European Journal of Taxonomy 976: 255–282
https://doi.org/10.5852/ejt.2025.976.2795
ISSN 2118-9773
www.europeanjournaloftaxonomy.eu
2025 · Tanasevitch A.V.

Research article

urn:lsid:zoobank.org:pub:6D91F26F-C5F8-4BC0-9BE9-741CB9F5030E

Survey of the Ethiopian linyphiid spider fauna. II. Subfamily Micronetinae Hull, 1920 (Arachnida: Araneae: Linyphiidae)

Andrei V. TANASEVITCH

A.N. Severtsov Institute of Ecology and Evolution, Russian Academy of Sciences, Leninsky prospekt 33, Moscow 119071, Russia.
E-mail: tanasevitch@gmail.com; and-tan@mail.ru

urn:lsid:zoobank.org:author:B73B6EC0-A298-445A-8FA5-444313C543F3

Abstract. Seven species of the subfamily Micronetinae Hull, 1920 have been discovered in the Oromia Region, Ethiopia, five of which being described as new: *Canariphantes trichofer* sp. nov. (♂, ♀), *Lepthyphantes bryocola* sp. nov. (♀), *L. chilalo* sp. nov. (♂, ♀), *L. legatus* sp. nov. (♂, ♀), and *Metaleptyphantes subclavator* sp. nov. (♂, ♀). The male of *L. bituberculatus* Bosmans, 1978 is redescribed and illustrated, its corresponding female here being described for the first time. The genus *Metaleptyphantes* Locket, 1968 is transferred from the subfamily Ipainae Saaristo, 2007 to Micronetinae, based mainly on the micronetine-like structure of the embolic division, despite its capsula-on-solenoid-type of the epigyne. A diagnosis of the *tropicalis* species-group of the genus *Lepthyphantes* Menge, 1866 is refined, its species list is replenished. *Agyneta prosectes* (Locket, 1968) is recorded from Ethiopia for the first time. The taxonomical status of the subfamily Micronetinae is discussed.

Keywords. Taxonomy, dwarf spiders, new species, Afrotropics, mountain fauna.

Tanasevitch A.V. 2025. Survey of the Ethiopian linyphiid spider fauna. II. Subfamily Micronetinae Hull, 1920 (Arachnida: Araneae: Linyphiidae). *European Journal of Taxonomy* 976: 255–282. https://doi.org/10.5852/ejt.2025.976.2795

Introduction

Some recent phylogenetic studies have demonstrated that the subfamily Micronetinae Hull, 1920 is not a monophyletic but rather a paraphyletic group, hence to be treated as the "micronetine" lineage within the clade including both the "micronetines" and the Erigoninae Emerton, 1882 (Arnedo *et al.* 2009; Tu & Hormiga 2010; Wang *et al.* 2015; Arnedo & Hormiga 2021; etc). However, I am inclined to follow the traditional subfamily system of the Linyphiidae Blackwall, 1859, hence, I have treated the Micronetinae sensu Saaristo & Tanasevitch (1996). Such approach seems to be feasible to me until the newly proposed clades, subclades and other phylogenetic lineages have not undergone a procedure of taxonomic formalization. See also the Discussion section.

Currently, the micronetine spider fauna of Ethiopia comprises only three species. Kenya, bordering Ethiopia to the south, has been much better investigated and presently includes 25 micronetine species

(Tanasevitch 2020; Kioko *et al.* 2021). The fauna of such neighbouring countries as Sudan and Somalia is known to contain only one species each: *Agyneta serratichelis* (Denis, 1964) and *Murphydium foliatum* Jocqué, 1996, respectively. No linyphiids are known from the other adjacent lands, such as Djibouti and Eritrea.

All three micronetines, *Lepthyphantes acuminifrons* Bosmans, 1978, *L. bituberculatus* Bosmans, 1978 and *L. simiensis* Bosmans, 1978, were described from the Simien Mountains, northern Ethiopia, from altitudes of 3300–3500 m a.s.l. According to Bosmans (1978), the former two species belong to the *tropicalis*-group of *Lepthyphantes* Menge, 1866 sensu lato. The latter, *L. simiensis*, is a member of the genus *Lepthyphantes* Menge, 1866 sensu stricto (see Remarks below under *Lepthyphantes*).

In October–November 2022, I had the opportunity to work in the framework of the Joint Russian-Ethiopian Biological Expedition to Ethiopia, organized by the A.N. Severtsov Institute of Ecology and Evolution, Russian Academy of Sciences. Short field research trips were carried out in the Chilimo State Forest, Arsi Mountains National Park and Suba Menagesha National Park, all in the Oromia Region. In addition to the National Parks, the territory of the Russian Embassy in Addis-Ababa was also carefully investigated.

The first part concerning the results of the expedition to Ethiopia was devoted to the linyphiid subfamily Erigoninae Emerton, 1882 (Tanasevitch 2023). This is the second paper of a series on the Ethiopian linyphiids which is dedicated solely to the subfamily Micronetinae.

Material and methods

This paper is based on spider material collected in several regions of Ethiopia from October 7th to November 15th 2022, in the framework of a Joint Russian-Ethiopian Biological Expedition. The types are kept at the Zoological Museum of the Moscow State University, Russia (ZMMU), and some paratypes will be deposited in the Muséum d'histoire naturelle de Genève, Switzerland (MHNG). Spiders were collected by sifting litter and moss, as well as by soil sampling in Chilimo State Forest and in two National Parks (see Introduction) and in the territory of the Russian Embassy, Addis-Ababa. Specimens preserved in 70% ethanol were studied using an MBC-9 stereo microscope. Sample numbers and locality data are given in square brackets. Drawings were done with a drawing tube; a Levenhuk C-800 digital camera was used for photographs. Leg chaetotaxy is presented in a formula, e.g., TiI: 2-1-1-4(3), which means that tibia I has two dorsal spines, one prolateral, one retrolateral and four or three ventral spines, the apical spines are disregarded. The sequence of leg segment measurements is as follows: femur + patella + tibia + metatarsus + tarsus. All measurements are given in mm. The terminology of copulatory organs mainly follows that of Merrett (1963) and the authors mentioned in the section Abbreviations given below.

Institutional abbreviations

MHNG = Muséum d'histoire naturelle de Genève, Switzerland
ZMMU = Zoological Museum of the Moscow State University, Russia

Abbreviations for morphological terms

bc = bursa copulatrix
ca = capsula = "sclerotized region", "terminal region" (Locket 1968); "plate" Holm (1968), "chitinized part at the end of a protruding scape" (Scharff 1990), "spavin-like epigyne" (Saaristo 2002); etc.
d = duct
dsa = distal suprategular apophysis sensu Hormiga (2000); median apophysis sensu Merrett (1963) and van Helsdingen (1969); suprategular apophysis sensu Millidge (1977)

e = embolus
eb = embolus body, extended part of embolus bearing embolus proper
ed = entrance duct (= copulatory duct, auct.)
emd = embolic division
ep = embolus proper sensu Saaristo (1971)
Fe = emur
fg = Fickert's gland
lb = lateral branches of posterior median plate
lc = lamella characteristica sensu Kulczyński (1898)
lw = lateral wall of the epigyne sensu Saaristo & Tanasevitch (1996)
ma = membranous area of radix sensu Saaristo & Tanasevitch (1996)
Me = metatarsus
mm = median membrane sensu van Helsdingen (1965); embolic membrane sensu van Helsdingen (1986); Hormiga (2000)
o = outgrowth of EB
op = duct opening
pa = place of attachment of lamella characteristica and radix
ph = pit-hook sensu Saaristo (1973)
pmp = posterior median plate sensu Helsdingen *et al.* (1977)
ps = proscape
r = radix
re = receptacle = spermatheca sensu Hormiga (2000)
s = stem of embolus
sc = scape (= scapus)
so = solenoid sensu Tu *et al.* (2007)
st = stretcher
ta = terminal apophysis sensu Merrett (1963); van Helsdingen (1965); Millidge (1977)
th = thumb, lateral extension of embolus sensu Saaristo & Tanasevitch (1996)
Ti = tibia
TmI = position of trichobothrium on metatarsus I
vh = ventral hook of distal suprategular apophysis

Results

Taxonomy

Class Arachnida Cuvier, 1812
Order Araneae Clerck, 1757
Family Linyphiidae Blackwall, 1859
Subfamily Micronetinae Hull, 1920

Agyneta Hull, 1911

Type species

Agyneta decora (O. Pickard-Cambridge, 1871), by original designation.

