

Spider Recording Scheme News

Spring 2016, No. 84

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SRS website: <http://srs.britishspiders.org.uk>

My thanks to those who have contributed to this issue. S.R.S. News No. 85 will be published in Summer 2016. Please send contributions by mid June 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.

Spider records

All spider records which are received in database friendly format can be readily imported into the SRS database and uploaded to the website using the Schemes software produced for this purpose by MapMate Ltd. This means the SRS website is always completely up-to-date for these data. Data which are not in data-friendly format unfortunately have to wait in a queue to be dealt with until time permits.

We now have 993,877 spider records in total in MapMate. About 418,898 have at least some site-based phase 2 habitat information.

Submission of records through the website

In addition to the two new 'easily recognisable' spiders pages for *Uloborus plumipes* and *Paidiscura pallens* by Geoff Oxford mentioned in the last SRS News, we are very grateful to Katty Baird, Greg Hitchcock, Dmitri Logunov and Helen Smith for producing new 'easily recognisable' species pages for the Fork-palped harvestman *Dicranopalpus ramosus*, the Nursery web spider *Pisaura mirabilis*, the 'Green-fanged tube web spider' *Segestria florentina* and the Zebra spider *Salticus scenicus*.

Area Organiser changes

Matt Prince takes over as Area Organiser for Devon (VC3 & 4) from Peter Smithers who has moved to Bristol. Matt's details are: 3 Allhallows Court, Bartholomew Street West, EXETER, Devon EX4 3BJ; email: mattprince1969@gmail.com. Peter remains as housekeeper AO for Cornwall (VC1 & 2).

Bob Merritt takes over as AO for Dumfriesshire, Kirkcudbrightshire and Wigtownshire (VCs 72, 73 & 74) from Chris Cathrine. Bob's details are: 46 Dalbeattie Road, Dumfries, DG2 7PL. MapMate cuk 9r8; email: merritt321@uwclub.net. Chris remains AO for VCs 75-71, 83, 86 and 98-102.

Many thanks to Peter Smithers and Chris Cathrine for their work with these counties. Richard Wilson takes on AO for Durham (VC66), as well as his Yorkshire and Northumberland VCs. His details are 29 Primley Park Lane, Alwoodley, Leeds, West Yorkshire LS17 7JE; email: riwspider@yahoo.co.uk

Difficult species

Many thanks to Tony Russell-Smith for producing guidance on the identification of *Drassodes cupreus* & *D. lapidosus* and *Xysticus cristatus* & *X. audax* published in this *SRS News* and on the website.

Difficult species downloads from the website, with counting in place since 25 April 2015, stand at 2,627 downloads for 17 accounts:

Taxon	Difficult Species downloads
Difficult Species-Alopecosa cuneata and pulverulenta.pdf	254
Difficult Species-Centromerita-bicolor-and-concinna.pdf	162
Difficult Species-Clubiona neglecta and Clubiona pseudoneglecta.pdf	156
Difficult Species-Clubiona-rosserae-id-guidance.pdf	150
Difficult Species-Identification of Bathyphantes gracilis and Bathyphantes parvulus.pdf	177
Difficult Species-Identification of Dysdera crocata and erythrina.pdf	165
Difficult Species-Identification of Entelecara acuminata and Entelecara congenera.pdf	134
Difficult Species-Identification of Tetragnatha extensa and Tetragnatha pinicola.pdf	173
Difficult Species-Identification-of-Dictyna-species.pdf	75
Difficult Species-Identification-of-Pardosa-lugubris-and-saltans.pdf	156
Difficult Species-Identification-of-Pelecopsis-nemoralis-and-P-nemoralioides.pdf	125
Difficult Species-Identification-of-Pocadicnemis-pumila-and-P-juncea.pdf	125
Difficult Species-Neon robustus and Neon reticulatus.pdf	142
Difficult Species-Philodromus-praedatus-and-aureolus.pdf	163
Difficult Species-Porrhomma species.pdf	147
Difficult Species-Tegenaria gigantea and saeva.pdf	167
Difficult Species-Zelotes apricorum and subterraneus.pdf	156

More records of spiders and harvestmen from Slapton Ley, Devon (Arachnida: Araneae, Opiliones)

by Davide Ruiu

A new small collection of spiders and harvestmen from Slapton Ley National Nature Reserve (Devon; see online at: <http://www.slnnr.org.uk/>) has been identified. The material was collected by Dmitri Logunov (Manchester, UK) in June 2007; litter sifting and pitfall traps were the main collecting methods. The majority of the studied specimens originated from the Slapton Woods (grid reference: SX827456) and neighbouring meadows and agricultural fields.

