate this species, or those aiming to conserve populations.

The author spent four hours over two days in 2016 visually searching for spiders in the Caledonian pine forest east of Loch an Eilein, Rothiemurchus Estate (NH8908, 4 September), and east of Forest Lodge, Abernethy Forest (NJ0316, 7 September). On the first day, during three hours of searching, four female *D. torva* were found (three at NH898084 and one at NH899084), as well as several immature *Dipoena*. A single female was found on the second day (NJ030163), as well as two juvenile *Dipoena*, during one hour of searching. All were located by searching tree trunks for webs, and finding captured wood ants, in several cases with spiders still feeding on their prey. Many other dead wood ants were also found hanging from silk in similar circumstances, but where no *Dipoena* were located nearby. All *Dipoena* and webs were found on old Scots pine with deeply fissured bark, in close proximity to an active wood ant commuting route. Dead ants were found hanging from silk (with at least one attachment point from the head) pulled away from the trunk, secured from a small broken branch or other protrusion from the tree. All webs and *Dipoena* were found on an east-south-east to south-east aspect of the tree trunks. These records were made at the end of the known adult season for *D. torva* (May to August in the UK (Bee *et al.* 2017), although Bratton (1991) states females are also found in September). It's also worth noting that the author could only safely access heights up to 2 m on tree trunks, but Simon (1997) found *D. torva* to be most abundant at heights of around 10 m, with few below 5 m. Therefore, the survey season and restricted survey height are likely to have limited the number of individuals encountered.

A notable record of *D. torva* was also made at Alvie Site of Special Scientific Interest (SSSI) during site condition monitoring surveys completed by Caledonian Conservation Ltd, under contract to Scottish Natural Heritage (SNH), although the target notified features did not include spiders (Cathrine *et al.* 2015). A single female *D. torva* was collected on 15 July 2013 by Chris Cathrine and Glenn Norris using bugvac (vacuum sampling) at the edge of woodland to the east of Bogach (NH882096). Although collected from the ground, trees had been beaten, shaken and swept before vacuum sampling in search of one of the notified features, *Hagenella clathrata* (Trichoptera). It is therefore considered likely that the specimen was dislodged from a tree before being collected from vegetation at the base. The woodland at this site is dominated by birch (*Betula* spp.), although there are scattered pines, and wood ants are present in the area (Figure 1). Although more commonly encountered on old pines throughout its range, *D. torva* is known to occur on broadleaved trees such as oaks elsewhere in Europe, and many of the birch trees at Alvie SSSI have deeply fissured trunks, which could be used by *D. torva* for web construction (Simon 1997; Aakra & Hauge 2000; Almquist 2005). *F. aquilonia* are also known to utilise mixed woodland, including birch, although may be more difficult to detect in such habitat as nests can be less obvious (Stockan & Robinson 2016; Chris Cathrine pers. obs.). It therefore seems likely that habitat structure (i.e. deeply fissured bark on trees for web construction) and availability of prey (i.e. wood ants) are key relevant factors for *D. torva*, as opposed to the actual tree species present. Similarly, their presence in relatively open woodland areas may relate to the ecology of their wood ant prey, rather than representing a direct ecological requirement for the spider – *F. aquilonia* is the wood ant species most tolerant of shade in Scotland, but still tends to nest along forest rides in closed canopy plantation (Hughes 2006).

In the latest status review by Harvey *et al.* (2017), *Dipoena torva* was assessed as Nationally Rare

Figure 1. Example of semi-natural mixed woodland habitat dominated by birch (*Betula* spp.) with scattered pines at Alvie SSSI. Photograph © Chris Cathrine / Caledonian Conservation Ltd.

(equivalent to the categories used in Bratton 1991) and assigned the Near Threatened IUCN threat category.

Note that all invertebrate records collected during site condition monitoring undertaken by Caledonian Conservation Ltd in Scotland are available at full resolution on NBN Atlas as required under SNH contract (https://registry.nbnatlas.org/public/show/dp4).