Agyneta prosectes (Locket, 1968)

Meioneta prosectes Locket, 1968: 75, fig. 5a–c (♂).

Meioneta prosectes – Bosmans, 1979: 56, fig. 1a–j (♂, ♀) — Locket & Russell-Smith 1980: 79, figs 91–96 (♂, ♀).

Material examined

ETHIOPIA • 1 ♂; Addis-Ababa, Russian Embassy Area; 9.0344° N, 38.78427° E; 2448 m a.s.l.; 9 Nov. 2022; A. Tanasevitch leg.; *Acacia* Mill. grove with sporadic *Eucalyptus* L'Her., bushes, sifting litter and humus under *Acacia*; [Eth024]; ZMMU.

Distribution

This Afrotropical species is presently known to occur in St Helena Island, Nigeria, Kenya and Angola (Word Spider Catalog 2024), thus being recorded here from Ethiopia for the first time.

Canariphantes Wunderlich, 1992

Type species

Canariphantes alpicola Wunderlich, 1992, by original designation.

Remarks

The Mediterranean genus *Canariphantes* Wunderlich, 1992 presently contains 15 species or subspecies (Word Spider Catalog 2024), being characterized by poor leg spination, a relatively short and simple lamella characteristica, a membranous terminal apophysis of unclear structure, a narrow and weak embolus with a well developed thumb, as well as by a small and compact epigyne with a reduced median part of the scape.

Distribution

Mediterranean Region: from the Azores and Canaries to Israel and Turkey (World Spider Catalog 2024).

Canariphantes trichofer sp. nov.

urn:lsid:zoobank.org:act:43FEAA9B-FD8C-4B66-A9A9-13A7DFE5D5E6

Figs 1–2

Diagnosis

The species described below could be assigned to *Canariphantes* based on the similarity with other congeners by showing poor leg spination, basically same conformation of the embolic division, a compact epigyne with a relatively short proscape and a reduced median part of the scape. The new species differs from all known congeners by the presence of a trichobothrium on metatarsi IV, a modified palpal tibia, as well as the shape of the distal part of the lamella characteristica in the male. The male seems to be especially similar to the East Mediterranean *C. nanus* (Kulczyński, 1898), but differs by a simple, unmodified paracymbium; the female is distinguished by a shorter and wider proscape. The shape of the epigyne is most similar to that of *C. relictus* Crespo & Bosmans, 2014, from the Azores (Crespo *et al.* 2014), but differs by the proscape base not being narrowed, as well as by the shape of the posterior median plate which shows a small invagination anteriorly, vs divided into two lobes in *C. relictus*.

Etymology

The specific epithet is a noun in apposition, referring to the presence of a trichobothrium on metatarsi IV, this not being typical of this genus. The name derived from both Latin '*trichobothrium*' and '*fero*', meaning 'bearing'.

Type material

Holotype

ETHIOPIA • ♂; Addis-Ababa, Russian Embassy Area; 9.03617° N, 38.78549° E; 2467 m a.s.l.; 11 Oct. 2022; A. Tanasevitch leg.; grove with *Juniperus* L., *Eucalyptus* L'Her., palm trees, bushes, sifting litter and humus; [Eth005]; ZMMU.

Paratypes

ETHIOPIA • 9 ♀♀, together with holotype; same data as for holotype; ZMMU • 1 ♂, 20 ♀♀; same data as for holotype; 11 Oct.–14 Nov. 2022; A. Tanasevitch leg.; ZMMU • 3 ♀♀; same data as for holotype; 9.03593° N, 38.78579° E; 2478 m a.s.l.; 7 Oct. 2022; A. Tanasevitch leg.; *Juniperus* L., *Acacia* Mill., *Eucalyptus* L'Her., bushes, sifting litter and humus; [Eth002]; ZMMU • 5 ♀♀; same data as for holotype; 9.03638° N, 38.78541° E; 2470 m a.s.l.; 8 Oct.–3 Nov. 2022; *Eucalyptus* grove with *Juniperus*, bushes, sifting litter and humus; A. Tanasevitch leg.; [Eth003]; ZMMU • 1 ♂, 3 ♀♀; same data as for holotype; 9.0350476° N, 38.7836601° E; 2467 m a.s.l.; 10 Oct. and 4 Nov. 2022; A.

