

Spider Recording Scheme News

November 2008, No. 62

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My thanks to those who have contributed to this issue. S.R.S. News No. 63 will be published in March 2009. 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

I would like to make a plea to all recorders for contributions to the newsletter – articles are usually from a small band of regular contributors, but there must be many more active arachnologists out there who regularly find interesting spiders or make observations that would be of interest to others. It is always interesting to read about the spider fauna in different parts of the country and I am sure members would value a regular section in the Newsletter which was a "regional roundup", and which provided news from either particular counties or parts of the country. So, if you can contribute a short article about spiders in your area (be it a single county or group of counties) even once a year, it would make the newsletter much more interesting for everyone. The articles could include not just information on rare species but also new records for the area, comments on apparent changes in frequency or distribution of species, pleas for information, reports of field meetings, requests for records from under-recorded squares and so on.

Guidance to help in the identification of *Tegenaria saeva/gigantea* has been provided by Geoff Oxford, *Porrhomma* and *Zelotes apricorum/subterraneus* have been completed by Tony Russell-Smith and I have covered *Alopecosa cuneata/pulverulenta* and *Dysdera crocata/erythrina*, both species pairs where misidentifications seem a fairly regular problem. These 5 sets of difficult species guidance should now be available on the BAS website as downloadable pdf files. More guidance on difficult species identification will be added as it becomes available. We also start including this information in the SRS News with two items in this issue.

I would like to reiterate the general need to keep voucher specimens for all but a small number of easily recognisable spiders. The importance of voucher specimens was set out in the Phase 2 booklet provided to all BAS members in 2002 and available for download from the BAS website. Page 6 of this booklet under *Verification and voucher specimens* explains that "Recorders should normally retain all specimens. This enables valuable information to be obtained when, for example, it is realised that what had been regarded as a single species is, in fact, composed of two or more species (e.g. as with *Enoplognatha ovata/latimana*, *Meioneta saxatilis/mossica*, *Walckenaeria antica/alticeps*). A collection should be organised along the lines recommended by John Cooke in the *Bulletin of the British Spider Study Group*, 32: 1-3. Voucher specimens are needed to ensure that no errors are made in identifying the species. This problem tends to be greater for the rarer species because collectors/recorders do not have many

specimens with which to make comparisons. In almost all cases, specimens can be collected without making any significant difference to the population: collecting has a minute impact compared with natural mortalities and the loss of habitat to unsympathetic management, modern agricultural practices and various land developments".

Individual species may be retained in separate tubes as a reference collection, but for general purposes if all specimens collected at one site on the same date are kept together in one tube, with details written in alcohol-proof ink or pencil on a label placed inside the tube, and a system of numbering tubes is used to allow easy location and access, then the storage of such material should not be too difficult or take up too much space. If there is then any need in the future to re-examine specimens, the vouchers are available. The use of polypropylene tubes detailed in the Members Handbook is strongly recommended so that evaporation of alcohol is not a problem.

After incorporating feedback received from arachnologists we intend to complete revision of the national status of spiders and hope that the final review can be published by early next year.

Diplocephalus graecus (O. P.-Cambridge, 1872) new to Britain

by Richard Price¹ and Tony Russell-Smith²

During a visit to Fowlmead Country Park near Deal in Kent (Grid Ref. TR 365538) on 31st May 2008, Richard Price carried out vacuum sampling on an area of well vegetated coal shale. This park has been developed on what was originally the coal spoil heap for Betteshanger Colliery which ceased operation in 1989. The vegetation consisted mainly of a mixture of short grasses and bird's foot trefoil (*Lotus corniculatus*). Among the spiders collected was a small male erigonine which was sent by Richard to Tony for identification. The specimen did not correspond to any species in Roberts and was then sent to John Murphy who commented that it was closest to *Diplocephalus protuberans* in the British fauna but was certainly not that species. Investigation of the literature on *Diplocephalus* led Tony to a paper by Robert Bosmans on Linyphiidae of N. Africa (Bosmans, 1996). The figures of the male palp and cephalic lobe of *Diplocephalus graecus* appeared to correspond reasonably with those of the specimen collected. The specimen was then sent to Peter Merrett who confirmed the identification. A further visit