The collection contains 67 spider species of 16 families (see below for a list of species), of which Linyphiidae is the most diverse family. As compared to the Provisional Atlas of British spiders by Harvey *et al.* (2002) and the list of species produced by Smithers *et al.* (2005), 12 spider species are newly recorded from the site (marked in the list with *) and the records of further 21 species have not been recorded from there since 1979 (marked in the list with °). For instance, *Agelena labyrinthica* and *Robertus lividus* are rather widespread British species, but have not been recorded from this site to date. The juvenile specimen of *Ero* sp. is the first local record of the genus. Yet, *Haplodrassus dalmatensis* has been known from a few localities in southern England, and thus its continued existence at Slapton Ley seems to be important, as the species appears in decline (Spider and Harvestman Recording Scheme website, see online at: <http://srs.britishspiders.org.uk/portal.php/p/Summary/s/Haplodrassus+dalmatensis>).

The British harvestman fauna consists of 23 species of six families, plus two recent introductions (Hillyard, 2005). The collection from Slapton Ley contains four species of three families (see below). It is worth mentioning an interesting new record of the species *Anelasmacephalus cambridgei* which is known locally in the southern England and from few localities in Ireland. On the contrary, although *Phalangium opilio* is a very common and widespread species, it has not been recorded from this site since 1979.

The studied materials are shared between two museums: all spiders have been deposited in the Zoological Museum of the Moscow State University (Russia; curator – Kirill Mikhailov), while the harvestmen are in The Manchester Museum (UK; curator – Dmitri Logunov), accession number – G7553.

List of species:

Araneae - spiders

AGELENIDAE

1. *Agelena labyrinthica* (Clerck, 1757)*: 1♂ 1♀
2. *Tegenaria* sp.: 1♂

AMAUROBIIDAE

3. *Amaurobius* sp.: 1♀

ARANEIDAE

4. *Araneus diadematus* Clerck, 1757: 1♂
5. *Araniella cucurbitina* (Clerck, 1757): 2♀
6. *Larinioides cornutus* (Clerck, 1757): 1♂ 1♀

CLUBIONIDAE

7. *Clubiona pallidula* (Clerck, 1757)*: 2♂
8. *Clubiona phragmitis* C. L. Koch, 1843: 1♀
9. *Clubiona terrestris* Westring, 1851: 2♂ 1♀

DICTYNIDAE

10. *Dictyna latens* (Fabricius, 1775): 1♂
11. *Nigma puella* (Simon, 1870): 1♂

DYSDERIDAE

12. *Harpactea hombergi* (Scopoli, 1763): 2♂ 1♀

GNAPHOSIDAE

13. *Drassyllus pusillus* (C. L. Koch, 1833)°: 1♂
14. *Haplodrassus dalmatensis* (L. Koch, 1866): 1♀

HAHNIIDAE

15. *Antistea elegans* (Blackwall, 1841)°: 7♀

LYCOSIDAE

16. *Alopecosa pulverulenta* (Clerck, 1757): 2♂ 4♀
17. *Arctosa leopardus* (Sundevall, 1833): 2♂
18. *Pardosa amentata* (Clerck, 1757): 4♂
19. *Pardosa palustris* (Linnaeus, 1758)°: 58♂ 14♀
20. *Pardosa prativaga* (L. Koch, 1870): 281♂ 37♀
21. *Pardosa proxima* (C. L. Koch, 1847)°: 3♂ 18♀
22. *Pardosa pullata* (Clerck, 1757): 62♂ 56♀
23. *Pirata piraticus* (Clerck, 1757)°: 28♂ 15♀
24. *Trochosa ruricola* (De Geer, 1778): 48♂ 7♀

LINYPHIIDAE

25. *Agyneta conigera* (O. Pickard-Cambridge, 1863)°: 1♀
26. *Agyneta decora* (O. Pickard-Cambridge, 1871)*: 21♂
27. *Bathypantes approximatus* (O. Pickard-Cambridge, 1871)°: 2♀
28. *Bathypantes gracilis* (Blackwall, 1841): 6♂ 6♀
29. *Bolyphantes luteolus* (Blackwall, 1833)*: 2♀
30. *Diplocephalus picinus* (Blackwall, 1841)°: 5♀
31. *Diplostyla concolor* (Wider, 1834)°: 2♂ 1♀
32. *Erigone atra* Blackwall, 1833: 21♂
33. *Erigone dentipalpis* (Wider, 1834)°: 98♂ 4♀
34. *Gnathonarium dentatum* (Wider, 1834): 8♂ 6♀
35. *Gonatium rubellum* (Blackwall, 1841)*: 2♀
36. *Hylyphantes graminicola* (Sundevall, 1830): 1♂
37. *Hypomma bituberculatum* (Wider, 1834): 1♂ 3♀
38. *Linyphia hortensis* Sundevall, 1830: 4♀
39. *Maso sundevalli* (Westring, 1851)°: 11♂ 20♀
40. *Meioneta beata* (O. Pickard-Cambridge, 1906)*: 2♂ 1♀
41. *Microneta viaria* (Blackwall, 1841)°: 9♀
42. *Milleriana inerrans* (O. Pickard-Cambridge, 1885)°: 2♂ 1♀
43. *Neriere clathrata* Sundevall, 1830: 2♂ 1♀
44. *Neriere peltata* Wider, 1834: 4♀
45. *Oedothorax fuscus* (Blackwall, 1834)°: 110♂ 134♀
46. *Oedothorax retusus* (Westring, 1851): 64♂ 62♀
47. *Pelocopsis parallela* (Wider, 1834)°: 8♂ 3♀
48. *Pocadicnemis pumila* (Blackwall, 1841)*: 1♂ 1♀
49. *Saaristoa abnormis* (Blackwall, 1841)*: 10♂
50. *Savignia frontata* Blackwall, 1833°: 1♂
51. *Tenuiphantes flavipes* (Blackwall, 1854): 2♂ 2♀
52. *Tenuiphantes tenuis* (Blackwall, 1852): 6♂ 5♀
53. *Tenuiphantes zimmermanni* Bertkau, 1890: 25♂ 21♀
54. *Walckenaeria acuminata* Blackwall, 1833°: 7♀
55. *Walckenaeria antica* (Wider, 1834)°: 1♀
56. *Walckenaeria incisa* (O. Pickard-Cambridge, 1871)*: 1♀