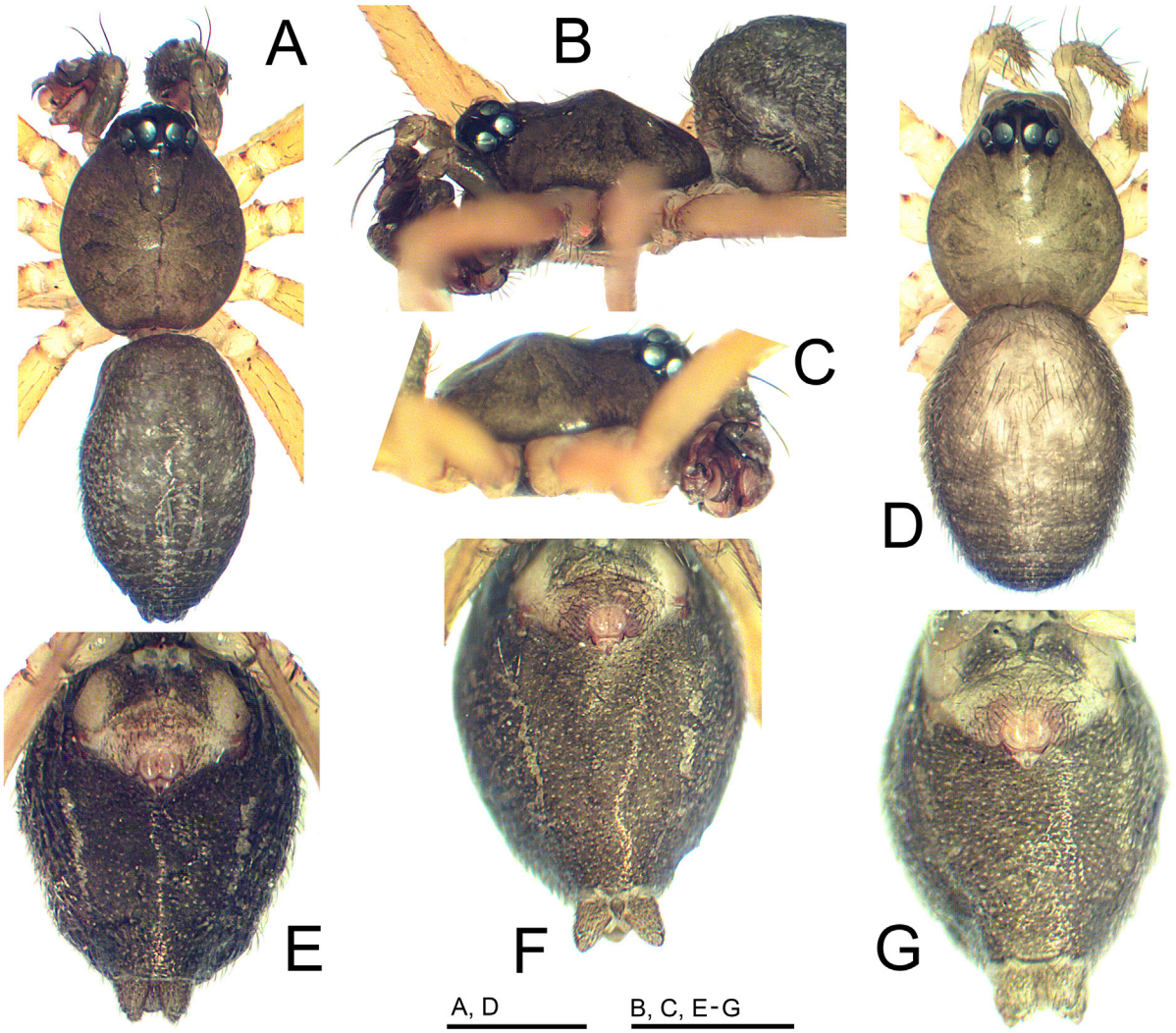

Fig. 1. Photographs of *Canariphantes trichofer* sp. nov., paratypes (Eth005; ZMMU). **A–C**. ♂. **D–G**. ♀. **A, D**. Habitus, dorsal view. **B–C**. Prosoma, lateral view. **E–G**. Abdomens, different specimens, ventral views. Scale bars = 0.5 mm.

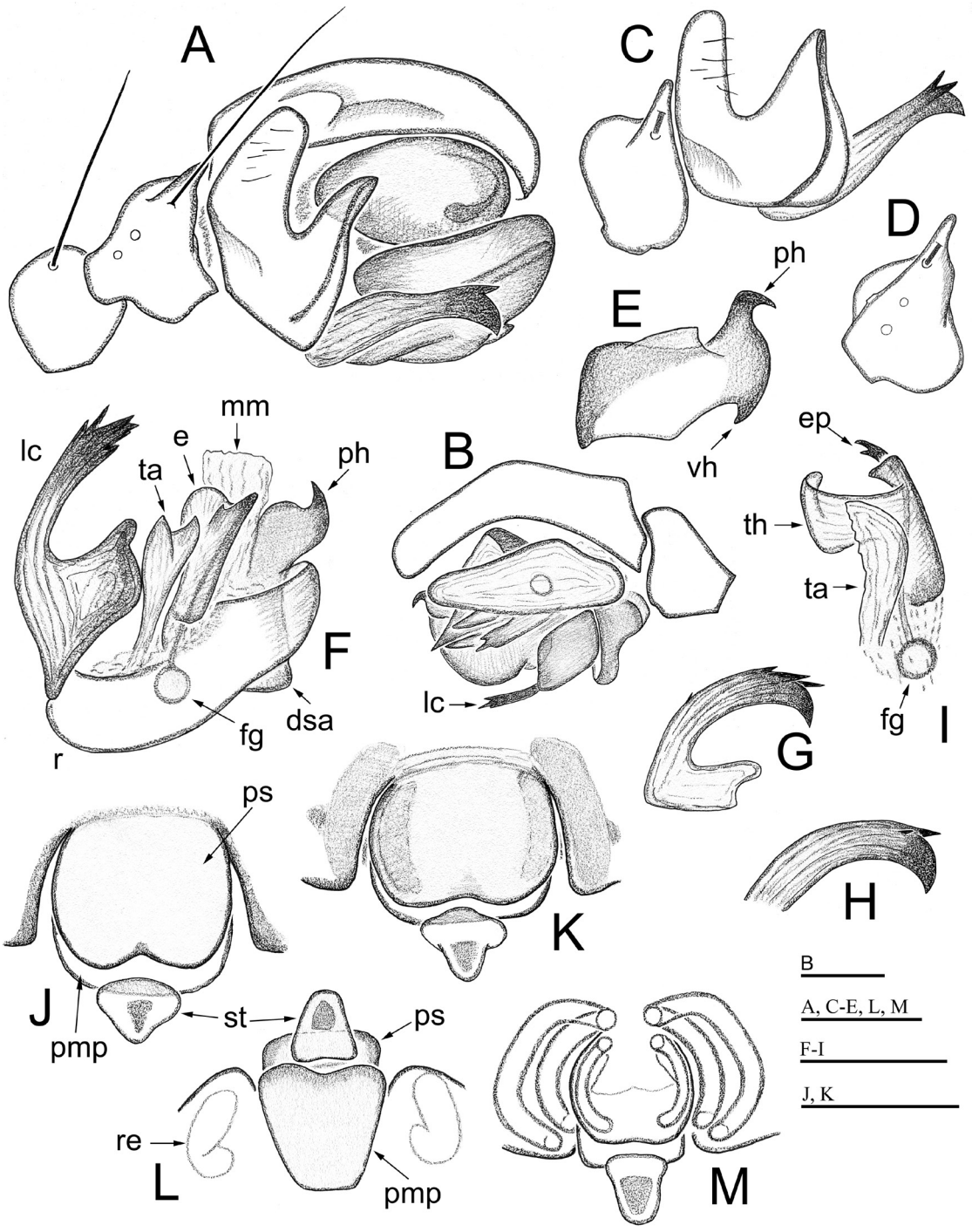

Fig. 2. Details of *Canariphantes trichofer* sp. nov., paratypes (Eth005; ZMMU). **A–I**. ♂, palpal structure. **J–M**. ♀, epigyne. **A**–**B**. Right palp, retrolateral and prolateral views, respectively. **C**. Tibia and paracymbium, postero-prolateral view. **D**. Tibia, lateral view. **E**. Distal suprategular apophysis. **F**. Embolic division, lateral view. **G–H**. Lamella characteristica, different aspects. **I**. Embolus and terminal apophysis, lateral view. **J–L**. Epigyne, different specimens. **J–K**. Ventral views. **L**. Dorsal view. **M**. Vulva, ventral view. Scale bars = 0.1 mm. Abbreviations: see Material and methods.

