

- SEYFARTH, E.-A. 1978: Lyriform slit sense organs and muscle reflexes in the spider leg. *J.comp.Physiol. (A)* **125**: 45–57.
- SEYFARTH, E.-A. 1985: Spider proprioception: receptors, reflexes, and control of movement. In F. G. Barth (ed.), *Neurobiology of arachnids*: 230–248. Heidelberg, Springer.
- VOGEL, H. 1923: Über die Spaltsinnesorgane der Radnetzspinnen. *Jena.Z.Med.Naturw.* **59**: 171–208.
- VOLLRATH, F. 1983: Relative and absolute growth in *Nephila clavipes*. *Verh. naturw. Ver.Hamb.* **26**: 277–289.
- VOLLRATH, F. 1987: Spiders with regenerated legs can build normal webs. *Nature, Lond.* **328**: 247–248.
- VOLLRATH, F. 1990: Leg regeneration in web spiders and its implications for orb weaver phylogeny. *Bull. Br. arachnol. Soc.* **8**: 177–184.
- VOLLRATH, F. 1992: Analysis and interpretation of orb spider exploration and web-building behaviour. *Adv. Study Behav.* **21**: 147–199.
- WEISSMANN, M. 1987: *Web-building and prey capture in two orb weavers*. M.Sc. thesis, Oxford University.
- WEHNER, R. 1987: Matched filters — neural models of the external world. *J.comp.Physiol. (A)* **161**: 511–531.

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## A new genus and species of linyphiid spider from south-west England (Araneae: Linyphiidae)

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### Summary

*Nothophantes horridus*, n. gen., n. sp., is described from a limestone quarry in south-west England, and its taxonomic affinities and habitat are discussed.

### Introduction

A single female of an unknown species of linyphiid spider was collected from a disused limestone quarry at Shapter's Field, Cattedown, Plymouth, Devon in 1989. A second specimen was collected from the rock face of the same quarry on 12 March 1991 and, on this occasion, was recognised as being clearly new to Britain. At first it was thought to be possibly a species of *Lepthyphantes* Menge (and was provisionally listed as "*Lepthyphantes* sp." in the BAS Members' Handbook checklist issued in March 1992). Several further visits to the site failed to produce any more specimens. In early 1994, it was learnt that development of the site was likely to proceed during the summer of 1994 and that much of the limestone quarry face was going to be removed and used for reclamation purposes. The developers agreed to support an invertebrate survey as part of a nature conservation mitigation programme on the site during March and April 1994. This led to the capture of four more females, but unfortunately no males.

More detailed examination of the specimens has shown that it is not possible to include the species in *Lepthyphantes* or in any other known genus, and it is

therefore described here in a new genus as *Nothophantes horridus*, n. gen., n. sp. All measurements are in mm.

### Genus *Nothophantes*, new genus

*Type species: Nothophantes horridus*, new species.

*Etymology:* The generic name is derived from the Greek *nothos*, spurious, and *hyphantes*, a weaver; gender masculine.

*Diagnosis:* The female is diagnosed by the epigyne (Figs. 1–2), with its large transverse atrium and broad dorsal scape attached to the ventral plate, and by the numerous long spines on the legs and prominent bristles on the abdomen. The chaetotaxy is similar to that of some species of *Lepthyphantes* and *Troglohyphantes* Joseph, but the epigyne is very different. The male is unknown.

*Description:* The female has total length *c.* 2–3 mm. The carapace is unmodified, and the eyes moderately small, with posteriors *c.* 1.25–1.5 diam. apart. The abdomen may be uniform pale grey, or sometimes darker with pale yellow on lateral sides anteriorly. Legs moderately long, with tibia I l/d *c.* 7.5, and femora I and IV equal to or longer than carapace. Metatarsus IV almost as long as tibia IV. Femora I–II with 1 dorsal spine, femur I also with a prolateral spine. All tibiae with 2 dorsal spines and 1 prolateral and 1 retrolateral spine; tibia I, and occasionally tibia II, also with a ventral spine. All metatarsi with 1 dorsal spine. Spines very long; dorsal tibial spines 3–5 × diam. of tibia. Metatarsi I–III with a trichobothrium, Tm I *c.* 0.2. Palp with numerous strong spines, and tarsus with a claw. Epigyne (Figs. 1–2) with a large transverse atrium. The ventral plate does not extend far posteriorly, but attached to its dorsal surface there is a broad scape which curves first anteriorly and then posteriorly to lie just ventral to the dorsal plate. The posterior extension of the scape carries a large socket distally on its ventral surface. The copulatory ducts (Fig. 3) follow a wide loop from the lateral spermathecae through the ventral plate, before turning sharply dorsally and posteriorly to terminate on the ventral surface of the scape just anterior to the distal edge of the dorsal plate.