to the site was organised on 27th September 2008 when a small group of BAS members, comprising David Carr, Peter Harvey, Ken Hill, Richard Price and Tony Russell-Smith, carried out a short survey for spiders. On this occasion two more males were collected by Richard using the vacuum sampler in lichen-rich grassland in a small clearing in a planted Holm oak (*Quercus ilex*) woodland, confirming that a viable population exists at this site.

Bosmans (*op. cit.*) comments that this species is one of the commonest erigonines in the Mediterranean region and often occurs in man-made or man influenced habitats. For some 20 years it appears to have been spreading northwards in Europe, having been recorded in France (as far north as Paris) and Eastern Europe (Romania and Bulgaria). More recently, *D. graecus* was collected by Bonte *et al.* (2002) on sand dunes in southern Belgium where it appeared to be reasonably common at Westhoek dune reserve at De Panne (approximately 10 km N.E. of Dunkerque in France) in 1999 and 2000. The species was always found in thermophilous habitats including grey dunes, dune slacks and short dune grassland. Given the relative proximity of the Belgian coast, its rapid spread northwards in Europe and the thermophilous man-made habitat at Fowlmead, its presence there is perhaps not totally surprising. It is also not impossible that in future it might be found on the dunes at Sandwich Bay which lie only a mile to the N.E. of Fowlmead.

A full description of *Diplocephalus graecus* will be published in future a edition of the Bulletin.

Acknowledgements

We express our grateful thanks to Mark Kilmurray for permission to collect at Fowlmead and to John Murphy and Peter Merrett for their help with identification.

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Steatoda nobilis in Leicestershire

by Jon Daws

At just after 01:30am, on the 29/07/2008 a large spider was noted on the side of a double decker portacabin that stands outside of the main transport offices of Asda's

ADC1 warehouse, Lutterworth, Leicestershire. The spider had come out of its retreat, which lay behind a plastic drainpipe, and was adding silk to its tangled web. An attempt to capture the specimen, using plastic wrap (a much thicker and stronger version of cling-film) was unsuccessful.

The spider, which was obviously female, looked like a large *Steatoda* sp. but not one that seemed familiar. The following evening a much better prepared arachnologist returned with pooter, specimen tube and torch and within a couple of minutes had collected two specimens. A few days later a visit to a microscope at Leicester's New Walk Museum confirmed the specimens as a female and a sub-adult female *Steatoda nobilis*. Fortunately further visits have revealed that there are more immature and sub-adult *S. nobilis* present, with their retreats either behind drainpipes or in holes.

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Philodromus margaritatus in Glen Moriston, Inverness-shire

by Jane Bowman

On June 17th 2008 I visited a 2 acre area of ground near Dundreggan reservoir, upper Glen Moriston which has invariably produced some interesting finds for me. This spring one of these was *Philodromus margaritatus* basking on the bee hives which are abandoned there.

The land is extremely dry, the rock spoil from tunnelling work during dam and tunnel construction having been dumped here many years ago. The ground is now mainly covered in grass, flowers, broom, juniper, heather, native scrub trees with a mature commercial plantation adjacent to the land. There are good stands of ancient birch and Caledonian pine in the area. Half the bee hives were occupied though untended and the profusion of nesting honey bees seems to attract a wide range of insects. I was investigating the ants that were entering an unoccupied hive (these proved to be *Formica sanguinea*) when I spotted the spider on the side of the hive. Having very little knowledge of spiders but suspecting it was a



Philodromus margaritatus. Photograph © Jane Bowman



Habitat with bee hives where *Philodromus margaritatus* was found. Photograph © Jane Bowman

species of crab spider, I emailed a photo to Highland Biological Recording Group to be passed on to Peter Harvey, who identified it as *Philodromus margaritatus*.