Tanasevitch leg.; *Eucalyptus* grove with *Juniperus*, *Acacia*, bushes, sifting litter and humus; [Eth004]; ZMMU • 1 ♂, 1 ♀; same data as for holotype; 9.03519° N, 38.78506° E; 2453 m a.s.l.; 13 Oct. 2022; A. Tanasevitch leg.; grove with *Acacia*, palm trees, *Eucalyptus*, *Juniperus*, bushes, sifting litter; [Eth007]; ZMMU • 2 ♀♀; same data as for holotype; 9.03541° N, 38.7854° E; 2457 m a.s.l.; 7 and 13 Oct. 2022; A. Tanasevitch leg.; *Eucalyptus* grove with *Juniperus*, palm trees, bushes, tall grass, sifting litter and humus; [Eth022]; ZMMU • 5 ♀♀; Oromia Region, 67 air-km E of Addis-Ababa, 5 air-km NE of Ginchi, Chilimo State Forest; 9.07061° N, 38.15804° E; 2584 m a.s.l.; 15 Oct. 2022; A. Tanasevitch leg.; spring valley near road; [Eth008]; ZMMU • 4 ♀♀; Asela Zone, ca 7–8 air-km SE of Asela, Chilalo-Terara Volcano, Chilalo Mt, canyon, steep northern slope; 3070–3075 m a.s.l.; 7.935124° N, 39.19392° E; 24 and 29 Oct. 2022; A. Tanasevitch leg.; *Hypericum revolutum* Vahl bushes with sporadic *Schefflera abyssinica* (Hochst. ex A.Rich.) Harms, grass, green mosses, sifting litter and mosses; *Podocarpus falcatus* (Thunb.) C.N. Page forest with *Juniperus procera* Hochst ex. Endl., *Prunus africana* (Hook. F.) Kalkman, *Olea europaea* L., *Hagenia abyssinica* (Bruce) J.F. Gmel., *Apodytes dimidiata* E.Mey ex. Arn., *Ficus* spp., *Erythrina brucei* Schweinf., grass, sifting litter and humus; [Eth016]; ZMMU • 1 ♂, 5 ♀♀; Asela Zone, ca 30 air-km SE of Asela, Arsi Mountains N.P., road from Digelu to Ticho; 3500–3505 m a.s.l.; 7.81944° N, 39.35429° E; 30–31 Oct. 2022; A. Tanasevitch leg.; *Erica arborea* L. bushes, grass, green mosses, sifting mosses; [Eth018]; MNHG • 3 ♀♀; Arsi Mountains N.P., road from Digelu to Ticho, top of mountains; 3755–3770 m a.s.l.; 7.82377° N, 39.41713° E; 21 Oct. 2022; A. Tanasevitch leg.; *Erica arborea* L. bushes, *Alchemilla* sp., green mosses mostly *Rhytidiadelphus triquetrus* (Hedw.) Warnst., sifting mosses in beds of *Erica*; [Eth019]; ZMMU.

Description

Male (paratype, Eth005)

Total length 1.95, habitus as in Fig. 1A. Carapace slightly modified, with shallow depression behind ocular area, as in Fig. 1B–C, 0.83 long, 0.70 wide, darkish-brown, with dark radial stripes. Eyes not enlarged. Chelicerae 0.28 long. Legs yellow to pale brown. Leg I 3.91 long (1.03 + 0.25 + 0.95 + 0.95 + 0.73), IV 3.87 long (1.03 + 0.23 + 1.03 + 0.93 + 0.65). Chaetotaxy. Femora unarmed, TiI–II: 2-0-1-0; TiIII-IV: 2-0-0-0, metatarsi spineless. Length of tibial spines 1.5–3 × diameter of corresponding leg segment. All metatarsi with trichobothrium. TmI 0.24, IV 0.38. Palp (Fig. 2A–I): patella with long spine dorsally. Tibia with dorsal invagination, dorsolateral side somewhat elongated and carrying long spine. Paracymbium relatively large, toothless. Distal suprategular apophysis short and wide, pit-hook stout. Lamella characteristica well sclerotized, with several small, short and sharp teeth distally, claw-shaped apically. Terminal apophysis relatively small, membranized, vague in shape. Embolus with narrow stem, thumb well developed, bent distally, embolus proper bifid. Abdomen 1.25 long, 0.90 wide, grey to dark grey or black, dorsal pattern absent (Fig. 1A).

Female (paratype, Eth005)

Total length 2.00, habitus as in Fig. 1D. Carapace 0.83 long, 0.70 wide. Chelicerae 0.25 long. Leg I 4.16 long (0.80 + 0.25 + 1.78 + 0.73 + 0.60), IV 3.28 long (0.88 + 0.25 + 0.85 + 0.75 + 0.55). Length of tibial spines 1.5–2 × diameter of corresponding leg segment. TmI 0.28, IV 0.40. Abdomen as in Fig. 1D–G, 1.25 long, 0.90 wide. Epigyne (Figs 1E–G, 2J–M): proscape rounded to oval, its distal notch of varying in size (Figs 1E–G, 2J–K). Middle part of scape (Saaristo & Tanasevitch 1996) compact, its distal part broadened, lateral lobes reduced; stretcher short, its terminal part relatively large, pit present. Posterior median plate elongated, broadening anteriad, somewhat invaginated apically. Body and leg coloration, chaetotaxy as in male.

Distribution

Known from the Oromia Region, Ethiopia, altitude ranging from 2450 to 3770 m a.s.l.

Lepthyphantes Menge, 1866

Type species

Lepthyphantes minutus (Blackwall, 1833), by subsequent designation.

Remarks

The genus *Lepthyphantes* was considered the largest in the Linyphiidae, and by 1993 included over 400 species. Saaristo and Tanasevitch (1993) started redelimiting the genus, initially identifying 31 species complexes therein. Many of them were subsequently given generic ranks. During the re-organization of the subfamily Micronetinae (Saaristo & Tanasevitch 1996), the species of the *minutus* species-complex, which included the type species, were recognized as the only ones corresponding to the diagnosis of the genus *Lepthyphantes*. As a result, the remaining species complexes started to be given generic ranks (e.g., Saaristo & Tanasevitch 1999, 2000, 2001, 2004; Tanasevitch 2001; etc.). The *minitus*-complex, i.e., *Lepthyphantes* (sensu stricto), which originally included four species, has grown to only seven species in subsequent years (see Tanasevitch 2020), while the remaining species of *Lepthyphantes* (sensu lato), which remained 'orphaned', without a specified genus, number over 160 species (Word Spider Catalog 2024).

Lepthyphantes bituberculatus Bosmans, 1978
Figs 3–4

Lepthyphantes bituberculatus Bosmans, 1978: 264, figs 30–36 (♂).

Remarks

The species was described based on the male holotype from the highlands of Simien Mountains N.P. (3300 m a.s.l.), northern Ethiopia (Bosmans 1978). Bosmans established a new species-group within *Lepthyphantes* (s. lat.), the *tropicalis*-group, where, in addition to *L. bituberculatus*, Bosmans included four other species: *L. acuminifrons* Bosmans, 1978, *L. biseriatus* Simon & Fage, 1922, *L. tropicalis* Tullgren, 1910, and *L. tullgreni* Bosmans, 1978. This group contains many more Afrotropical species than currently known (Tanasevitch, in preparation).

The diagnosis of the *tropicalis*-group was based on the characters of the male only. The discovery of the corresponding female allows us to clarify the diagnosis regarding the structure of the epigyne. This appears to be characterized by two main features:

(1) the median and distal parts of the scapus (Saaristo & Tanasevitch 1996) reduced to different degrees, merged to each other and attached to the proscape;
(2) the posterior median plate large and showing well developed lateral branches which embrace the scapus and cover the entire aperture of the epigyne from the scape to lateral walls. This type of posterior median plate is far from unique, as it can be found in several taxa of micronetines, e.g., *Mughiphantes* Saaristo & Tanasevitch, 1999; *Bolyphantes* C.L. Koch, 1837; *Incestophantes* Tanasevitch, 1992.

Diagnosis

Based on the structure of the palp and epigyne, *L. bituberculatus* seems to be especially similar to *L. bryocola* sp. nov. (see below), another unambiguous member of the *tropicalis*-group, and to *L. coomansi* Bosmans, 1979, known from Mount Kenya N.P., 2659 m a.s.l. (Bosmans 1979). The female of *L. bituberculatus* can easily be distinguished from *L. coomansi* by the much longer scape distinctly broadened apically. The male differs by the shape of the posterodorsal cymbial outgrowth, the presence of a stout tooth on the paracymbium, as well as the shape of the lamella characteristica.