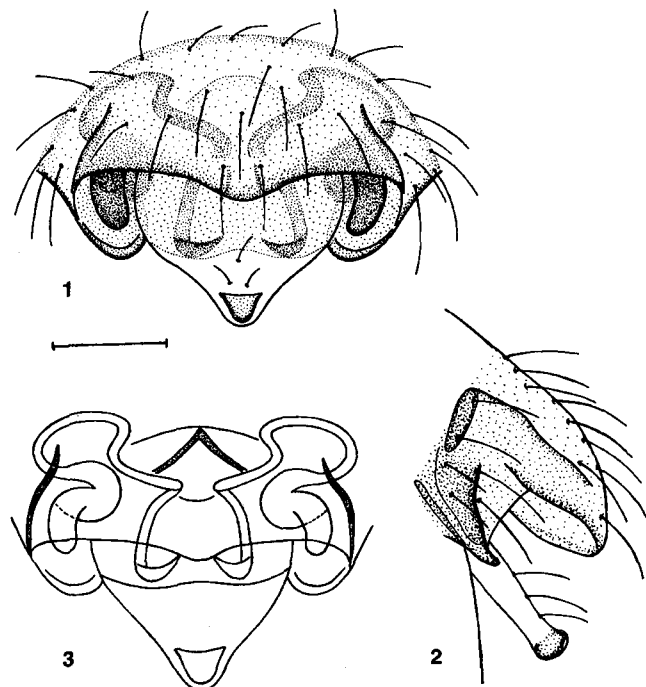
*Included species:* Only the type species.

*Distribution:* Known only from Plymouth, UK.

**Taxonomic position:** The structure of the epigyne, with the scape attached to the ventral plate and carrying a socket distally on its ventral side, indicates that *Nothophantes* belongs to the subfamily Micronetinae as defined by Millidge (1984). This subfamily was split by Millidge (1993) into the subfamilies Micronetinae and Lepthyphantinae, and it is clear from the general epigynal structure of these genera that *Nothophantes* should be included in the Lepthyphantinae. The form of the epigyne bears some resemblance to certain members of the genera *Centromerus* Dahl and *Centrophantes* Miller & Polenec, e.g. *Centromerus pabulator* (O.P.-C.), *C. arcanus* (O.P.-C.) and especially *Centrophantes crosbyi* (Fage & Kratochvil), but the chaetotaxy is very different. The chaetotaxy is probably closest to *Troglohyphantes*, but in this genus there is always a large voluminous protruding scape. Some of the more heavily spined species of *Lepthyphantes* also have a chaetotaxy which approaches that of *Nothophantes*. *Lepthyphantes*, as defined at present, is such a large and diverse genus (with over 400 species) that it might be considered possible to include *Nothophantes* in it. However, the appearance of the epigyne of *Nothophantes* is very different from that of any of the established species groups in the genus *Lepthyphantes* and, as there is already a tendency to split off some of the species groups of *Lepthyphantes* into separate genera (Tanasevitch, 1992; Saaristo & Tanasevitch, 1993), it would seem unwise to enlarge the genus *Lepthyphantes* yet further by the inclusion of *Nothophantes*. It is likely that the taxonomic position of *Nothophantes* will become clearer when the male is found.

***Nothophantes horridus*, new species** (Figs. 1–3)

**Types:** Female holotype and 3♀ paratypes, Shapter's Field quarry, Cattedown, Plymouth, Devon, UK,



Figs. 1–3: *Nothophantes horridus*. **1** Epigyne, ventral view; **2** Epigyne, lateral view; **3** Vulva, ventral view. Scale line=0.1 mm.

March–April 1994, leg. R. A. Stevens, S. Warr & R. Tait; 1♀ paratype, same locality, 1989, leg. R. A. Stevens. Holotype and 2♀ paratypes deposited in Natural History Museum, London, 1♀ paratype in Merrett coll. and 1♀ paratype in Stevens coll. Also 1♀ from same locality, 12 March 1991, leg. R. A. Stevens, severely damaged in course of description.

**Etymology:** The specific name is an adjective (Latin *horridus*, bristled) referring to the long spines on the legs and dorsal bristles on the abdomen.