I re-visited the site the next day not expecting to see the spider again, but there she was in exactly the same spot: south-facing side of the hive in a slight niche, with an overhanging metal strip immediately above her. She remained inert, despite being peered at closely through a x5 magnifying lens, her colouring offering no degree of camouflage. However she had begun to spin an egg sac so I was hopeful that I'd eventually find spiderlings.

Initially I visited her daily, observing her behaviour: she was always completely inert, apart from turning round presumably during the night! On June 20th there was an overnight frost and the egg sac 'gauze' was substantially thicker, she was straddling the sac as usual, other than that there was still no movement or attempts to catch prey; she was also minus leg IV on the left. I also felt she and her egg sac were quite conspicuous. The weather warmed up considerably over the next few days and she had moved off the egg sac and tucked herself under the over-hanging metal strip in shade; this south side of the hive was very hot indeed. Monitoring her regularly over the next few weeks during different weather conditions I was interested to see the changes in her behaviour. Rainy days she would be close to the egg sac; cold, wind-driven rain saw her flattened over the sac, and the hottest of days her body was slightly arched forming a 'tent' for shade.

These behavioural trends continued throughout July and August. By Aug 4th another leg was lost, she was beginning to appear emaciated, and the only movement I witnessed was leg 1 wafting at a bee which was within reach. The hive had been colonised by early Aug. so it was more difficult to observe her closely. However sadly

on my Aug. 22nd visit she had disappeared leaving the egg sac still appearing intact. I'd seen dark specks within the egg sac which I was convinced were developing spiderlings. Despite searching the area for any other 'relations' I disappointingly found none. My final visit was mid October when most of the bees had gone and I was able to peel back the gauze covering and photograph the inside of the egg sac. I was amazed and elated when the cropped photo appeared on the screen and I saw that there appeared to be many 'moultings.'



**Spiderling moultings in October.
Photograph © Jane Bowman**

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***Ero aphana* (Walckenaer, 1802) new to Devon**

by Chris Woolley

On June 28th a spider observed on the wall behind the kettle in my kitchen was photographed and later confirmed by Peter Harvey as being a female *Ero aphana* (Mimetidae). The spider was found near the village of Chudleigh Knighton (SX837767) approximately 16km southwest of Exeter and 3km east of the Dartmoor National Park boundary near Bovey Tracey. This is the furthest west record of *E. aphana* so far. *E. aphana* has previously been recorded from Dorset, Hampshire, Surrey, Essex, Middlesex and Hertfordshire, as well as Berkshire, East Sussex and Bedfordshire (P. Harvey, pers. comm.) with a single northern record from Nottinghamshire (Binding, 2006).

In common with one of the sites of *E. aphana* in Essex (Harvey & Hopkin, 2003), this area of Devon has a history of extensive quarrying, with clay being actively extracted from a number of quarries in the vicinity. Several fragmented, damp lowland heath sites are also in close proximity. Chudleigh Knighton Heath is adjacent to my house and the Bovey Heathfield Reserve is nearby. Both sites are known for their populations of the rare narrow-headed ant *Formica exsecta*. Coniferous plantations of scots pine and spruce in various stages are also in the area with gorse being widespread. This find may indicate that either this species has been unrecorded and present here for some time, or has recently expanded its range westwards. Perhaps the wetter climate in Devon presents no hindrance to its establishment here, and further active searching may indicate whether a sizeable population exists.

***Ero aphana*. Photograph © Chris Woolley****References**

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Oonops pulcher*, a commensal of *Amaurobius

by Peter Harvey

I am very grateful to Michael Roberts for providing the information given here and to John Murphy for passing this on to me and suggesting that I should write a note in the newsletter to spur our active (and inactive!) spider recorders into action.