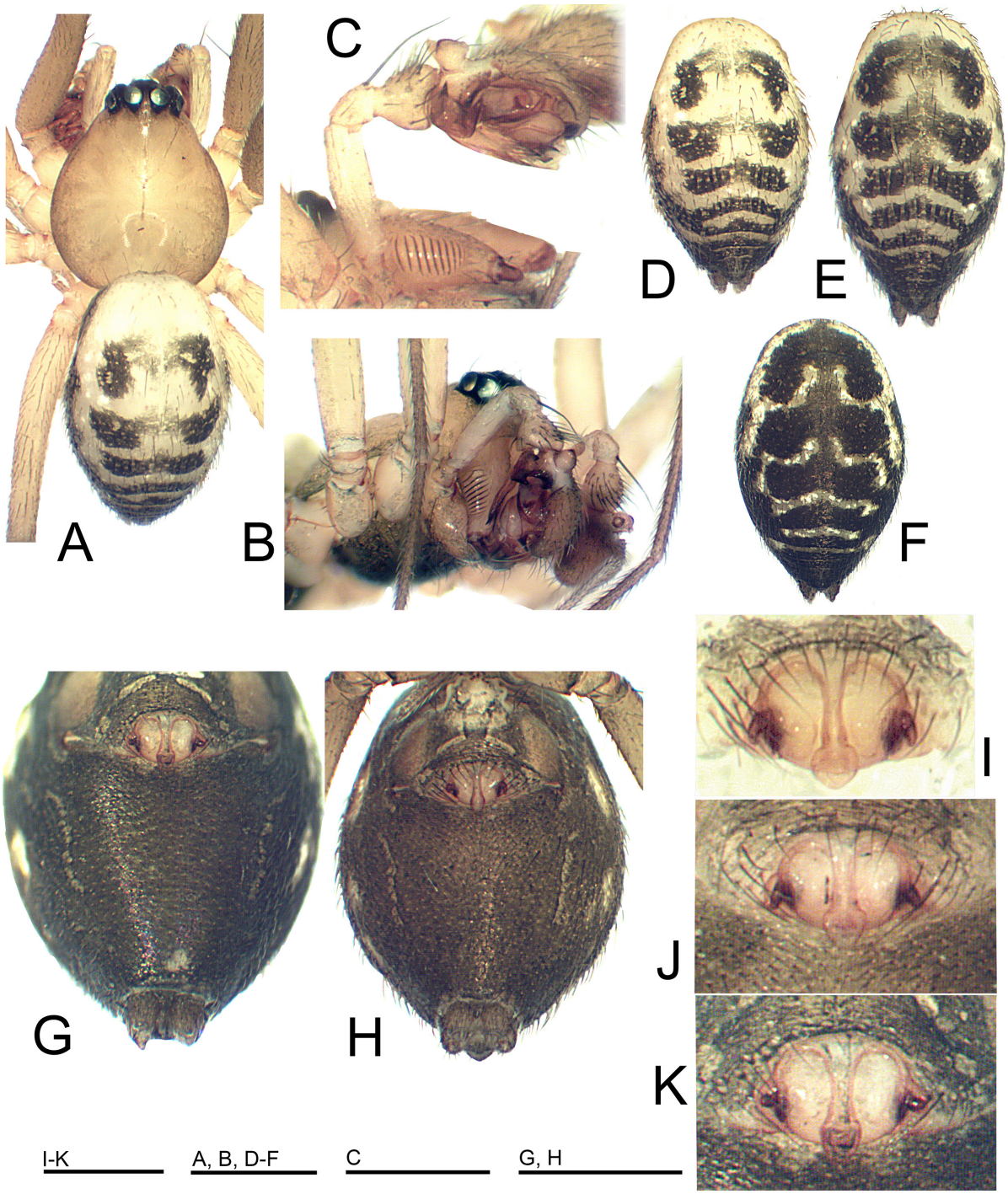

Fig. 3. Photographs of *Lepthyphantes bituberculatus* Bosmans, 1978. **A–D**. ♂♂. **E–K**. ♀♀. **A–E, G–K**. Specimens from Eth005 (ZMMU). **F**. Specimen from Eth016 (ZMMU). **A**. Habitus, dorsal view. **B**. Prosoma, frontolateral view. **C**. Right palp and chelicera, lateral view. **D–H**. Abdomen. **D–F**. Dorsal views. **G–H**. Ventral views. **I–K**. Epigyne, ventral views. Scale bars: I–K = 0.2 mm; A–H = 0.5 mm.

Material examined

ETHIOPIA • 7 ♂♂, 3 ♀♀; Addis-Ababa, Russian Embassy Area; 9.03593° N, 38.78579° E; 2478 m a.s.l.; 7 Oct. 2022; A. Tanasevitch leg.; *Juniperus*, *Acacia*, *Eucalyptus*, bushes, sifting litter and humus; [Eth002]; ZMMU • 5 ♂♂, 4 ♀♀; same data as for preceding; 9.03638° N, 38.78541° E; 2470 m a.s.l.; 8 Oct. 2022; A. Tanasevitch leg.; *Eucalyptus* grove with *Juniperus*, bushes, sifting litter and humus; [Eth003]; ZMMU • 21 ♂♂, 12 ♀♀; same data as for preceding; 9.0350476° N, 38.7836601° E; 2467 m a.s.l.; 10 Oct.–4. Nov. 2022; A. Tanasevitch leg.; *Eucalyptus* grove with *Juniperus*, *Acacia*, bushes, sifting litter and humus; [Eth004]; ZMMU • 42 ♂♂, 56 ♀♀; same data as for preceding; 9.03617° N, 38.78549° E; 2467 m a.s.l.; 11 Oct. –14 Nov. 2022; A. Tanasevitch leg.; grove with *Juniperus*, *Eucalyptus*, palm trees, bushes, sifting litter and humus; [Eth005]; ZMMU • 20 ♂♂, 20 ♀♀; same data as for preceding; MHNG • 2 ♂♂, 4 ♀♀; same data as for preceding; 9.03491° N, 38.78236° E; 2446 m a.s.l.; 12 Oct. 2022; A. Tanasevitch leg.; grove with *Eucalyptus*, *Juniperus*, bushes, tall grass, sifting litter and humus; [Eth006]; ZMMU • 6 ♂♂, 8 ♀♀; same data as for preceding; 9.03519° N, 38.78506° E; 2453 m a.s.l.; 13 Oct. 2022; A. Tanasevitch leg.; grove with *Acacia*, palm trees, *Eucalyptus*, *Juniperus*, bushes, sifting litter; [Eth007]; ZMMU • 16 ♂♂, 6 ♀♀; same data as for preceding; 9.03568° N, 38.78553° E; 2465 m a.s.l.; 4 Nov. 2022; A. Tanasevitch leg.; *Eucalyptus* grove with *Juniperus*, palm trees, bushes, tall grass, sifting litter and humus; [Eth021]; ZMMU • >36 ♂♂, 67 ♀♀; same data as for preceding; 9.03541° N, 38.7854° E; 2457 m a.s.l.; 7 Oct.–14 Nov. 2022; A. Tanasevitch leg.; *Eucalyptus* grove with *Juniperus*, palm trees, bushes, tall grass, sifting litter and humus; [Eth022]; ZMMU • 2 ♂♂, 7 ♀♀; same data as for preceding; 9.03468° N, 38.78379° E; 2454 m a.s.l.; 9 Nov. 2022; A. Tanasevitch leg.; *Eucalyptus* grove with sporadic *Juniperus*, *Acacia*, bushes, sifting litter and humus; [Eth023]; ZMMU • 1 ♂, 4 ♀♀; same data as for preceding; 9.0344° N, 38.78427° E; 2448 m a.s.l.; 9 Nov. 2022; A. Tanasevitch leg.; *Acacia* grove with sporadic *Eucalyptus*, bushes, sifting litter and humus under *Acacia*; [Eth024]; ZMMU • 1 ♂, 2 ♀♀; ca 7–8 air-km SE of Asela, Chilalo-Terara Volcano, Chilalo Mt, canyon, steep northern slope; 7.93524° N, 39.19368° E; 3080 m a.s.l.; 24 Oct. 2022; A. Tanasevitch leg.; *Hypericum revolutum* bushes with sporadic *Schefflera abyssinica*, grass, green mosses, sifting litter and mosses; [Eth016]; ZMMU • 1 ♂; Oromia Region, Asela Zone, ca 30 air-km SE of Asela, Arsi Mountains N.P., road from Digelu to Ticho; 7.81944° N, 39.35429° E; 3500–3505 m a.s.l.; 30 Oct.2022; A. Tanasevitch leg.; *Erica arborea* bushes, grass, green mosses, sifting mosses; [Eth018]; ZMMU.