MIMETIDAE

57. *Ero* sp.*: 1♂

PISAURIDAE

58. *Pisaura mirabilis* (Clerck, 1757): 4♀

SEGESTRIDAE

59. *Segestria senoculata* (Linnaeus, 1758): 1 ♀

TETRAGNATHIDAE

60. *Metellina merianae* (Scopoli, 1763): 14 ♂ 11 ♀

61. *Tetragnatha extensa* (Linnaeus, 1758): 5 ♂ 5 ♀

62. *Tetragnatha montana* Simon, 1874: 7 ♂ 13 ♀

63. *Pachygnatha clercki* Sundevall, 1823: 4 ♂ 3 ♀

64. *Pachygnatha degeeri* Sundevall, 1830: 124 ♂ 101 ♀

THERIDIIDAE

65. *Robertus lividus* (Blackwall, 1836)*: 2 ♂ 1 ♀

THOMISIDAE

66. *Ozyptila trux* (Blackwall, 1846)*: 1 ♂

67. *Xysticus cristatus* (Clerck, 1757): 1 ♀

Opiliones – harvestmen

NEMASTOMATIDAE

1. *Nemastoma bimaculatum* (Fabricius, 1775): 16 ♂ 18 ♀

PHALANGIIDAE

2. *Phalangium opilio* Linnaeus, 1758: 25 ♂ 17 ♀

3. *Platybunus triangularis* (Herbst, 1799): 1 ♂ 5 ♀

TROGULIDAE

4. *Anelasmacephalus cambridgei* (Westwood, 1874)*:
1 ex

Finally, I wish to cordially thank Dmitri Logunov, the Curator of Arthropods at the Manchester Museum, for giving me an opportunity to volunteer in the Entomology Department and to work with spiders, and also for the help with identification of some spiders listed above (Linyphiidae, in particular).

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***Ero aphana* in Leicestershire**

by Jon Daws

Graham Calow photographs wildlife across Leicestershire and uploads them to the Naturespot website. As part of his thorough identification ethos, the spiders he photographs are then dropped into alcohol and posted to me for identification. Graham found a female of *Ero aphana* (a county record) on a bush in his garden in Sapcote (SP490937) on the 27/05/2013. Nearly a year later on the 06/04/2014 he found a sub-adult male *E. aphana* again on vegetation in his garden.

On the 05/06/2015 I was contacted by Alan Semper (another Naturespot contributor) who had found a spider in his hallway at Stathern Lane, Harby SK745309 (near

Melton Mowbray). He posted the specimen to me and I was able to confirm his initial id of a female *E. aphana*.

It seems this is a suburban species, at least in Leicestershire.

Email: jon.daws1962@icloud.com

***Steatoda nobilis* in Leicestershire**

by Jon Daws

This species was first recorded within the county on the 30/07/2008, when it was found at Asda's ADC1 warehouse at Lutterworth (SP508843) (see SRS News no. 62). The second and third records were made by Graham Calow who collected this species from his garden fence, Harecroft Crescent, Sapcote (SP490937) when on the 11/07/2015 a female was found, with a male being collected on the 17/10/2015.

Just before Graham found this species in his garden I was contacted by Leicestershire's environmental health department who had a school in north-west Leicestershire that was on the verge of closing down for a few days. They believed they had found *S. nobilis* within the school grounds, with the children being in great danger, and wanted the whole area fumigated. The environmental health officer sent me a photograph taken on his mobile phone of the spider the teacher had captured. It was an adult female *Nuctenea umbratica*!