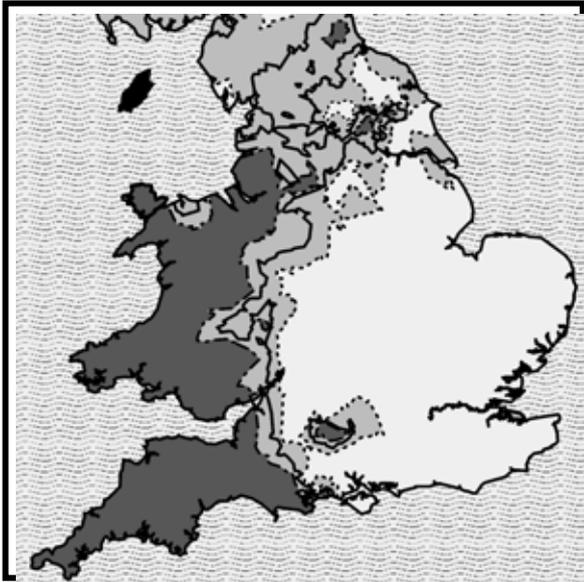
Michael Roberts writes that *Oonops pulcher* lives as a commensal with *Amaurobius fenestralis*, *Amaurobius similis* and occasionally with *Coelotes* and *Tegenaria* species. He remembers in great detail about peeling away the bark, the *Amaurobius* scurrying away leaving the *Oonops* not sure where to go; *Oonops pulcher* with beautiful oval eyes. The advice is to beat ivy, but only those patches where cribellate *Amaurobius* webs are in evidence. Look under bark, stones, ivy with evidence of cribellate webs at the edges. Hook out cribellate webs of *A. fenestralis* and *A. similis* including the retreat. Then look through all the debris within the web; *Oonops pulcher* may well have spun a retreat in that fragment of leaf, carapace, coxa or in any manner of accumulated junk. Finally go out with a torch in the dead of night. The *Amaurobius* will be out in force, but will scurry rapidly into their retreats as the torchlight hits them. The *Oonops* may also be moving about on or near the web. But there is a curious thing here. When hit by the light, the *Amaurobius* shoots into its retreat pronto; the *Oonops*, despite their amazing speed seem not to know where to go, or indeed whether to go at all!

Oonops pulcher as a commensal with *Amaurobius similis* and *A. fenestralis* is particularly interesting in relation to the un-named oonopid *Orchestina* sp.?, discovered by Ray Ruffell in 1992 from an ivy covered wall in N. Essex and last collected in 1994, when the ivy habitat was then cut. Searching for oonopids as commensals in such habitats might prove not only to enlighten our knowledge of the distribution of *O. pulcher*, but also might discover an extant population of the mystery *Orchestina* sp.? – don't miss an opportunity! Investigate ivy and stones which have not been disturbed for some time; ivy on churches or neglected ivy on old walls and of course under suitable bark and stones.

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Identification of *Tegenaria gigantea* and *T. saeva*

Over much of central and southern England and Wales, these species are readily separated. The difficulty comes in the regions where the species distributions overlap because here they can hybridise and first generation hybrids may backcross to the parental species producing a graded series of intermediates. The map below shows interpolated 'contour' lines indicating the major zones of overlap, and thus the areas from which spiders with intermediate morphologies may be found. It is important to note that hybrids may occasionally be found well away from the overlap zones as a result of human transportation of one species into the area occupied by the other.



GIS-interpolated map showing areas of England and Wales where *T. saeva* is estimated to occur at a frequency of > 0.78 (dark grey), < 0.22 (white) and between 0.22 and 0.78 (light grey). The dark lines within the light grey areas are where the two species are predicted to occur at equal frequency.

