

Tenuiphantes cantabropyrenaeus n. sp., a new Cantabro-Pyrenean spider species (Araneae: Linyphiidae)

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Summary

A new species of the genus *Tenuiphantes* is described from France and Spain: *Tenuiphantes cantabropyrenaeus* Bosmans, n. sp. The species looks like *T. jacksoni*, *T. jacksonoides*, and *T. zimmermanni*. However, the location of the tooth of the lamella characteristica and the shape of the scape distinguish *T. cantabropyrenaeus* from these species. A diagnosis is provided for the new species, together with notes on distribution and habitat.

Introduction

The genus *Lepthyphantes* Menge, 1866 has recently been split into several new genera, mainly by Michael Saaristo and Andrei Tanasevitch (Saaristo & Tanasevitch 1993, 1996, 1999, 2000, 2001).

This has been criticized by van Helsdingen (2009), because it is difficult to assign a new species to a certain genus, without leafing through all available papers. In the case of the presently described species, there is no doubt it belongs in the genus *Tenuiphantes* Saaristo & Tanasevitch, 1996. This is one of the best known genera of the *Lepthyphantes* group, thanks to the excellent study of the tenuis group by van Helsdingen, Thaler & Deltshv (1977).

The first specimens of the new species were discovered in 1984 during the study of an altitudinal gradient from France to Spain in the central Pyrenees. The results were published in Bosmans, Maelfait & de Kimpe (1986) and the species was mentioned in the paper as *Lepthyphantes* species a. This material was sent to Peter van Helsdingen for verification, but the material was never returned and actions to have the specimens returned were without results. Probably the material is in the Naturalis Biodiversity Center in Leiden.

Material and methods

The material treated in this paper was mainly collected by the late Piet Poot, a Dutch coleopterologist, Juan M. Alberdi, Leticia Martínez de Murguía, and ourselves.

Specimens were examined and illustrated using a Wild M5 stereomicroscope. Further details were studied using an Olympus CH-2 stereoscopic microscope with a drawing tube.

Structures of the left palpus are depicted. All morphological measurements are given in millimetres. Somatic morphology measurements were taken using a scale reticule in the eyepiece of the stereo microscope. Measurements of the legs are taken from the dorsal side. Spines on leg segments are listed in the following order: dorsal-prolateral-retrolateral-proventral-retroventral.

Male palps were detached and transferred to glycerol for examination under the microscope. Female genitalia were excised using sharpened needles and then transferred to clove oil for examination under the microscope. Later, palps and epigynes were returned to 70% ethanol.

Type material is deposited in the Koninklijk Belgisch Instituut voor Natuurwetenschappen, Brussels; other material is deposited in the collections listed below.

Morphological abbreviations: AM, anterior median eyes; AL, anterior lateral eyes; d, dorsal; Fe, femur; Mt, metatarsus; Pa, patella; PE, posterior eyes; pl, prolateral; rl, retrolateral; Ta, tarsus; Tb Mt I, relative position of trichobothrium on tibia I; Ti, tibia.

Repository abbreviations: CRB, Collection Robert Bosmans; CJA, Collection J. M. Alberdi; CPO, Collection Pierre Oger; CSA, Collection Sociedad de Ciencias Aranzadi; KBIN, Koninklijk Belgisch Instituut voor Natuurwetenschappen, Brussels; NDL, Naturalis Biodiversity Leiden.

Tenuiphantes cantabropyrenaeus Bosmans, n. sp. (Figs. 1–12)

Lepthyphantes species a; Bosmans, Maelfait & de Kimpe, 1986: 75.
Tenuiphantes cf. *jacksoni*; Castro (2009): 92.

