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Description of *Lepthyphantes rossitsae* sp. n. from Turkey (Arachnida: Araneae: Linyphiidae)

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Abstract: A new species of *Lepthyphantes* (*L. rossitsae* sp. n.) was discovered while studying spider material collected from caves near Konya, Turkey. The species is described and illustrated and its relationship to the closely related *L. leprosus* (Ohlert, 1865) are discussed.

Keywords: Taxonomy - spiders - cave fauna - zoogeography.

INTRODUCTION

From a faunistic and zoogeographical point of view Turkey, and Asia Minor in general, is a very interesting area. Its fauna is composed of different elements, some of which, like the Irano-Turanian and Euxinean, are poorly investigated and sometimes incorrectly considered as Mediterranean due to insufficient data about species distribution. Studying these faunistic elements is very important because they extend into Europe and contribute to the composition of the southeastern European fauna. The key to understanding them is to study more deeply the Turkish fauna which will hopefully reveal the true origin and zoogeographical affinities of many species currently known only from southeastern Europe, and may fill many gaps between the known localities of others. Studying the Turkish fauna, especially in the Antalia and Konya regions, will also help us differentiate between Mediterranean and Irano-Turanian faunistic elements among spiders. With this in mind I began a revision of all material from this region available in the collection of the National Museum of Natural History, Sofia. In this first paper a new *Lepthyphantes*, very similar to the common and widespread species *Lepthyphantes leprosus* (Ohlert, 1865), is described from a cave near Çamlik village in the Konya region of Turkey.

MATERIAL AND METHODS

The specimens examined here were collected by hand sampling and studied using a Wild M5A stereomicroscope. Photographs were taken with a Canon EOS 1100D digital camera attached to an Amplival microscope. The coloration is described from specimens preserved in 80% alcohol. The palp and epigyne morphology follows Helsdingen (1965). All measurements are in mm. Leg measurements are in the following sequence: total (coxa and trochanter + femur + patella + tibia + metatarsus + tarsus). The sequence of the chaetotaxy is: femur, patella, tibia, metatarsus. Abbreviations used in the text and figures are: ALE = anterior lateral eyes, AME = anterior median eyes, ctb = big tubercle oft cymbium, cts = small tubercle oft cymbium, d = dorsal, e = embolus, lc = lamella characteristica, ll = lateral lobe, lt = lateral tooth, nlc = narrow branch of lamella characteristica, p = prolateral, pc = paracymbium, PLE = posterior lateral eyes, PME = posterior median eyes, r = retrolateral, sc = scape, v = ventral. The holotype and 6 female paratypes are kept in the National Museum of Natural History (NMNHS), Sofia, Bulgaria; 1 male and 1 female (also paratypes) are deposited in the Muséum d'histoire naturelle de Genève, Switzerland.

TAXONOMIC PART

***Lepthyphantes rossitsae* sp. n.**

Figs 1-6, 10-12, 16-22

Types: Male holotype, 1 male paratype, 7 females paratypes; Turkey, Çamlik village, Beyşehir district, Mağarasi cave; 10.07.1993; P. Beron leg.

Etymology: I dedicate the species to my wife Rossitsa Dimitrova.

Diagnosis: The new species is very similar to *Lepthyphantes leprosus* in somatic and genital characters. The male of *L. rossitsae* sp. n. can be distinguished by the shape of the narrow branch of the lamella