Map reproduced from Croucher *et al.* (2007)

Diagnostic features - males

The figures below show lateral views of the tegulum (T) and 'conductor' (C) of typical *T. saeva* (Fig. a) and *T. gigantea* (Fig. b) from geographical areas well away from the overlap zone. The palps are oriented so that the embolus (E) is just visible. *T. saeva* has an almost 90 degree angle to the lower (as shown here) edge of the tegulum + conductor and the distal point of the conductor ('beak') is narrow (arrowed). In *T. gigantea*, the conductor merges seamlessly into the tegulum with no sharp lower angle, and the 'beak' is much wider and merges more gradually into the body of the conductor.

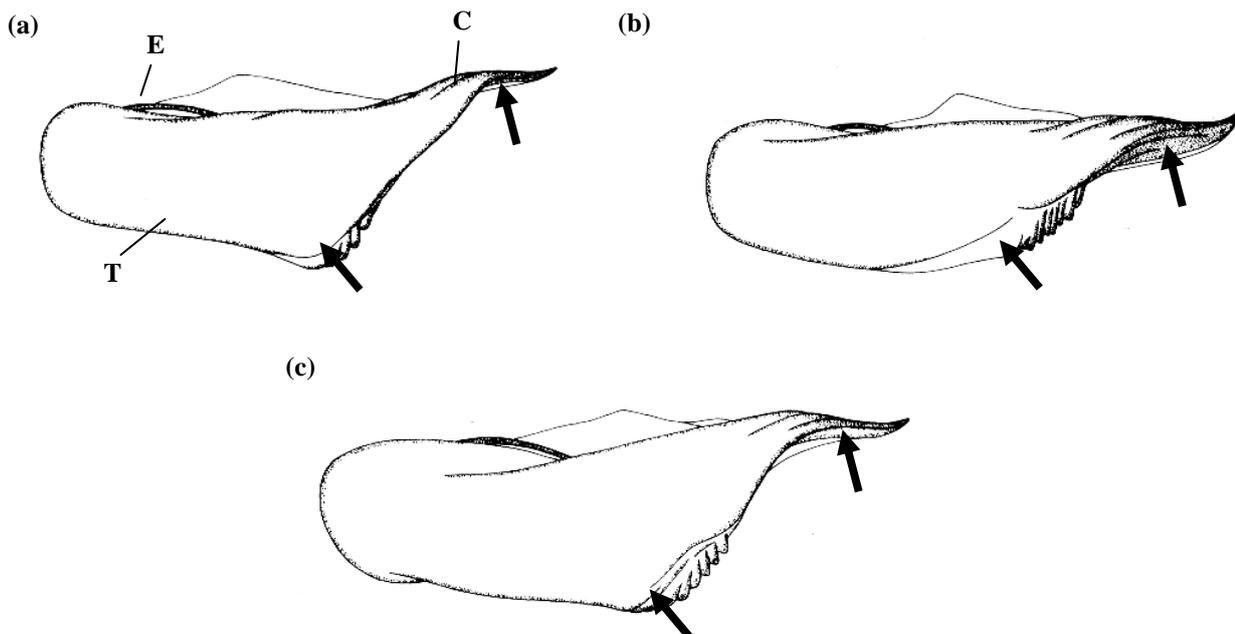
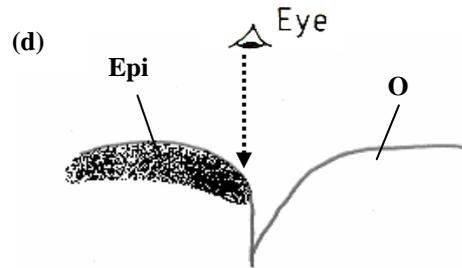


Figure c shows a probably hybrid male in which both the 'beak' and, to a lesser extent, the lower angle are intermediate between 'good' *T. saeva* and *T. gigantea*. In judging the lower angle, the fluted features (above and to the right of the lower arrows) are ignored. Putative hybrids frequently show the 90 degree lower angle of *T. saeva* but the wide 'beak' characteristic of *T. gigantea*.

