

***Lepthyphantes antroniensis* Schenkel, a spider new to Britain (Araneae: Linyphiidae)**

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Summary

Both sexes of *Lepthyphantes antroniensis* Schenkel, a northern and subalpine species new to Britain, are described, and its habitat and distribution are discussed.

Introduction

A survey of available information on British and Fennoscandian mountain spiders, carried out in the course of a study of the Shetland spider fauna (Ashmole, 1979), suggested the need for further work on Scottish mountains. Accordingly, NPA made a series of visits to the Cairngorms during the years 1978 to 1980, collecting systematically in many localities, including more than a hundred at above 600 m elevation.

A 30-minute collection made on 27 August 1979, on the side of the Lairig Ghru pass, included a female *Lepthyphantes* that did not match any British species. Reference to the European literature suggested that it might be *Lepthyphantes antroniensis* Schenkel (= *L. exiguus* Holm); comparison with material from Sweden and Austria, kindly provided by Drs Å. Holm and K. Thaler, has confirmed the identification.

Further visits to the original locality during 1980, together with some pitfall trapping, led to the finding of several more females and two males. It is evident, therefore, that *L. antroniensis* is an established member of the British fauna.

***Lepthyphantes antroniensis* Schenkel (Figs. 1-3)**

Lepthyphantes antroniensis Schenkel, 1933, p. 18-19; Wunderlich, 1972, p. 298; Thaler, 1972, p. 290-294; Palmgren, 1975, p. 53, 61-62.

Lepthyphantes exiguus Holm, 1939, p. 17-19.

The description of both sexes and Figs. 1-3 are based on the British material. *Total length*: ♀ 1.65-1.85 mm, ♂ 1.55 mm. *Carapace*: Length 0.68-0.73 mm, width 0.56-0.59 mm. Yellow-brown with a diffuse black border, and faint dark suffusions on striae and ocular area. *Chelicerae*: Yellow-brown. *Abdomen*: Grey dorsally and laterally, darker, almost black, ventrally. In some specimens with a few very faint pale chevrons dorsally, especially in posterior half. Covered with short hairs. *Sternum*: Black. Furnished with long hairs. *Legs*: Yellow-brown, suffused with varying amounts of black, especially on ventral surfaces. Femur I with a prolateral spine in distal half. Tibiae I-IV with 2 long dorsal spines, ca 4 times diam. of tibia; tibia I also with a prolateral and a retrolateral spine, and tibia II with a retrolateral spine, all in distal half. Metatarsi I-III with a dorsal spine in proximal half, and a trichobothrium (position on I = 0.19-0.22). Metatarsus IV without a trichobothrium, but occasionally with a dorsal spine. *Male palp* (Fig. 1): Paracymbium with a large tooth near posterior margin and a smaller tooth anterior to it. Lamella long and curved up to terminate behind edge of cymbium. In Swedish and Austrian material examined there is some variation in the size and shape of the tooth on the posterior margin of the lamella and in the form of the semi-membranous lobe which partly covers the lateral surface of the lamella (this lobe is very difficult to see). *Epigyne* (Figs. 2-3): There is some variation in the shape of the lateral lobes of the scape, and in the curvature of the anterior margin, but the median lobe of the scape is characteristic. The central, darkened, almost brush-like, part of the scape is not always obvious. The vulva is illustrated in Thaler (1972: figs. 13-17).

Diagnosis

L. antroniensis belongs to the *Lepthyphantes* Group IV of Locket & Millidge (1953). The form of the male palp, especially of the lamella and paracymbium, and the shape of the epigyne, are distinctly

different from those of all other British species. The epigyne looks a little like that of *L. angulatus* (O. P.-C.) at first glance, but the scape of the latter is much narrower. The male palp is closer to that of *L. complicatus* (Emerton) (= *L. umbraticola* (Keys.) = *L. audax* Sørensen), but in this species the lamella does not curve upwards.

Material examined

Cairngorms, Scotland: 27 Aug. 79, 1♀; 11 May 80, 1♂; 11 May-1 June 80, 1♀; 1 June 80, 1♀; 6 Sept. 80, 2♀ 1♂.

Obergurgl, Tirol, Austria: 11 July 65, 2♀ 1♂ (det. K. Thaler).

Abisko, Sweden: 31 May-7 June 76, 2♀ 2♂ (det. Å. Holm).