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The author is grateful to SNH for commissioning the invertebrate surveys at Alvie SSSI as part of their ongoing site condition monitoring programme, and to Athayde Tonhasca for encouraging the publication of articles to share results with the wider ecology community. The author would also like to thank Glenn Norris for his assistance with site condition monitoring fieldwork, and Joanne O'Hara for her useful comments.

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Meta bourneti Simon, 1922: Tetragnathidae – first record for Devon

by Matt Prince

In 2017, Sarah Butcher of the Devon Bat Group sent me pictures of cave spiders found whilst surveying bats on the East Devon heaths. They were clearly *Meta* species, and although I knew only *M. menardi* had been recorded in Devon, *M. bourneti* is easily overlooked, so it was important to determine the actual species, rather than assume the commoner one. Sarah suggested I join one of the group's routine visits so that I could have a close look at the actual spiders.

On 20th January 2018, I met up with the survey team in an East Devon car park and was taken through the safety and bat welfare protocols. The sites we were checking are ex-military huts where Marines were once subjected to tear-gas training. Military use of the huts ceased more than 20 years ago. Now various bat species use them, and outside of the regular bat surveys, the entrances are locked to prevent undue disturbance.

The three huts I visited all have an entrance at one end, a barred window at the other, and they are subdivided internally giving a range of light from twilight to total darkness. They are above ground, two are covered in ivy, I would guess the largest is about 100 square metres. At the time of the visit the outside temperature was roughly 8 degrees centigrade, inside the largest hut it was two degrees lower.

In most huts I found *Amaurobius ferox* and *Metellina merianae* (including var. *celata*) in the threshold areas and then good numbers of *Meta* sp. of all ages inside. In each hut I checked the numbers present and then took a single large female Meta sp. outside to check the epigyne with a x10 lens. When this wasn't a fully formed and sclerotised structure I returned the sub-adult and repeated the process with the next large female. With limited time this rough sampling seemed to be the best method for confirming the expected *M. menardi* without unduly disturbing the bats.

In each of the three huts the adult females sampled were *M. menardi*. However, just as we were about to leave the third hut, one of the bat group members, Carly Benefer, an ecologist who had expressed an interest in the

Figure 1. *Meta bourneti* in Devon. Photograph © Matt Prince.

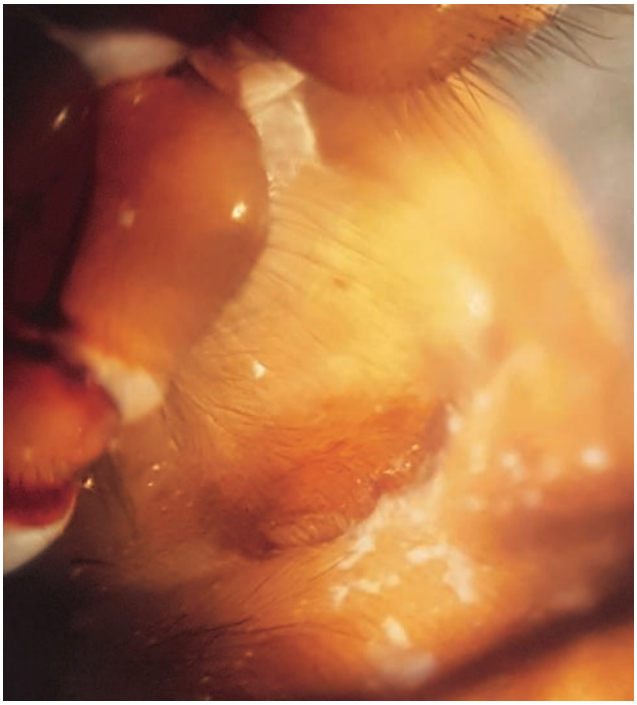

Figure 2. *Meta bourneti* epigyne. Photograph © Matt Prince.

spiders, told me she'd seen a very orange *Meta* in the furthest part of the hut which I hadn't reached. She showed me a photo of a spider lit up by torch light, that looked worthy of further attention. After consulting with Sarah, Carly and I returned briefly to collect this spider and take her outside for a better look. Checking the epigyne with a x10 lens, I found it had a very wide tongue with a central notch, a match for *M. ourneti*. I took the specimen away and confirmed the identification under a microscope. This is the first time this species has been recorded in Devon.