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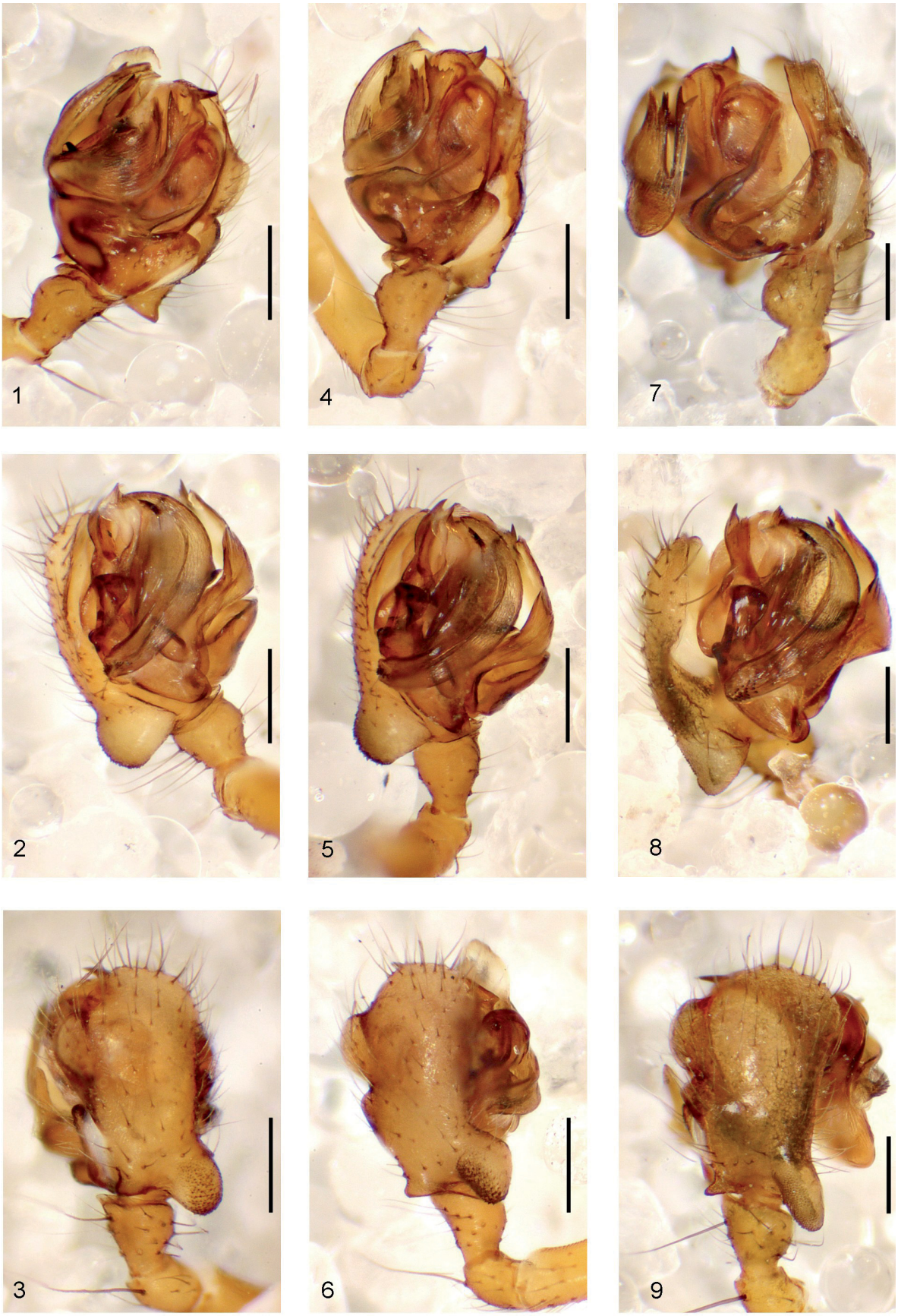