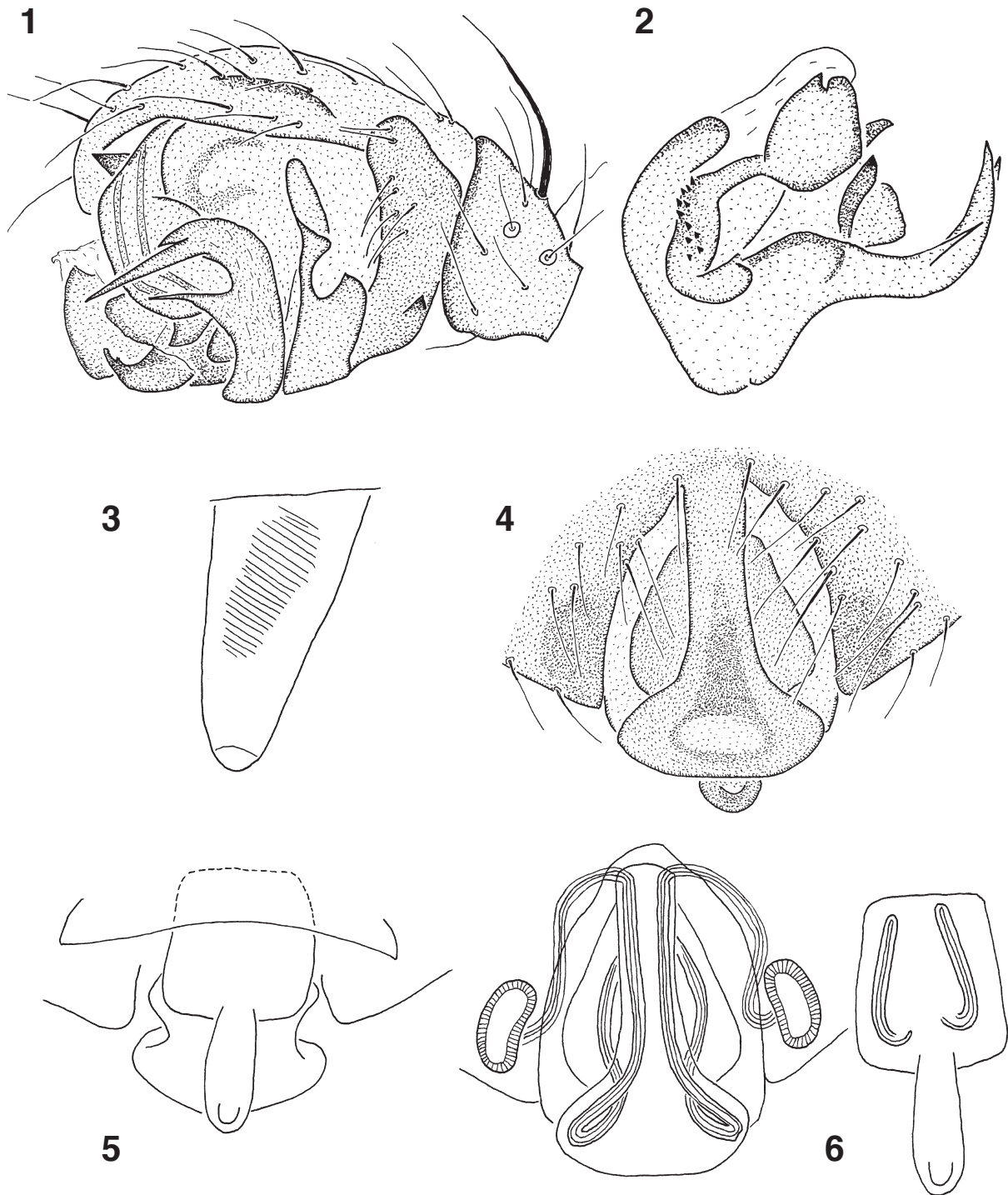
Type material: Holotype ♂, (one palp missing), 2 ♀ paratypes, from Larrau, Pyrénées Atlantiques, France, September 1992, P. Poot leg.; deposited in KBIN.

Diagnosis: Males can be distinguished from other *Tenuiphantes* species by the presence of one tooth on the basal part of the paracymbium, and by a group of teeth at the base of the embolus; and females by the presence of a median pit on the proscape.

Remarks: These characters are shared with *Tenuiphantes jacksoni* Schenkel, 1925 and *T. jacksonoides* van Helsdingen, 1977, but these species live in the Alps. Differences are observed when comparing the drawings of these species (van Helsdingen, Thaler & Deltshv 1977) with the specimens analysed here. In males of the new *Tenuiphantes*, the tooth of the paracymbium is located closer to the palpal tibia. In females, the widened part of the scape is longer. This last feature is also useful to separate the females from those of *T. zimmermanni*.

Etymology: The name refers to the distribution area of the new species, from Cantabria in the west to the Pyrenees in the east.