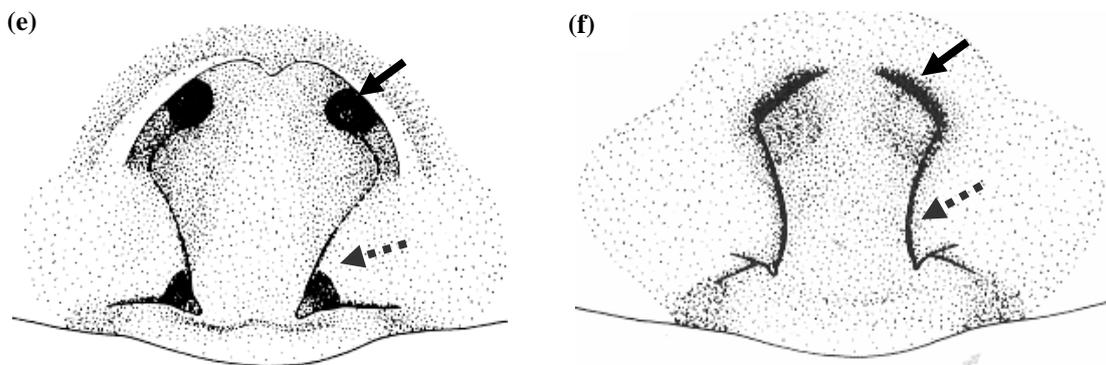
Diagnostic features - females

Females are generally somewhat more difficult to distinguish than males. Orientation is absolutely crucial. The epigyne is angled so that the anterior, inner surface of the epigastric fold is exactly vertical i.e. in line with the viewing angle (Fig. d).

Figure d. Schematic lateral view of the female ventral surface showing the epigyne area (Epi) and the opisthosoma (O), with the epigastric fold in between. The correct viewing angle is shown by the dotted arrow.



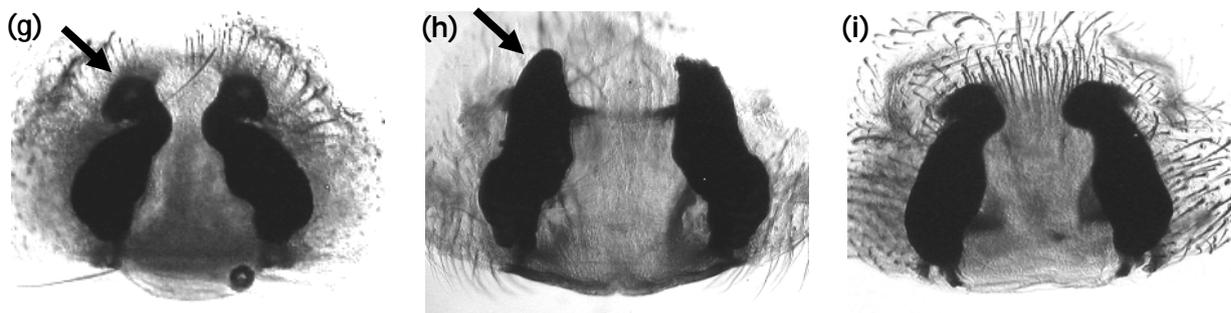
Typical ventral views of epigynes are shown below for *T. saeva* (Fig. e) and *T. gigantea* (Fig. f).



In *T. saeva* (Fig. e), when oriented as in Fig. d, the openings to the spermathecae are seen as full, circular dark spots (solid arrow) and without a strongly sclerotised anterior arch. In *T. gigantea* (Fig. f), the openings of the spermathecae are much more oblique and, when oriented correctly, appear as narrow slits (solid arrow). There is also a strong, sclerotised anterior arch over each slit that often join in the mid-line. Note that if viewed obliquely from behind, the openings to the spermatheca in *T. gigantea* are also fully visible and round, hence the need for careful, and consistent, positioning. Roberts (1995) mentions the shape of the apophyses (dotted arrows) as having diagnostic value, but this is not very reliable.