**Diagnosis:** The female is diagnosed by the epigyne (Figs. 1–2) and by the chaetotaxy. The male is unknown.

**Female:** Total length 2.15–2.95. Carapace length 0.95–1.25, width 0.7–0.9. Abdomen length 1.1–1.6. Sternum length 0.55–0.7, width 0.5–0.65. Carapace and legs yellow. Sternum yellow, sometimes suffused with grey, especially near margins. Abdomen uniform pale grey dorsally, or darker grey with pale yellow on lateral sides anteriorly. Ventrally grey, sometimes with a pale longitudinal line on each side and pale anterior to epigastric fold. Carapace with a few short hairs in eye region and on clypeus. Sternum covered with long hairs and some shorter ones. Abdomen covered with short hairs, and with scattered long bristles dorsally. Eyes moderately small, AME *c.* 0.5 diam. apart and *c.* 2 diam. from ALE. PME *c.* 1.25 diam. apart and *c.* 1.5 diam. from PLE. PME *c.* 2.5 × diam. of AME. Clypeus slightly convex. Chelicerae with 3 moderately large teeth in outer row, and 1 tooth and 4 or 5 small denticles in inner row; several short hairs on anterior face. Legs: Formula IV-I-II-III. Measurements of specimen with carapace length 0.96:

	Fe	Pa	Ti	Mt	Ta	Total
<b>I</b>	0.98	0.30	1.00	0.86	0.64	3.78
<b>II</b>	0.93	0.28	0.96	0.82	0.61	3.60
<b>III</b>	0.89	0.25	0.89	0.78	0.57	3.38
<b>IV</b>	1.11	0.28	1.14	1.11	0.64	4.28

Chaetotaxy as given in generic description. In addition, all femora bear several spines or strong hairs ventrally, arranged more or less in 1 or 2 rows, and all patellae with one short proximal and one long distal spine. Epigyne: Figs. 1–2. Vulva (Fig. 3): With some prominent internal chitinised apodemes, which partially obscure the duct structure.

**Material examined:** Only the types.

**Distribution:** Known only from the type locality, a disused limestone quarry in Plymouth, Devon (Grid ref. SX 493538). The quarry lies in a Middle Devonian Limestone outcrop at the western extremity of a series running across Devon to the south of Dartmoor. Whilst the type locality is unfortunately due to be largely demolished for industrial development, it is possible that *Nothophantes* may occur in similar limestone formations elsewhere in Plymouth, but searches have so far proved unsuccessful.

Three of the types found in 1994 were collected from under large stones lying in exposed positions on the old quarry floor, whilst another collected at the same time was found under a small stone lying on a narrow limestone shelf of the north-east facing quarry face. The

1991 specimen is also thought to have been collected from the quarry face, but this cannot be confirmed since it was part of a larger collection which also included specimens from the quarry floor.

As Cattedown is close to a port area of Plymouth, it is possible that *Nothophantes* could have been imported originally, but as there was apparently a well-established population it must have been present in the area for some time. It is possible that *Nothophantes* is associated with rock crevices and cave systems known to permeate the Shapter's Field limestone, and that the specimens collected represent a small part of the population which may periodically leave retreats within the rock formations. However, it is not greatly modified for a troglobitic existence, although the eyes are moderately small and the legs and abdomen carry very long spines or bristles. If it is related to *Centromerus* or *Centrophanes* it might be expected that the male would be mature in winter. However, two of the five females collected in March/April were considerably paler and smaller than the others, which might suggest they had been mature for a relatively short time.

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### References

- MILLIDGE, A. F. 1984: The taxonomy of the Linyphiidae, based chiefly on the epigynal and tracheal characters (Araneae: Linyphiidae). *Bull.Br.arachnol.Soc.* **6**(6): 229–267.
- MILLIDGE, A. F. 1993: Further remarks on the taxonomy and relationships of the Linyphiidae, based on the epigynal duct conformations and other characters (Araneae). *Bull.Br.arachnol.Soc.* **9**(5): 145–156.
- SAARISTO, M. I. & TANASEVITCH, A. V. 1993: Notes on the systematics of the spider genus *Lepthyphantes* Menge (Aranei Linyphiidae Micronetinae). *Arthropoda Selecta* **2**(2): 55–61.
- TANASEVITCH, A. V. 1992: New genera and species of the tribe Lepthyphantini (Aranei Linyphiidae Micronetinae) from Asia (with some nomenclatorial notes on linyphiids). *Arthropoda Selecta* **1**(1): 39–50.