The media have a lot to answer for!

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***Minicia marginella* (Wider, 1834) (Araneae, Linyphiidae) re-recorded in the UK and a review of its known ecology**

by Richard Wilson

Introduction**Background**

Since 2013, I have had the good fortune to undertake invertebrate surveys, focussing on spiders, harvestmen and beetles, on various sites throughout the northern English uplands. These surveys have mostly focussed on UK Species of Principal Importance (= UK Biodiversity Action Plan Priority Species), including the rare money-spider *Semljicola caliginosus* (Falconer, 1910). Survey effort has therefore been focussed on mire and wet heathland communities in the Yorkshire Dales and Northumberland National Parks as well as the Border Mires which straddle modern Cumbria and Northumberland. Funding for these surveys has been obtained from Natural England's species recovery programme via Buglife – the Invertebrate Conservation Trust. However, I am grateful for some financial assistance provided by the Yorkshire Dales National Park Authority and two small grants from the British

Arachnological Society's *Conservation and Research Fund*.

During autumn 2014, and again in summer 2015, these surveys were focussed on seven sites in four vice-counties (VCs 64, 65, 67 and 70). All the habitats surveyed are within wetland communities corresponding to mire communities described in Rodwell (1991). One such location was Butterburn Flow Site of Special Scientific Interest (SSSI), which has been surveyed in both years and has resulted in a number of noteworthy species of which the re-recording of the very rare species of money-spider *Minicia marginella* (Wider, 1834) (Araneae, Linyphiidae) in the UK is reported.

Butterburn Flow

Butterburn Flow SSSI (centred on NY 673 763) occupies c. 410 hectares in a remote upland landscape (c. 300 m above sea level) in northern England, approximately 12.5 km north of Haltwhistle, Northumberland; but located within Cumbria VC 70. It is designated as an SSSI and forms part of the wider Border Mires, Kielder - Butterburn Special Area of Conservation (SAC) and the Irthinghead Mires Ramsar site for its blanket bog and raised mire communities. The dominant habitat present across much of the site is the M18 *Erica tetralix* – *Sphagnum papillosum* [cross-leaved heather – papillose bog-moss] raised and blanket mire.

The section surveyed is on the western end of this extensive site. Here, the topography subtly differs from north to south; grading from a fairly even surface with shallow pools towards a structurally complex, hummocky community with mounds of *Sphagnum*-rich vegetation.



Figure 1. Line of pitfall traps at Butterburn Flow.
Photograph © Richard Wilson

Methods and Results

In 2014, the surveys were completed during the autumn (between the 24th September and 15th October). The surveys in 2015 were undertaken in late spring and summer (between the 15th May and 9th July). In both years, five pitfall traps were installed in separate transects (see Fig. 1) reflecting the habitat's structural variation referred to above, but which also happen to be located in two different tetrads that cover this part of the SSSI. One transect was located in the north (NY 660 760; NY 67T) and the other in the south (NY 660 759; NY 67S). Vacuum sampling using a modified garden blow-vac was applied to the surface vegetation supplementing the pitfall trapping.



Figure 2. Richard Wilson vacuum sampling.



Figure 3. Rosie Earwaker (RSPB) sorting material collected by vacuum sample.
Photograph © Richard Wilson

Minicia marginella

A male and female *M. marginella* were first recorded in the UK (England) from the base of Shakespeare Cliff (TR 302 395) on the western fringes of Dover, Kent (VC 15 – East Kent) from pitfall traps set between late May and late June 1987, within calcareous grassland (Snazell, 1991). Further specimens were noted by the same author as immatures in June 1991 from the same location (Snazell, 1992). Other than these, no further records of this species have been reported from the UK.

The species has been recorded throughout Europe

Table 1: Records of *M. marginella* from Butterburn Flow SSSI in 2015

Date/ Period	Method	Location	Details
15/05 to 08/06/2015	Pitfall trap	South transect	1 female
08/06 to 09/07/2015	Pitfall trap	North transect	1 male; 1 female
15/05/2015	Vacuum sampling	North transect	4 males; 11 females
09/06/2015	Vacuum sampling	North transect	6 males; 13 females

(Nentwig *et al.*, 2016) and is described as having a Palearctic distribution (World Spider Catalog, 2015). The species has been recorded in sand dunes and associated xerophilous habitats in France (Denis, 1965), purple moor-grass (*Molinia* sp.) tussocks in the Netherlands (van Helsdingen, 1963), the edge of dwarf shrub-heath with spruce forest in the Swiss Alps at *c.* 1,950 m asl (Muff *et al.*, 2007), alpine meadows (*c.* 2,208 m asl) of the Osogovo mountain range in Macedonia, part of the Serbo-Macedonian Massif (Kommenov, 2013), alder (*Alnus glutinosa*) forest in Norway (Hauge, 1972), oak-hornbeam forests in the lesser (little) Carpathian Mountains (Malé Karpaty) of Slovakia (Krumpálová, 2005), and peat bogs in Scandinavia; for example Finland (Koponen, 2000) and Denmark (Glime & Lissner, 2013); and Ireland (Nolan, 2007). Thus, *M. marginella* has been recorded from close to sea level to alpine altitudes above 2,000 m asl in both dry and wet habitats. According to Heimar & Nentwig (1991), it is a species of warm habitats.