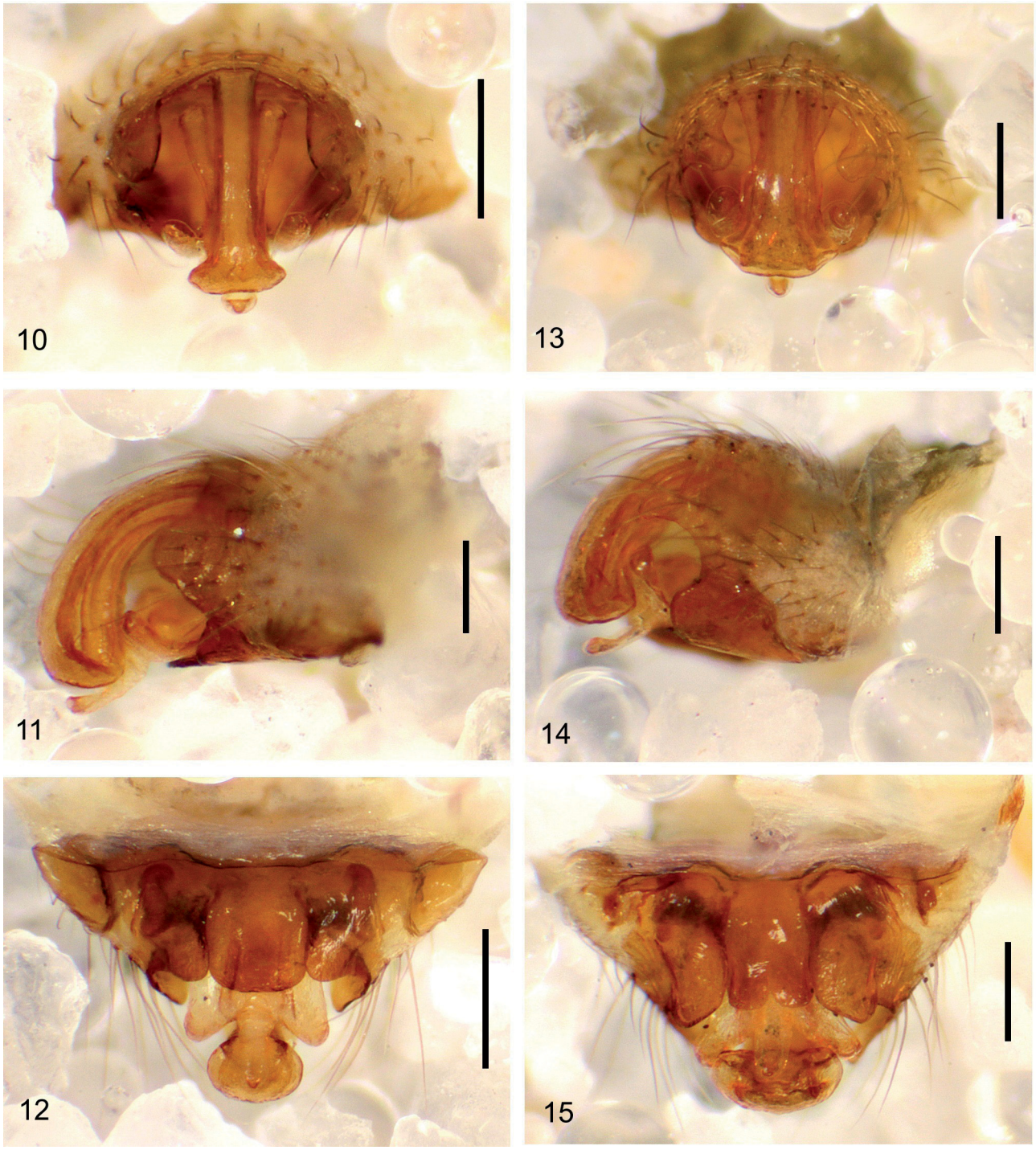
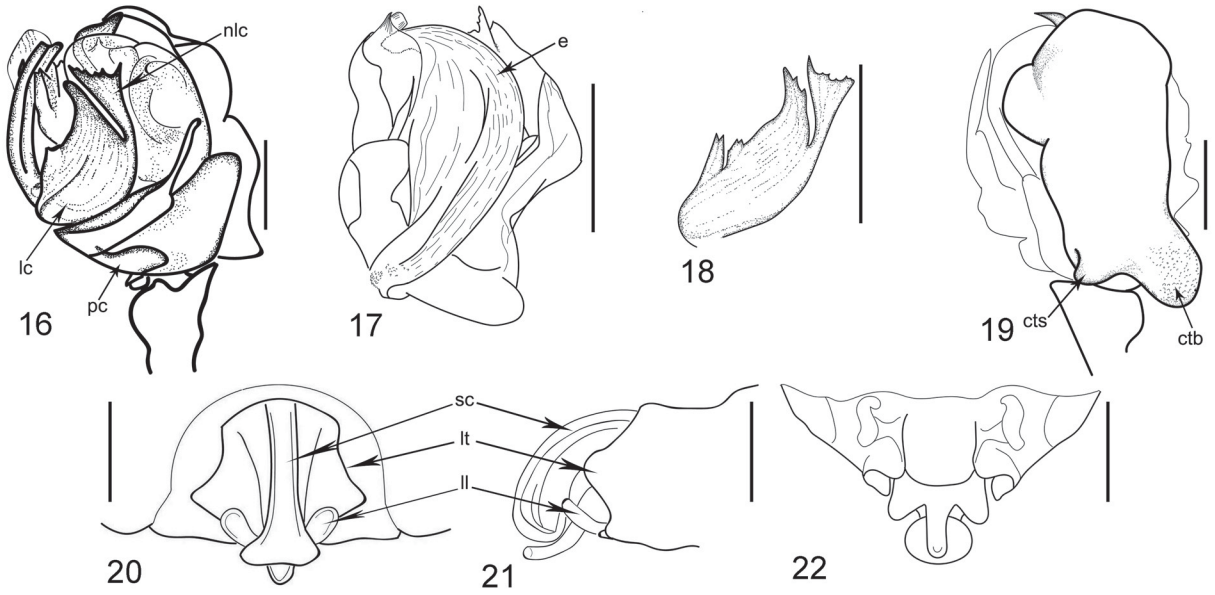