Redescription

Male (Eth005, ZMMU)

Total length 2.20, habitus as in Fig. 3A. Carapace unmodified, 1.03 long, 0.80 wide, yellow to pale brown, with darken margins. Eyes not enlarged. Chelicerae 0.38 long. Stridulatory ridges well developed, as in Fig. 3B–C. Legs pale yellow to pale brown. Leg I 5.44 long (1.40+0.33+1.33+1.48+0.90), IV 5.01 long (1.30+0.30+1.23+1.38+0.80). Chaetotaxy. FeI: 0-1-0-0, FeII–IV: 0-0-0-0; TiI: 2-1-1-0; TiII–III: 2-0-1-0, IV: 2-1-1-0, MeI–IV: 1-0-0-0. Length of tibial spines 1.5–3 × diameter of corresponding leg segment. Metatarsi I–III each with a trichobothrium. TmI 0.19. Palp (Figs 3C, 4A–G): patella with long spine dorsally. Tibia unmodified. Cymbium with posterodorsal outgrowth of two lobes. Paracymbium relatively large, its proximal pocket (Saaristo & Tanasevitch 1996) transformed into large and stout tooth; other pockets reduced. Distal suprategular apophysis short, its ventral hook well developed. Pit-hook small claw. Lamella characteristica large, with two main branches, and few short and pointed twigs. Terminal apophysis membranous, vague in shape. Embolus small, with narrow stem; thumb well developed; embolus proper bifid. Fickert's gland very small. Abdomen 1.28 long, 0.80 wide, dorsal pattern as in Fig. 3D.

Female (Eth005, ZMMU)

Total length 2.53. Carapace unmodified, 1.13 long, 0.95 wide, coloration as in male. Chelicerae 0.50 long. Leg coloration as in male, leg I 5.36 long (1.38+0.35+1.35+1.40+0.88), IV 5.09 long

(1.38+0.30+1.28+1.33+0.80). Chaetotaxy. FeI: 0-1-0-0, FeII–IV: 0-0-0-0. Tibial spination different from male: TiI: 2-1-1-2; TiII: 2-1-1-2(1), TiIII–IV: 2-1-1-1. MeI–IV: 1-0-0-0. Length of tibial spines 1.5–3 × diameter of corresponding leg segment. Metatarsi I–III each with trichobothrium. TmI 0.18. Abdomen 1.70 long, 1.03 wide, dorsal pattern as in Fig. 3E–F. Epigyne as in Figs 3G–K, 4H–J. Scape a long, slender stripe, broadened distally. Median and distal parts of scape, lateral lobes, as well as stretcher totally reduced. Entrance ducts running along very edge of lateral wall of epigyne. Bursa

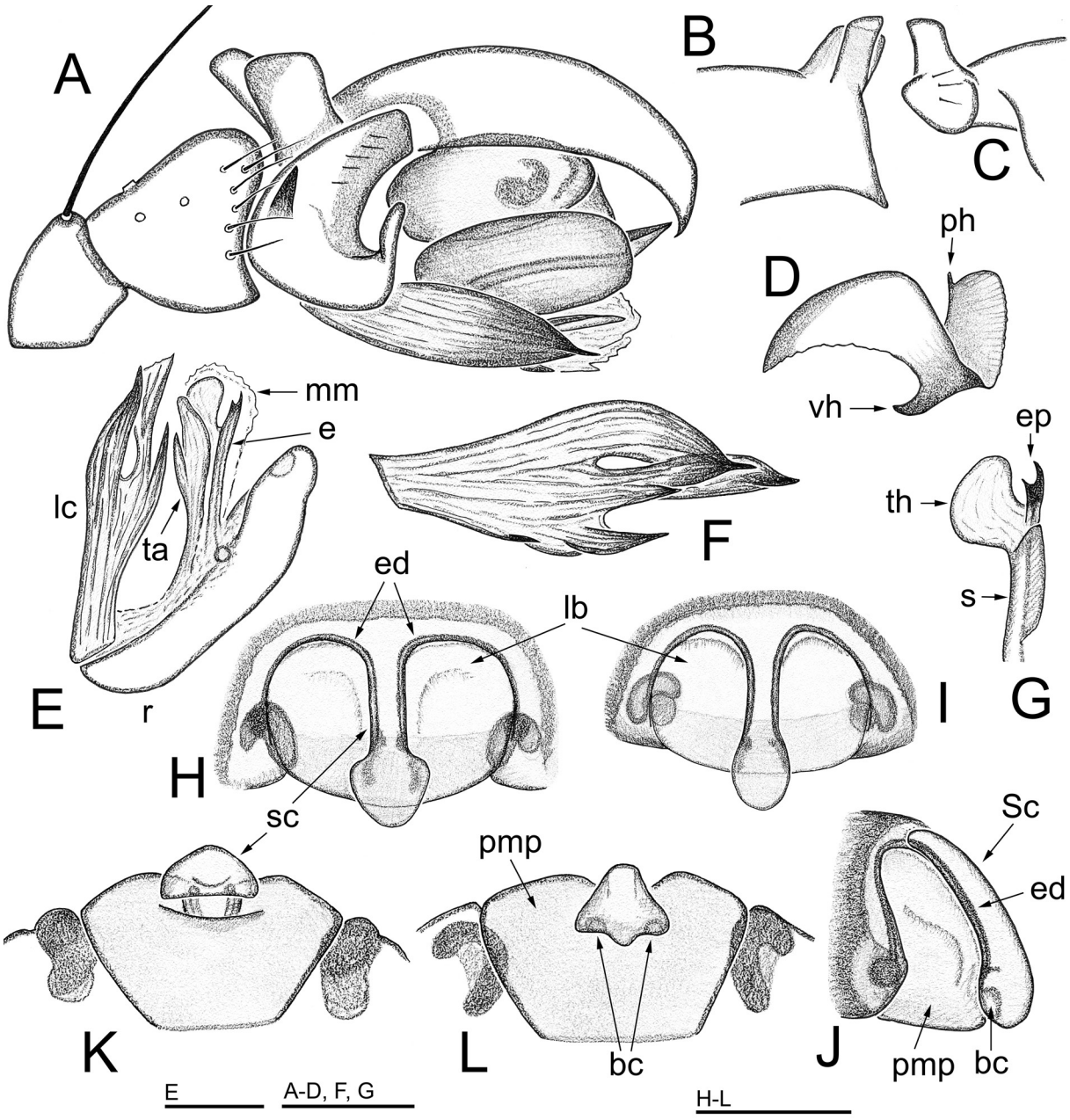

Fig. 4. Details of *Lepthyphantes bituberculatus* Bosmans, 1978 (Eth005; ZMMU) **A–G**. ♂, palpal structure. **H–J**. ♀, epigyne. **A**. Right palp, retrolateral view. **B–C**. Posterodorsal outgrowths, prolateral and dorsal view, respectively. **D**. Distal suprategular apophysis, lateral view. **E**. Embolic division, lateral view. **F**. Lamella characteristica, ventral view. **G**. Embolus, lateral view. **H–L**. Epigyne. **H–I**. Ventral view. **J**. Lateral view. **K–L**. Dorsal view. Scale bars = 0.1 mm. Abbreviations: see Material and methods.

copulatrix very small, opening on internal side of scape apex. Posterior median plate very large, with long and wide lateral branches covering entire aperture of epigyne from scape to lateral walls.