Figure 4. Male *Minicia marginella*.
Photograph © Jørgen Lissner

Modern Records

Sorting and identifying material collected by vacuum sample on the 24th September 2014 from the south transect, an unfamiliar small mature female spider was noted. It had a faintly striped impression, with dark margins and pale abdomen and my immediate thought was a *Hypsosinga* species (Araneae, Araneidae) that had faded due to being in a pitfall trap for an extended period. However, none of the species' epigynes readily matched so given its size, I checked the Linyphiidae (money-spiders) in Roberts (1993) and failed to find even a



Figure 5. Female *Minicia marginella*.
Photograph © Jørgen Lissner

remotely similar species. Completely forgetting the appendix, which may well have solved my dilemma as well as causing significant excitement, I retained the specimen for Peter Harvey's attention. Peter subsequently wrote back to say that the specimen was a female *M. marginella*, which was subsequently confirmed by Peter Merrett.

A second round of surveys at Butterburn Flow SSSI was funded in 2015, with the continued objective of surveying for *S. caliginosus*. However, now with the knowledge that *M. marginella* was also potentially present at this site, it was hoped that the late spring and summer surveys would record this species. It is therefore pleasing to report that 11 males and 26 females were collected in 2015; the details are provided in Table 1.

Other noteworthy species recorded from the mire proper (i.e. excluding the drier margins) have included two nationally notable species: *Clubiona norvegica* (in 2015) and *Notioscopus sarcinatus* (2014); and a number of scarce or declining species including *Araeoncus crassiceps* (2015), *Gongylidiellum latebricola* (in 2015), *Latithorax faustus* (2014), *Hilaira excisa* (2015), *Sintula conigera* (2014 & 2015) and *Talavera aequipes* (2015). However, to date, no further specimens of *S. caliginosus* have been collected. A total of 60 species have been recorded from the mire itself and a further 15 species from its drier margins.

In addition to Butterburn Flow SSSI, surveys were undertaken concurrently on a nearby mire at Coom Rigg Moss (NY 688 792), part of the Kielder Mires SSSI and National Nature Reserve. The habitats were similar, though not identical to Butterburn Flow SSSI, with abundant *Sphagnum*, heather (*Calluna vulgaris*), cross-

leaved heather (*Erica tetralix*) and crowberry (*Empetrum nigrum*) forming a hummocky structure. Nevertheless, *M. marginella* has only been recorded from Butterburn Flow, despite it being one of a series of mires in this area.

Review of its Ecology

M. marginella has been recorded within a range of habitats from sea-level to alpine meadows and from open (e.g. sand dunes) to enclosed (e.g. woodland) habitats. From the literature search undertaken, its presence in mire communities is not unusual; having been recorded from such vegetation communities in Finland (Koponen, 2000; Matveinen-Huju, 2004), Denmark (Glime & Lissner, 2013) and the Republic of Ireland (Eire) (Nolan, 2007).

In Denmark, Glime & Lissner (2013) state that "... this species is found only in acidic *Sphagnum* bogs and fens where it appears to prefer the drier (upper) portions of hummocks or drier bogs such as degraded raised bogs. It can be sifted from mosses such as *Polytrichum strictum* and *P. commune*." In Finland, it has been collected from blanket mire communities ("*Myrica-Molinia* bogs") (Matveinen-Huju, 2004) and raised mire communities where *Sphagnum*, *Eriophorum* and *Carex* species dominate (Koponen, 2000). Unfortunately, no details are provided by Matveinen-Huju (2004) as to the structure of the habitat where *M. marginella* was recorded. Muff *et al.* (2007) states that the dwarf shrub-heath where *M. marginella* was most frequently recorded was in an open area, away from the adjacent canopy of the spruce forest and therefore more exposed to the sun. The Irish specimens were swept from taller vegetation within a raised bog. Subsequent e-mail correspondence with Myles Nolan has reiterated this species' apparent preference for taller vegetation as observed in the Danish bogs (Glime & Lissner, 2013).

Summary

Survey work in 2014 and 2015 has clearly demonstrated that there is an established population of the very rare money-spider *M. marginella* within Butterburn Flow SSSI. The species has been recorded in hummocky and relatively flat mire vegetation which is permanently wet and conforms to the M18 raised and blanket mire community described by Rodwell (1991).