Figs 1-9. *Lepthyphantes rossitsae* sp. n., male holotype (1-3), male paratype (4-6); *Lepthyphates leprosus*, male (7-9). (1, 4, 7) Palp, retrolateral view. (2, 5, 8) Palp, dorsal view. (3, 6, 9) Palp, prolateral view. Scale 0.2 mm.



Figs 10-15. *Lepthyphantes rossitsae* sp. n., female paratype (10-12); *Lepthyphantes leprosus*, female (13-15). (10, 13) Epygine, ventral view. (11, 14) Epygine, lateral view. (12, 15) Epygine, dorsal view. Scale 0.2 mm.



Figs 16-22. *Lepthyphantes rossitsae* sp. n., male holotype (16-17, 19), male paratype (18), female paratype (20-22). (16) Palp, retrolateral view. (17) Embolus. (18) Lamella characteristica. (19) Palp, dorsal view. (20) Epygine, ventral view. (21) Epygine, lateral view. (22) Epygine, dorsal view. Scale 0.2 mm.

characteristica, which is shorter and wider apically (Figs 1, 4, 16, 18), while in *L. leprosus* it is longer, narrower and forked at the end (Fig. 7). The embolus in both species is very similar, but in *L. rossitsae* sp. n. the teeth at its base are less numerous and tiny (Figs 2, 5, 17), while in *L. leprosus* they are more numerous and slightly bigger (Fig. 8). Also the big tubercle of the cymbium (Figs 3, 6, 19) is shorter and wider than in *L. leprosus* (Fig. 9). The female epigyne (Figs 10-12, 20-22) has almost the same lateral wall and lateral lobe as in *L. leprosus*, but the scape in *L. rossitsae* sp. n. is thinner and longer and there are no lateral teeth (Figs 13-15).