Variability

The shapes of the cymbial posterodorsal outgrowths in males varies slightly. The distal part of the scape varies from rounded to slightly pointed (Figs 3G–K, 4H–I).

Distribution

Known from Ethiopia: Amhara Region, the Simien Mountains N.P., 3300 m a.s.l. (Bosmans 1978), and from Oromia Region, altitude ranging from 2446 to 3505 m a.s.l.

Lepthyphantes chilalo sp. nov.

urn:lsid:zoobank.org:act:5DC1B0C6-8AFE-4A42-9323-EED2CAF0E781

Figs 5–6

Diagnosis

The species probably belongs to the *tropicalis* species-group, but, unlike other members, its epigyne lacks lateral lobes of the posterior median plate. *Lepthyphantes chilalo* sp. nov. is very similar to *L. legatus* sp. nov. (see below), a true member of the *tropicalis* group. The male differs by the shape of the cymbial posterodorsal outgrowth, which lacks apical denticles, vs serrate (Fig. 6A–C cf. Fig. 9A–C), as well as by the shape of the lamella characteristica, which has several branches, vs entire (Fig. 6H cf. Fig. 9H). The female differs by a triangular and shield-shaped scapus, vs oval (Fig. 6J cf. Fig. 9J).

Etymology

The species name is a noun in apposition, referring to Chilalo-Terara, an isolated extinct volcano, the terra typica of the new species.

Material examined

Holotype

ETHIOPIA • ♂; Oromia Region, Asela Zone, ca 7–8 air-km SE of Asela, Chilalo-Terara Volcano, Chilalo Mt, canyon, steep northern slope; 7.93524° N, 39.19368° E; 3080 m a.s.l.; 24 Oct. 2022; A. Tanasevitch leg.; *Hypericum revolutum* bushes with sporadic *Schefflera abyssinica*, grass, green mosses, sifting litter and mosses; [Eth016]; ZMMU.

Paratypes

ETHIOPIA • 3 ♀♀, together with holotype; same data as for holotype; ZMMU • 1 ♀; Asela Zone, ca 32 air-km SE of Asela, Arsi Mountains N.P., road from Digelu to Ticho, top of mountains; 7.82472° N, 39.41659° E; 3780–3866 m a.s.l.; 18 Oct. 2022; A. Tanasevitch leg.; *Erica arborea* bushes, sedge, *Alchemilla* sp., green mosses, sifting humus and mosses; [Eth010]; MHNG.

Description

Male (holotype, Eth016, ZMMU)

Total length 2.70. Carapace unmodified, 1.25 long, 1.05 wide, pale yellow, with grey median stripe and darkened margins, as in Fig. 5A. Eyes not enlarged. Chelicerae 0.50 long. Stridulatory ridges distinct, as in Fig. 5B. Legs pale yellow to pale brown. Leg I 7.06 long (1.95 + 0.38 + 1.83 + 1.80 + 1.10), IV 6.53 long (1.80 + 0.38 + 1.55 + 1.85 + 0.95). Chaetotaxy. FeI: 0-1-0-0, FeII–IV: 0-0-0-0; TiI: 2-1-1-3, II: 2-1-1-3(4), III–IV: 2-1-1-1(2); Me: I–IV: 2(1)-1-1-0. Length of tibial spines 2.5–3.5 × diameter of corresponding leg segment. Metatarsi I–III each with trichobothrium. TmI 0.19. Palp (Fig. 6A–I): patella with long

spine dorsally. Tibia unmodified. Cymbium with short, bent posterodorsal outgrowth pointed apically. Paracymbium relatively large, its apical pocket transformed into sharp and dentiform lobe. Distal suprategular apophysis short, abruptly truncated, its ventral hook broad and stout. Pit-hook slender, pale, poorly sclerotized, relatively long and slightly curved. Lamella characteristica well sclerotized, large, straight, tapering distally, with a slender, needle-shaped, pale process. Terminal apophysis membranous, vague in shape. Embolus with slender stem, thumb well developed, bent distally, embolus proper bifid. Fickert's gland small. Abdomen 1.53 long, 0.85 wide, dorsal pattern as in Fig. 5C.

Female (Eth016, ZMMU)

Total length 2.95, habitus as in Fig. 5 D–F. Carapace unmodified, 1.30 long, 1.05 wide. Chelicerae 0.75 long. Leg coloration as in male. Leg I 6.88 long (1.80+0.45+1.68+1.80+1.15), IV 6.11 long (1.73+0.40+1.45+1.63+0.90). Chaetotaxy. FeI: 0-1-0-0, FeII–IV: 0-0-0-0; TiI–II: 2-1-1-3(4), III–IV: 2-1-1-2(1); Me: I–IV: 2-1-1-0. Length of tibial spines 2.5–3.5 × diameter of corresponding leg segment. Metatarsi I–III each with trichobothrium. TmI 0.17. Abdomen 1.88 long, 1.25 wide, dorsal pattern as in Fig. 5D–G. Epigyne (Fig. 6J–M). Scapus triangular shield. All of its parts: proscapus, both median and distal, merged. Bursa copulatrix opening near middle of internal surface of scapus. Stretcher rudimentary, short, without pit. Posterior median plate large, broad, without lateral branches.