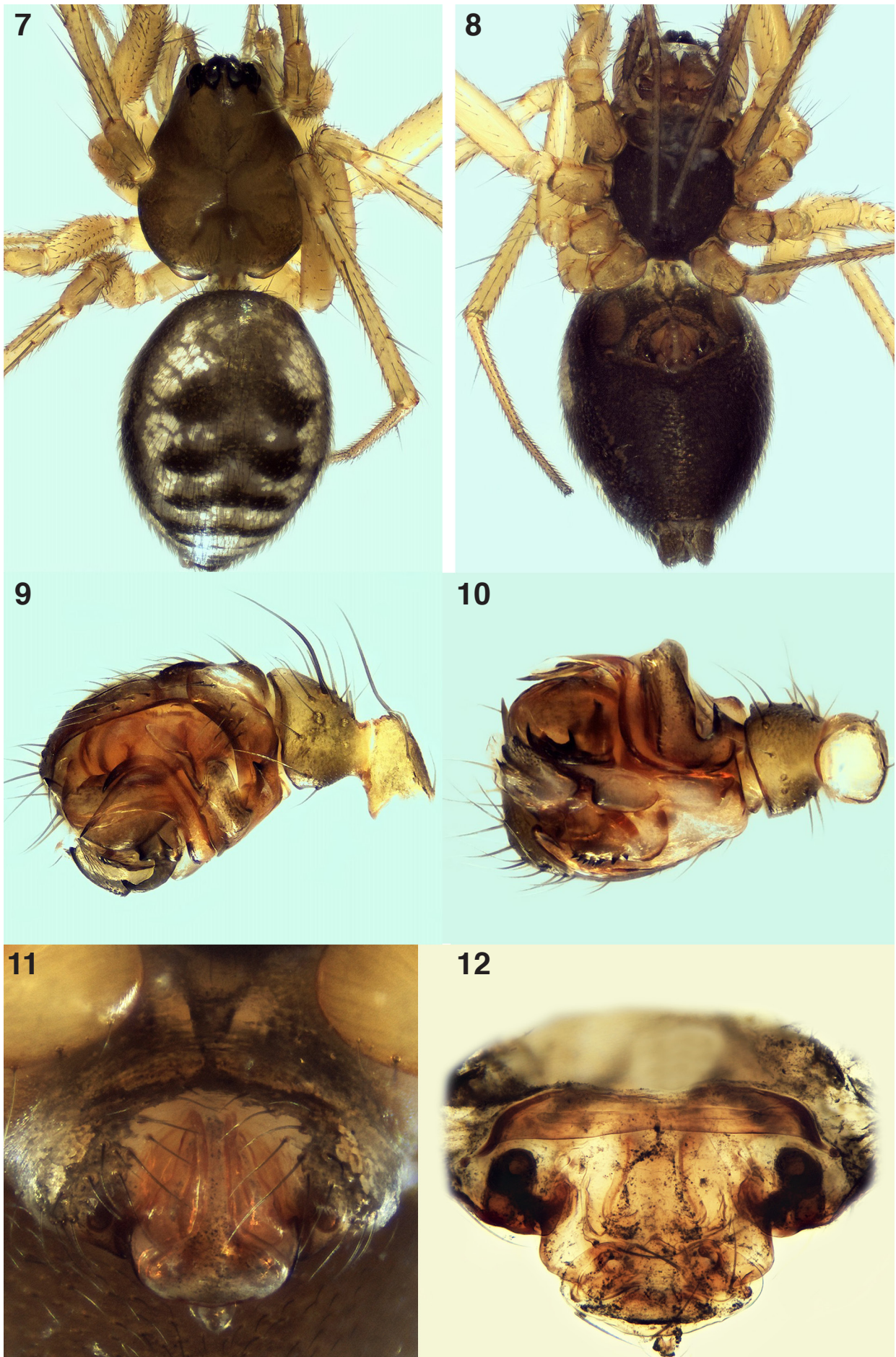
Description of male: Colour: carapace and chelicerae yellowish olive to yellowish brown; legs pale yellowish; abdomen variable, dorsally mostly grey, four pairs of chevrons, lateral stripe, area of spinnerets and venter dark grey, area between second, third and fourth pair of chevrons and



Figs. 1–6: *Tenuiphantes cantabropyrenaeus* Bosmans, n. sp. **1** male palp, retrolateral view; **2** embolic division, prolateral view; **3** male chelicera, lateral view; **4** epigyne, ventral view; **5** epigyne, dorsal view; **6** vulva, ventral view.

two lateral stripes clear white, stripes sometimes interrupted; in some specimens the abdomen is nearly entirely black with grey chevrons hardly visible. Measurements ($n = 10$): total length 1.8–2.2; carapace 0.92–1.14 long, 0.75–0.90 wide; height of clypeus 0.12, chelicera 0.37 long. Eyes: AM half the diameter of the other eyes, separated by two-thirds their diameter, from the AL by slightly more than their diameter; PE separated by half their diameter. Chelicera with 22–23 stridulating files (Fig. 3); fang groove with four promarginal and three smaller retrolateral teeth. Appendage measurements: Palp Fe 0.39, Pa 0.14, Ti 0.19, Ta 0.40; Leg I Fe 1.06, Pa 0.28, Ti 1.06, Mt 1.13, Ta 0.79; Leg II Fe 0.97, Pa 0.28,