Clearly it is not safe to assume all species in a *Meta* colony are the same as sampled near the entrance, and this experience reinforced the fact that *M. bourneti* is easily missed, especially when time is limited due to external factors.

Thanks are due to Sarah Butcher for arranging access, and Carly Benefer for finding this 'first for Devon'.

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Ocular anomalies in spiders

by Tone Killick

I found my first spider with an eye anomaly on the 12th March 2016, a *Pisaura mirabilis* with a missing anterior median eye (Fig 1). On the 7th July 2016 I came across my second. This time it was an *Enoplognatha* sp. and the occular anomaly was quite extreme (Fig 2). One posterior median and one anterior median eye were reduced to mere dots, the other anterior median eye was greatly reduced and the other posterior median eye seemed to lack the tapetum, the reflective layer of the eye. On the 22th Jan 2018 I was wading through a storm culvert that

Figure 1. *Pisaura mirabilis* with a missing anterior median eye. Photograph © Tone Killick.

Figure 2. *Enoplognatha* sp. with quite extreme occular anomaly. Photograph © Tone Killick.

runs under the M5 in Gloucester. It's about 70 metres in length and has a large population of *Amaurobius ferox*. I collected and photographed a large female *A. ferox* but it wasn't until I uploaded the photos that I noticed that yet again I had a spider with an anomaly but this time the spider had an extra eye, just situated under one of the anterior median eyes (Fig 3). Several days later, on the 27th Jan 2018, I returned and photographed another adult female. I uploaded the photos of this new specimen and this one also had nine eyes but in this case the eye was situated just under the anterior lateral eye (Fig 4). On the 21st February 2018, a friend Matt Doogue, sent me a

Figure 3. *Amaurobius ferox* female with extra eye. Photograph © Tone Killick.

Figure 4. Another *Amaurobius ferox* female with an extra eye, in this case the eye was situated just under the anterior lateral eye. Photograph © Tone Killick.

photo that he had taken of a *Pardosa* sp. in Salford, Manchester on the 18th February 2015 (Fig 5). The specimen lacked a median anterior eye.

Figure 5. A *Pardosa* sp. which lacked a median anterior eye. Photograph © Matt Doogue.

Now this peaked my interest, just how common is ocular anomalies in spiders? It was time to wade through the literature and I found the BAS publications search engine a godsend. The earliest case that I came across was in North America of a *Callobius* sp. with missing posterior median and lateral eyes (Kaston 1936). From Japan was the case of a ground spider *Gnaphosa primorica* with two eyes, the right anterior lateral and posterior lateral eyes (Ono and Kudo 1996). From the UK, there were records of *Hylyphantes graminicola* with an extremely reduced anterior medium eye (Jones-Walters 1983), *Trochosa terricola* with only two eyes, the posterior laterals, with one of them being reduced and misshapen (Gregory 1992) and a *Philodromus dispar* with a severe anomaly in the ocular region (Kenny 1996). From 98 worldwide ocular anomalies collated (Jiménez and Llinas 2002), the highest frequency (9.3%) was related to the lack of posterior median eyes with the Lycosidae representing 20% of individuals with anomalies . What I do find interesting is that in virtually all cases, the anomaly is missing eyes not extra eyes. Hunting through the literature I found three cases of spiders with extra eyes, two *Latrodectus hespeus* spiderlings (Kaston l968.), one with 16 eyes and another with 14 eyes, though in both these cases it was accepted that the extra eyes were the result of embryonic duplication of a portion of the head region. The third case of a spider with extra eyes was an oonopid found in Essex (Ruffell and Kovoort 1992). The more I'm looking into this, the more it seems my *Amaurobius ferox* are quite the rarity.

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