Occurrence

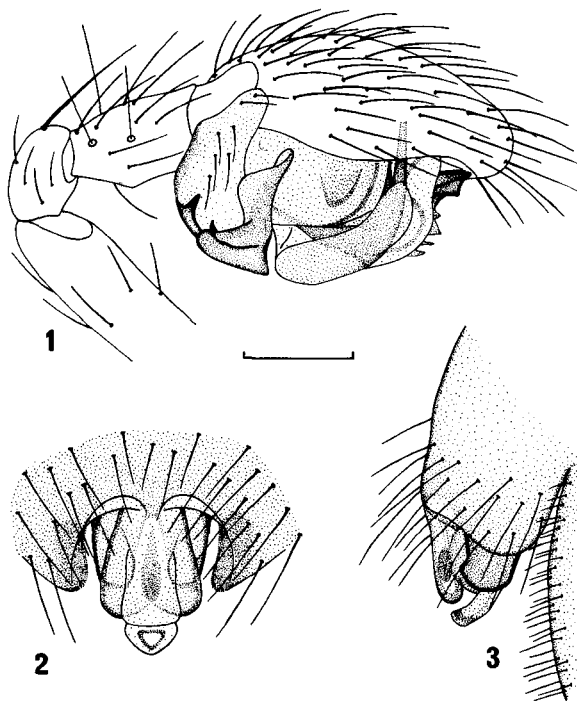
The original find on 27 August 1979 was made just below the eastern rim of the Lairig Ghru – a major pass running north-south through the Cairngorms – at about 980 m elevation (Grid ref. NH 971025). The specimen was in a collection from under rocks on a steep slope above the main scree that form the sides of the Lairig Ghru. The area is largely covered with vegetation, but there are some strips of scree oriented up and down the slope; rocks scattered in the vegetation rest on gravelly particles of granite or on tangles of plant roots and stems. The vegetation is about 10 cm high, consisting largely of crowberry (*Empetrum* sp.), with blaeberry (*Vaccinium myrtillus* L.) and some lichen (*Cladonia* sp.), grass, sedge and moss.

The next visit to the area was made on 11 May 1980. A 30-minute collection from under rocks failed to produce *L. antroniensis*, but a sample of vegetation from the same area contained a male. On the same day six pitfall traps were put out at 5 m intervals across the area, and these were collected on 1 June; the catch of about 150 adult spiders included one female *L. antroniensis*. Also on 1 June, another female was obtained during a 30-minute collection under rocks.

On a visit on 6 September 1980 several collections were made in the same general area. No *L. antroniensis* were obtained in a collection under rocks, just north of the original site, nor in another collection and a

sample of vegetation on an exposed steep slope a few hundred metres to the north and a little higher than the original site. A female was found, however, in a conspicuously damp rocky cleft just below this slope (Grid ref. NH 969029, elevation about 980 m). The vegetation here was patchy, in corners between rock faces and slabs, and again included much *Empetrum* and *Vaccinium myrtillus*. On the same day, a female and a recently moulted male were obtained in a 30-minute collection under rocks in the original site.

Over twenty species of spiders have now been collected in the area where *L. antroniensis* has been found and it may be helpful to mention some of these. The most abundant species seems to be *Hilaira frigida* (Thorell), with *Oreonetides vaginatus* (Thorell) and *Gonatum rubens* (Blackwall) also common; other species that have been found either in several samples or in substantial numbers are *Lepthyphantes zimmermanni* Bertkau, *Silometopus elegans*



Figs. 1-3: *Lepthyphantes antroniensis* Schenkel. 1 Right male palp, lateral view; 2 Epigyne, ventral view; 3 Epigyne, lateral view. Scale line = 0.1 mm.

(O. P.-C.), *Walckenaera clavicornis* (Emerton) and *Ceratinella brevipes* (Westring). Additional noteworthy species include *Walckenaera nudipalpis* (Westring), *W. cuspidata* Blackwall, *Entelecara errata* O. P.-C., *Tiso aestivus* (L. Koch), *Rhaebothorax morulus* (O. P.-C.), *Porrhomma pallidum* Jackson, *Meioneta gulosa* (L. Koch) and *Lepthyphantes whymeri* F. O. P.-C.

On the European continent *L. antroniensis* has been recorded from the Swiss and Austrian Alps and from the Carpathians (Wunderlich, 1972; Thaler, 1972) and is widely distributed in Fennoscandia from latitude 61°N almost to 70°N (Holm, 1950; Hauge, 1969, 1976; Koponen, 1976; Palmgren, 1975, 1977). In the Alps the species has been found in subalpine spruce (*Picea*) and pine (*Pinus*) woods between about 1600 and 2100 m. In Fennoscandia it occurs in spruce forests (e.g. Hauge, 1976) and especially in birch (*Betula*) forests, but also on rocky open ground with scattered birch scrub; recorded elevations range from 150 m near Kevo, Finnish Lapland (Koponen, 1976) up to 600-700 m at Kilpisjärvi in the same area (Palmgren, 1965). The species is normally associated with matted ground vegetation dominated by *Vaccinium* spp., *Empetrum hermaphroditum* Hagerup and mosses (Holm, 1950; Palmgren, 1965; Hauge, 1977). It is sometimes also found in the drier parts of *Sphagnum* bogs, at the margin of ponds in alpine heaths and under debris on lake shores. Koponen (1976) found that *L. antroniensis* was among the ten most abundant species in pitfall traps in birch forest at Kevo (69°45'N), but was unrepresented in sweep-net samples in the field layer and the tree foliage of the birch forest, and in pitfall and net samples from pine forest and low alpine heath in the same area.

It is clear from this information on the Fennoscandian habitat of *L. antroniensis* that the Lairig Ghru site is typical so far as the ground vegetation is concerned, in spite of the absence of trees. Evidently we cannot expect to find the species on the Cairngorm plateau itself, but should search for it around the edges of high-level screes in other areas, and also in the few available examples of subalpine birch wood, such as that on Morrone, near Braemar.

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Note added in proof

An additional female has been identified in a sample collected on 4 June 1980 at a site about 14 km from the original locality. This was at 900 m on Sron a' Cha-no, a northern spur of Cairngorm (Grid ref. NJ 015073). The collection was made under flattish rocks near the top of the ridge, with dense mat vegetation providing partial ground cover, but also exposed granitic gravel.