Ti 0.96, Mt 0.95, Ta 0.62; Leg III Fe 0.86, Pa 0.26, Ti 0.67, Mt 0.76, Ta 0.48; Leg IV Fe 0.88, Pa 0.26, Ti 0.94, Mt 1.02, Ta 0.64. Leg spination: Fe I with one prolateral spine, Fe II–IV spineless; Ti I with two dorsal, one prolateral and one retrolateral spine, Ti II with two dorsal and one retrolateral spine, Ti III–IV with two dorsal spines; Mt with one dorsal spine. Spines on tibiae twice as long as tibial diameter; Tb Mt I = 0.23, Tb Mt IV absent. Male palp (Figs. 1, 2, 9, 10): Basal branch of paracymbium with a sharp posterior tooth and with seven hairs. Lamella characteristic sickle-shaped, distally ending in three teeth, median one the longest. Embolus with a group of 10–11 teeth on basal part.



Figs. 7–12: *Tenuiphantes cantabropyrenaeus* Bosmans, n. sp. **7** female, dorsal aspect; **8** female, ventral aspect; **9** male palp, retrolateral view; **10** male palp, ventral view; **11** epigyne, ventral view; **12** epigyne, dorsal view.

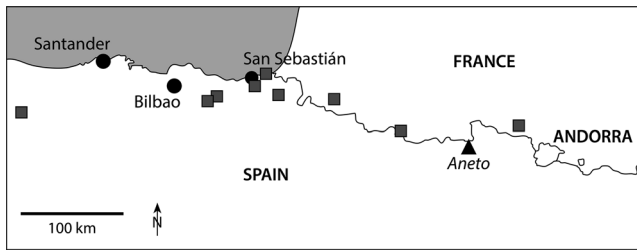


Fig. 13. Distribution of *Tenuiphantes cantabropyrenaeus* Bosmans, n. sp. in France and Spain (squares).

Description of female: Colouration of eyes, chelicerae and spinulation as in male. Measurements ($n = 10$): total length 1.8–2.2; carapace 0.90–0.99 long, 0.74–0.80 wide. Epigyne (Figs. 4, 5, 11, 12): Scape sigmoid and flattened; proscape with a narrow basal part and wider, rounded distal part, with darker depression; median part of scape rounded, visible at both sides of proscape; distal part nearly rectangular, with long stretcher and lateral lobes totally reduced. Posterior median plate very wide. Vulva (Fig. 6): spermathecae oval; copulation ducts running throughout the scape.

Other material examined: FRANCE: Hautes Pyrénées: Aragnouet, 1500 m, pitfalls in *Picea abies* forest, 15 ♂, 31 ♀, 25 July–4 September 1984, R. Bosmans leg. (NDL?). Pyrénées Atlantiques: Larrau, 650 m a.s.l., 1 ♂, 1 ♀, 15 September 1989, P. Poot leg. (CRB). Larrau, Forêt d'Iraty, 1180 m a.s.l., 1 ♂, 3 ♀, in forest litter, 4 September 2015, P. Dubois leg. (CPO). SPAIN: Cantabria: between Potes and Piedraslenguas, 1025 m a.s.l., 1 ♂, pitfalls in *Fagus* forest, 13 July 1985, R. Bosmans leg. (CRB). Guipuzcoa: Elgeta, 1 ♂, 3 January 2002, J. Alberdi leg. (CJA); Hernani, 1 ♂, 1 ♀, 28 October 2001, J. Alberdi leg. (CRB); idem, 2 ♂, 2 ♀, 9 December 2001 (CRB); idem, 1 ♀, 28 April 2002, J. Alberdi leg. (CJA); Monte Udalaiz, Arrasate, 450 m a.s.l., pitfalls in *Quercus ilex* forest, 1 ♂ 20–27 November 1999, A. Castro leg. (CSA); Oyarzun, 200 m a.s.l., 1 ♂, pitfalls in mixed forest, 23 July 1985, R. Bosmans leg. (CRB); Oyarzun, 9 ♂, 6 ♀, pitfalls in recently cut *Pinus* forest, 23 July 1985, both R. Bosmans leg. (CRB). Navarra: Goizueta, Artikutza forest, 600 m a.s.l., 2 ♂, mixed forest, L. Martínez de Murguía leg., 15 May 1995 (CRB).

Ecology: The species occurs in deciduous and pine forests from 200 to 1600 m a.s.l. and was collected in May and from July to January. Castro (2003, 2009) reported to have collected males from April to January, and females from April to November.

Distribution (Fig. 13): From the French central Pyrenees in the east to Cantabria in Spain in the west.

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