Similar survey work undertaken concurrently with that on Butterburn Flow SSSI on the adjacent Coom Rigg Moss, part of the Kielder Mires SSSI complex, failed to record this species. Differences between the two sites are difficult to quantify as there have been limited, if any, detailed surveys of either site covering vegetation communities or structure (Emma Austin & Heather Brittlebank, Natural England e-mail correspondence) enabling a more detailed comparison. So why the species has only been recorded at one location is only open to conjecture at this stage.

Further Work

Within the Kielder Forest, there are a number of raised and blanket mire sites that would be worthy of further survey; for *M. marginella* and also *S. caliginosus*. The whole area is significantly under-recorded, which is likely due to the isolation from the smallest of hamlets and even the public highway. Useful survey work covering botanical as well as entomological disciplines

would be of significant benefit to understanding the upland ecology of this remote and beautiful landscape.

Acknowledgements

Richard Wilson would like to thank Dr. Sarah Henshall (Buglife – The Invertebrate Conservation Trust) for securing the funding and commissioning the Border Mires survey work in 2014 and 2015; the BAS Conservation Committee for awarding some money from the Conservation and Research Fund; Rosie Earwaker (RSPB), Rory Dimond and David Bodenham for assisting with surveys on site; the Forestry Commission (Tom Dearnley) for granting permission and access to the sites and Natural England staff (David Heaver, Emma Austin and Heather Brittlebank (née York)) for contacting landowners and providing additional information. Thanks to Jørgen Lissner (<http://www.jorgenlissner.dk/>) for giving permission to use his photos of *M. marginella*.

Finally, thanks to Peter Harvey and Peter Merrett for identifying the first specimen of *M. marginella* collected in 2014. The 2014 specimen resides in Peter Harvey's personal collection. All specimens collected in 2015 have been retained in the author's collection.

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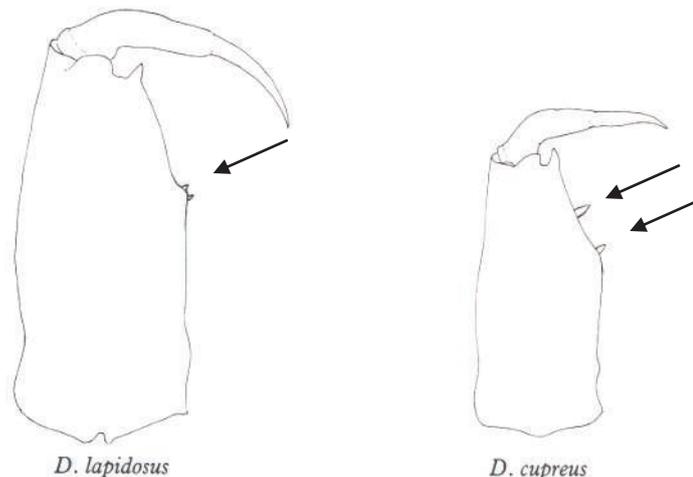
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Identification of *Drassodes cupreus* and *D. lapidosus*

These two species closely resemble each other and until fairly recently were treated as sub-species of *Drassodes lapidosus*. They are among the most widespread and common species of ground spiders in Britain but distinguishing them requires care.

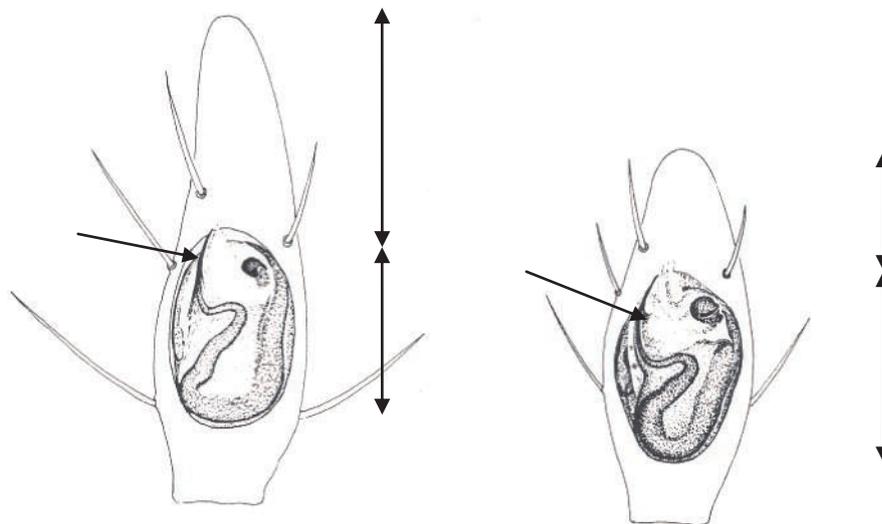
Males

Probably the most useful distinction between males of the two species lies in the dentition of the chelicerae. In *Drassodes cupreus* there are two large, well separated teeth on the cheliceral retromargin while in *D. lapidosus* there are a pair of very small, closely-placed teeth near the base of the cheliceral retromargin.