In first-generation hybrid females, the openings to the spermathecae are intermediate between the situations described above, i.e. they appear as half-occluded circles. The degree of sclerotisation of the anterior arch in hybrids is variable. Of course, because of backcrossing into the parent species, all grades of intermediates with respect to this character may be encountered.

The relative orientation of the spermathecae, when viewed dorsally in cleared material, also helps to distinguish the species. In *T. saeva*, the spermathecae strongly converge towards the anterior end; whereas in *T. gigantea* they remain roughly parallel (Figs g and h, respectively). Quantifying this difference is problematic because of the considerable variation in the details of spermathecal shape between individuals. The direction of twist of the anterior end of the spermathecae also seems to differ. In *T. saeva* the twist is strongly outwards (Fig. g, arrow), whereas in *T. gigantea* it is weakly inwards or shows no discernible twist at all (Fig. h, arrow). In hybrids the spermathecal morphology is intermediate (Fig. i)



All line drawings, except for Fig. d, are modified from Merrett (1980).

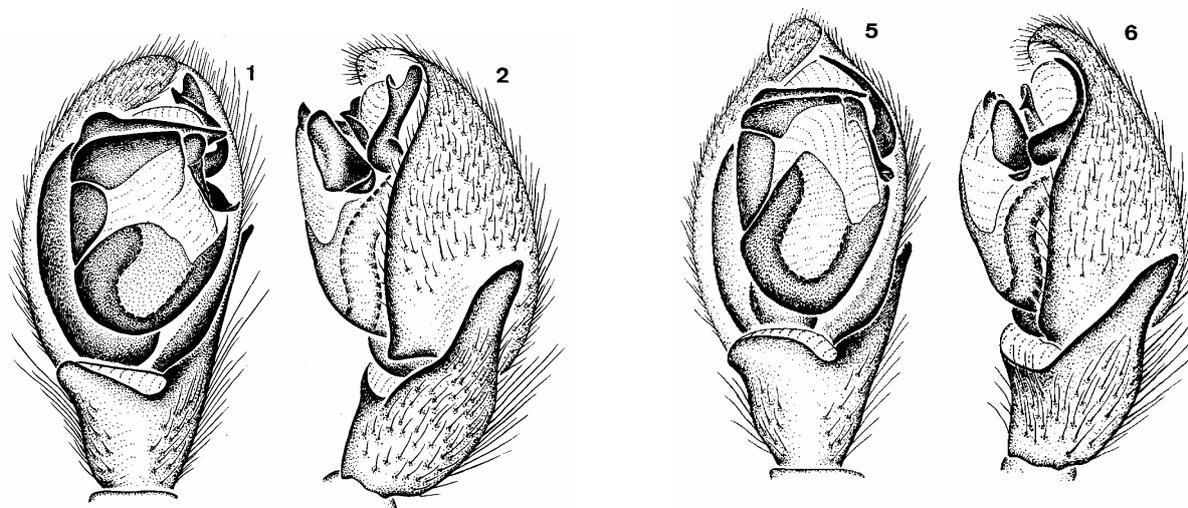
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Author: Geoff Oxford

Identification of *Zelotes apricorum* and *Z. subterraneus*

These are the only two *Zelotes* species in the British fauna that are likely to be confused. Males can be distinguished with little difficulty by reference to the tip of the embolus. Although this can be seen in both ventral and ecto-lateral view, in practice it is best seen if the palp is rotated approximately 45° away from the horizontal and viewed from slightly anteriorly. Although this is easier if the palp is dissected from the cephalothorax it is not normally essential to do so. In *Z. apricorum*, the tip of the embolus has a prominent flange ventrally near the tip which is clearly rounded. This gives the end of the embolus a Y-shaped appearance (Figs. 1 & 2). By contrast, in *Z. subterraneus* has no flange and is smoothly curved and tapered towards the tip, giving it a characteristic sickle-shaped appearance (Figs. 5 & 6).