Description of male (holotype): Measurements: Total length 3.85; cephalothorax length 1.48, width 1.25; sternum length 0.68, width 0.45; chelicera length 0.72, width 0.30; abdomen length 2.35, width 1.45; leg I length 11.75 (0.80 + 3.00 + 0.45 + 3.00 + 3.00 + 1.50); leg II length 10.75 (0.60 + 2.80 + 0.45 + 2.70 + 2.85 + 1.35); leg III length 8.45 (0.55 + 2.35 + 0.40 + 1.90 + 2.25 + 1.00); leg IV length 10.70 (0.62 + 2.70 + 0.40 + 2.63 + 3.00 + 1.35). Eyes: Both eye rows straight; AME smaller than other eyes, touching each other. Other eyes approximately equal in size. AME diameter 0.05; ALE, PLE, PME diameter 0.09; ALE separated from AME by 0.03. PME separated from PLE and each other by 0.08, ALE touching PLE. Chelicerae with 2 large distal and 2 small apical teeth on promargin and with 1 large distal tooth on retromargin. Coloration: carapace, sternum, chelicerae and legs yellow-brown. Abdomen grey, with white pattern (not very well preserved). Leg chaetotaxy: leg I (1p, 1d, 2d2p1v1r, 1d1r); leg II (-, 1d, 2d1r1v, 1d1p); leg III (-, 1d, 2d1r, 1d); leg IV (-, 1d, 2d1r, 1d).

Palps (Figs 1-6, 16-19): Cymbium with one big and one small tubercle in its basal part, visible in dorsal view (Figs 3, 6, 19). Paracymbium connected to cymbium with its flat internal part. Lamella characteristica broad and incised, bifid. It's narrow distal branch gradually widening to a fan shaped apical part (Figs 1, 4, 16). Embolus bent, sickle-shaped, bearing small teeth near its base (Figs 4-5, 17).

Description of female (paratype): Measurements: Total length 4.05; cephalothorax length 1.60, width 1.25; sternum length 0.85, width 0.75; chelicera length 0.72, width 0.30; abdomen length 2.66, width 1.70; leg I length 10.47 (0.65 + 2.95 + 0.47 + 2.50 + 2.50 + 1.40); leg II length 9.45 (0.63 + 2.40 + 0.47 + 2.30 + 2.40 + 1.25); leg III length 7.00 (0.54 + 2.00 + 0.40 + 1.35 + 1.85 + 0.86); leg IV length 9.35 (0.56 + 2.40 + 0.40 + 2.25 + 2.52 + 1.22). Eye arrangement and coloration as in male. Chelicerae with 4 large teeth on promargin and 4 small apical teeth on retromargin. Leg chaetotaxy: leg I (1p, 1d, 2d1p2v1r, 1d1p1r); leg II (-, 1d, 2d1v2r, 1d1p1r); leg III (-, 1d, 2d1v1r, 1d); leg IV (-, 1d, 2d1r, 1d).

Epigyne (Figs 10-12, 20-22): Lateral wall without teeth (Figs 10-11, 20-21). Scape long and narrow, widening at the end (Figs 10, 20). Two lateral lobes on each side of scape (Figs 10-11, 20-21).

Distribution: Known only from the type locality.

Remarks: As already stated by Helsdingen (2009), the splitting of *Lepthyphantes* s. l. into several distinct genera by Saaristo & Tanasevitch (1996, 1999, 2000, 2001) not only makes species identification difficult and

user-unfriendly, but also leaves *Lepthyphantes* s. str. as a heterogeneous group containing all species that could not be placed with certainty in any of the present genera close to *Lepthyphantes*. This is also the case with *Lepthyphantes leprosus*. Previously it was listed as part of the *Lepthyphantes nebulosus* group. Meanwhile most of the species from this group have been transferred to *Megalepthyphantes* Wunderlich, 1994, but *Lepthyphantes leprosus* remained in *Lepthyphantes* along with some other species, most of which are clearly not related to each other. Since the new species described here is very close to *Lepthyphantes leprosus*, it is provisionally also placed in *Lepthyphantes*.

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