Male chelicerae of *Drassodes lapidosus* and *D. cupreus*. Arrows show cheliceral dentition.

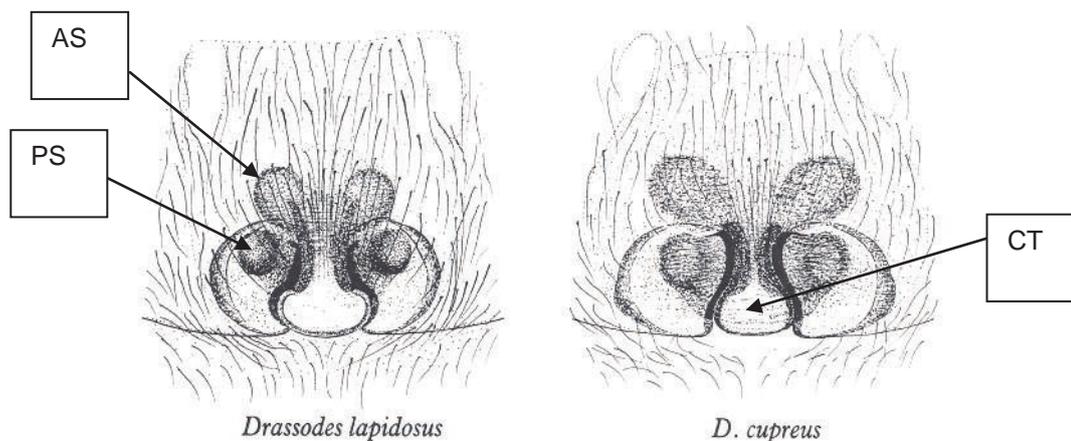
When viewed laterally, the palpal organs of both species are closely similar and any small differences in the form of the tibial apophysis of the two species are difficult to discern. Males of the two species are more easily distinguished when the palps are viewed ventrally. The cymbium of *Drassodes lapidosus* is longer than that of *D. cupreus*, with the distal portion longer than or at least the same length as the alveolus of the tegulum while in *D. cupreus* it is shorter than the alveolus. The embolus of *D. lapidosus* is straighter and somewhat shorter than that of *D. cupreus* although it is necessary to have both species side by side to appreciate the differences.



Palps of *Drassodes lapidosus* (left) and *D. cupreus* viewed ventrally. Arrows indicate the embolus. Note relative proportion of the length of the distal part of the cymbium to that of the tegulum.

Females

The epigynes of both species are somewhat variable and it is always important to compare those of isolated females with reliably identified voucher specimens. Diagnostic features include firstly the relative width of the two pairs of spermathecae which are visible in the uncleared epigyne. In *Drassodes lapidosus* the width across the anterior pair is smaller than that across the posterior pair while the reverse is the case in *D. cupreus*. Secondly, in *D. lapidosus* the width of the posterior part of the central tongue-like process is greater relative to the total width of the epigyne than is the case in *D. cupreus*.



Epigynes of *Drassodes lapidosus* and *D. cupreus* viewed ventrally.

Abbreviations: AS = anterior spermathecae, PS = posterior spermathecae, CT = central tongue-like process.

Habitats

Drassodes cupreus is found fairly commonly throughout Britain. It has one of the widest semi-natural habitat spectra of any ground active-spider being found with almost equal frequency in grasslands, heathland, moorland, wetlands and open habitats in woodlands, as well as many different coastal habitats. *Drassodes lapidosus* is by contrast much more common in the southern half of the country, with a patchy and very scattered distribution from Northumberland northwards. It is generally found under stones in dry habitats and is often synanthropic, occurring around buildings, in gardens and post-industrial sites. It is also often frequent on coastal shingle and sand-dunes from which almost a quarter of records in the SRS database are taken.

Acknowledgements. Michael Roberts is gratefully acknowledged for permission to reproduce the figures taken from "The spiders of Britain & Ireland" (1987). Peter Merrett provided helpful comments on a first draft of this account. The information on habitats is taken from the Spider Recording Scheme database (<http://srs.britishspiders.org.uk>).