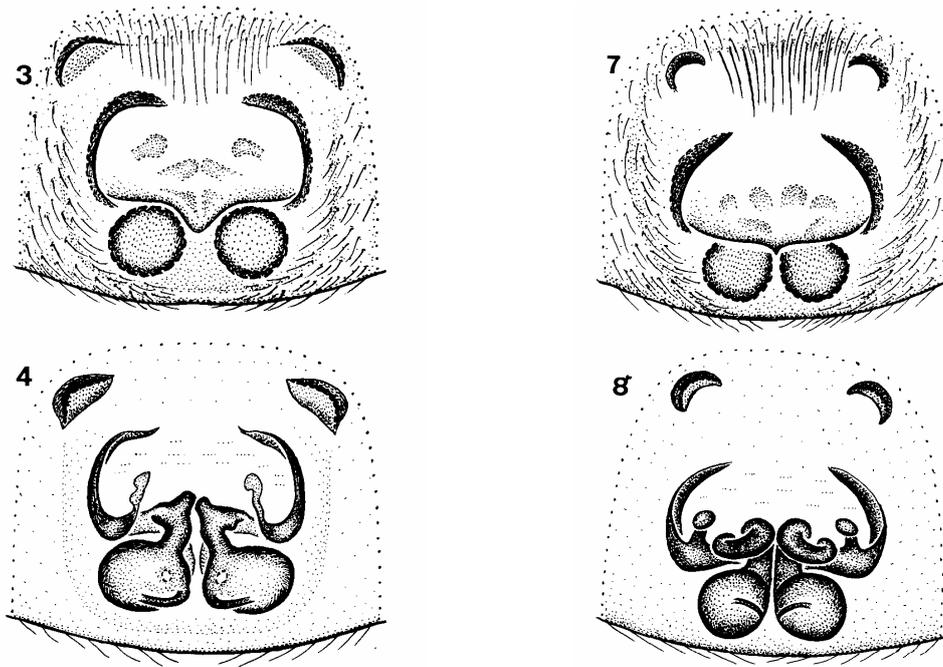
Zelotes apricorum.

Male palp ventral and ecto-lateral

Zelotes subterraneus

Male palp ventral and ecto-lateral

Females of the two species, by contrast, are very much more difficult to distinguish and the only reliable characters are the internal ducts of the dissected epigyne. In the dorsal aspect of the epigyne of *Z. apricorum*, the median epigynal ducts are simple and unlooped (Fig. 4). In *Z. subterraneus*, there is a clear additional loop in these ducts (Fig. 8). It should be noted that the appearance of the external epigyne varies in both species and cannot be used to reliably distinguish them.



Zelotes apricorum. 3. Epigyne ventral
4. Epigyne dorsal.

Zelotes subterraneus. 7. Epigyne ventral,
8. Epigyne dorsal.

An additional complication with these species is that, in some coastal populations, there is evidence for hybridisation between the two species, with some specimens showing characters intermediate between those illustrated here (Murphy & Platnick, 1986). However, out of a series of 93 specimens examined by these authors, only 25% showed clear signs of introgression between the species.

Habitats. *Zelotes apricorum* has a very wide range of habitats in Britain, but prefers warm, relatively dry situations. It is found in both calcareous and acid grasslands, coastal shingle (where it is often abundant), heathland and even open woodland. It is virtually absent from the mountains of Scotland and in northern England is almost confined to the western side of the central pennines (Harvey *et al.*, 2002).

Z. subterraneus has so far been found in two types of habitat in the UK, under stones on mountains in northern England and central and eastern Scotland and in coastal habitats (most often shingle) in the south-east (see map on p. 328, Harvey *et al.*, *op.cit*). However, because of the strong possibility that *Z. subterraneus* has been confused with *Z. apricorum* in the past, it is possible that it will eventually be found to occur in a wider range of habitats.

Figures are from Murphy & Platnick (1986).

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