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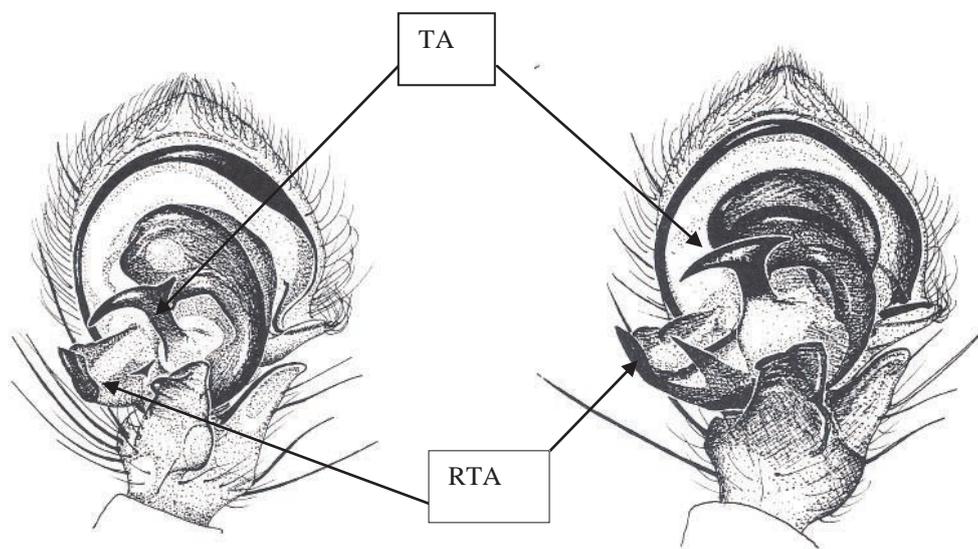
Identification of *Xysticus cristatus* and *Xysticus audax*

These two closely-related crab spiders (possibly sister species) require careful examination to distinguish them.

A useful character in both sexes of these two species is the central wedge-shaped mark on the carapace. In *Xysticus cristatus*, this extends further back on the carapace and ends in a well defined darker point. In *X. audax* it is relatively short and does not end in a clearly defined darker point. The difference is illustrated well in photographs on the Eurospiders.com website: http://www.eurospiders.com/Xysticus_audax.htm and http://www.eurospiders.com/Xysticus_cristatus.htm.

Males

When viewed ventrally, the tegular apophysis of the male palp of both species is approximately T-shaped, with one arm of the crossbar on the T shorter than the other. In *Xysticus cristatus* there is a slight indentation in the curved upper side of the crossbar while in *X. audax* this is absent. Likewise, in *X. cristatus* the retrolateral tibial apophysis appears as a rectangular structure which is truncated on its exterior margin. By contrast, the RTA in *X. audax* appears to have two sharply pointed structures directed somewhat anteriorly.

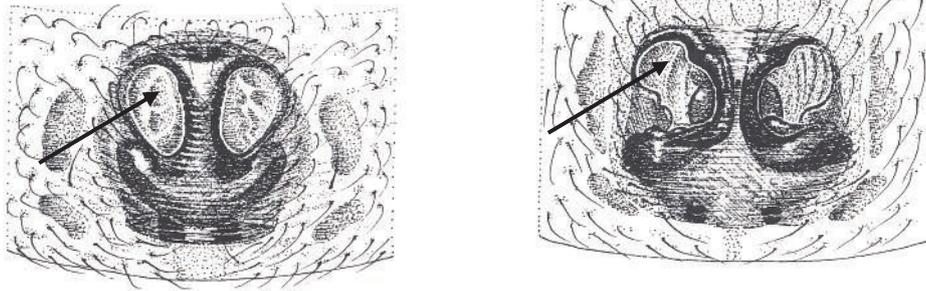


Male palp of *Xysticus cristatus* (left) and *X. audax* in ventral view.
TA = tegular apophysis, RTA = retrolateral tibial apophysis.

Females

In both species, the epigynes are occasionally obscured by a waxy plug secreted by the male to ensure no subsequent mating by a second male is possible. In such cases, it may be necessary to rely on the carapace pattern to separate the species. In females of both species the epigynes viewed ventrally share the same basic structure with two more or less oval depressions or atria separated by a broad vertical dark band. Beneath these atria there are further dark structures visible through the cuticle. In *Xysticus cristatus*, the margins of the atria are approximately egg-shaped, with the pointed end of the egg directed posteriorly. The margins of the atria in *X. audax* are irregular in shape, with a slight constriction at the mid-point giving them a more kidney-shaped appearance.

A very much more detailed account of the differences between these two species is provided by Jantscher (2001).



Female epigyne of *Xysticus cristatus* (left) and *X. audax* in ventral view.

Habitats

Xysticus cristatus is one of our commonest and most widespread species which occurs in a wide range of open habitats, including grasslands, heathland, wetlands, most maritime habitats as well as human influenced biotopes such as gardens and post-industrial sites. It is, however, intolerant of shade and largely absent from woodlands and other heavily shaded habitats. *Xysticus audax* is by contrast a much less frequently encountered species almost confined to the southern half of the British Isles. It is almost always found on gorse and heather on heathland, normally at a higher level in the vegetation than *X. cristatus*.

Acknowledgements

Thanks are due to Michael Roberts for permission to reproduce the figures taken from "The spiders of Britain & Ireland" (1987). The information on habitats is from the Spider Recording Scheme database (<http://srs.britishspiders.org.uk>).

Reference

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