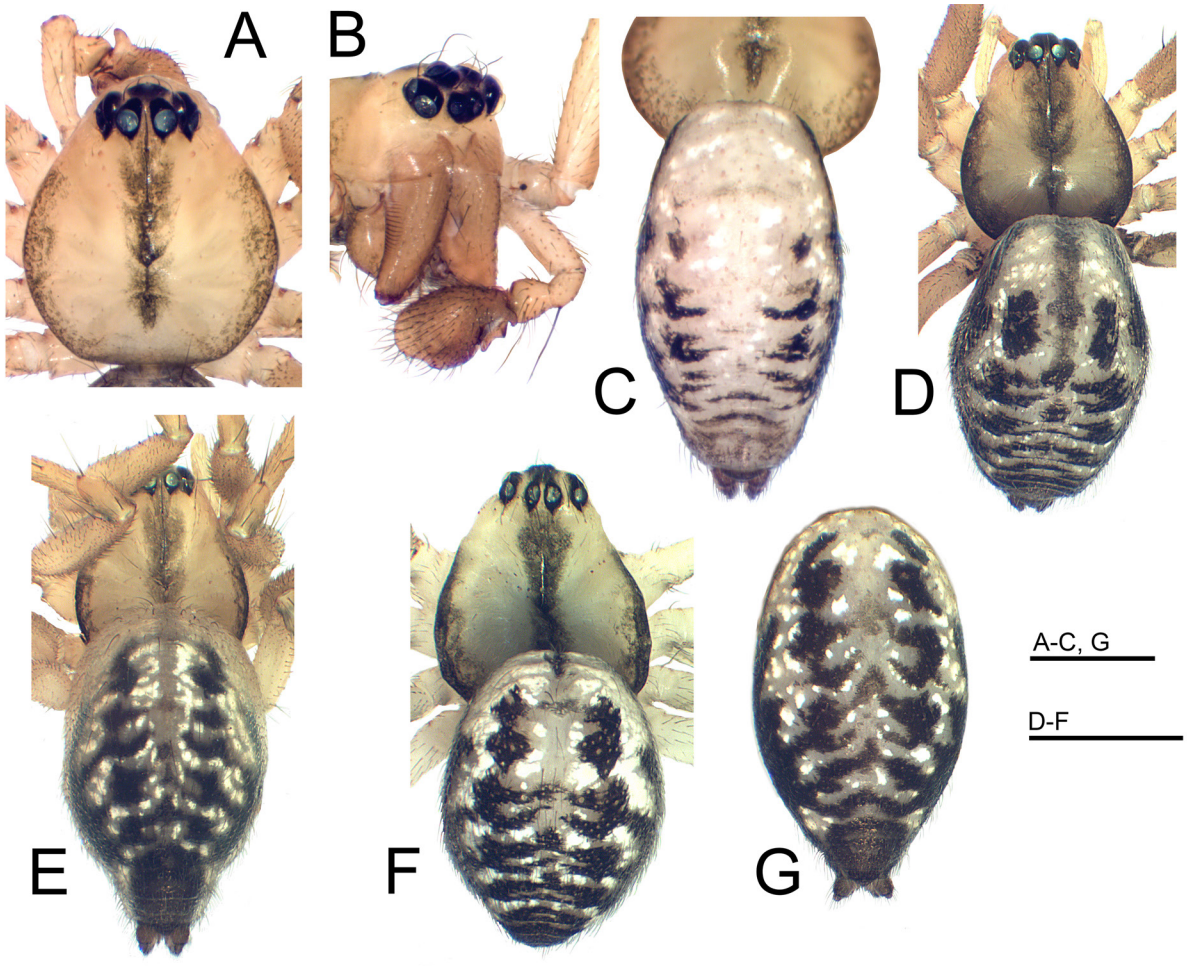

Fig. 5. Photographs of *Lepthyphantes chilalo* sp. nov. **A–C**. Holotype, ♂ (ZMMU). **D**. Paratypes, ♀♀ (Eth010; ZMMU). **E–G**. Paratypes, ♀♀ (Eth016; ZMMU). **A**. Prosoma, dorsal view. **B**. Same, frontolateral view. **C, G**. Abdomen, dorsal view. **D–F**. Habitus, dorsal views. Scale bars = 0.5 mm.

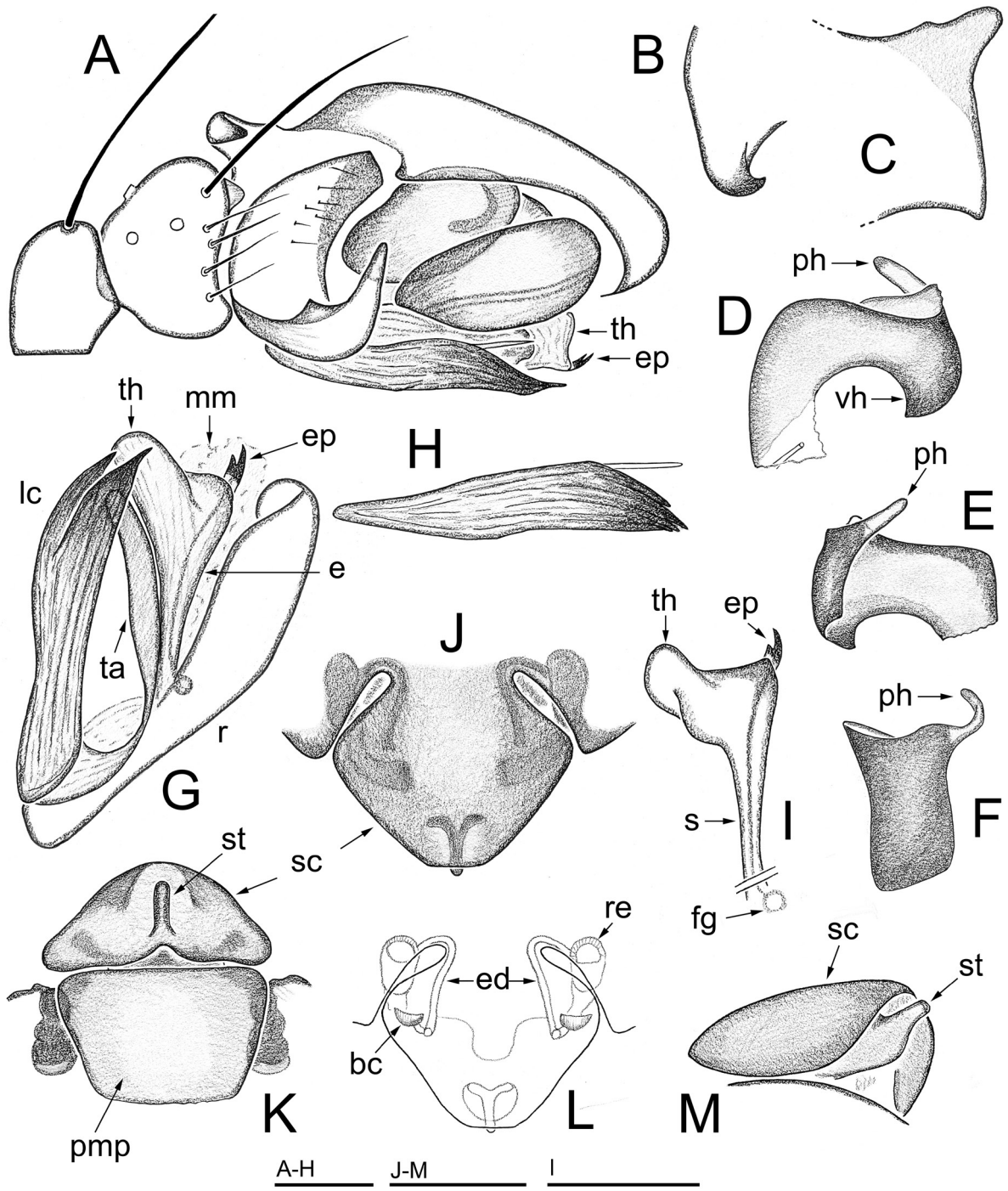

Fig. 6. of *Lepthyphantes chilalo* sp. nov. **A–I**. Holotype, ♂ (Eth016; ZMMU), palpal structure. **J–M**. Paratypes, ♀ (Eth010; ZMMU), epigyne. **A**. Right palp, retrolateral view. **B–C**. Posterodorsal outgrowths, dorsal and prolateral view, respectively. **D–F**. Distal suprategular apophysis, retrolateral, prolateral and frontal view, respectively. **G**. Embolic division, lateral view. **H**. Lamella characteristica, ventrolateral view. **I**. Embolus, lateral view. **J–M**. Epigyne. **J, L**. Ventral view. **K**. Dorsal view. **M**. Dorsolateral view. Scale bars = 0.1 mm. Abbreviations: see Material and methods.

Distribution

Known from the the Chilalo-Terara Volcano and from the Arsi Mountains N.P., Oromia Region, Ethiopia, altitude ranging from 3080 to 3866 m a.s.l.

Lepthyphantes bryocola sp. nov.
urn:lsid:zoobank.org:act:3EA69260-26E8-4F11-9643-AF07051B0F7F
Fig. 7

Diagnosis

Based on the structure of the scape, notably reduced in its median and distal parts, as well as of the hypertrophied posterior median plate, the species belongs to the *tropicalis* group, and it is most similar to *L. bituberculatus*. *Lepthyphantes bryocola* sp. nov. can easily be distinguished from *L. bituberculatus* by the much wider distal broadening of the scape (Fig. 7B cf. Fig. 4H–I).

Etymology

The specific epithet is a latinized noun in apposition derived from a Greek root, 'brya' and Latin '*cola*', together meaning 'moss-dweller'.

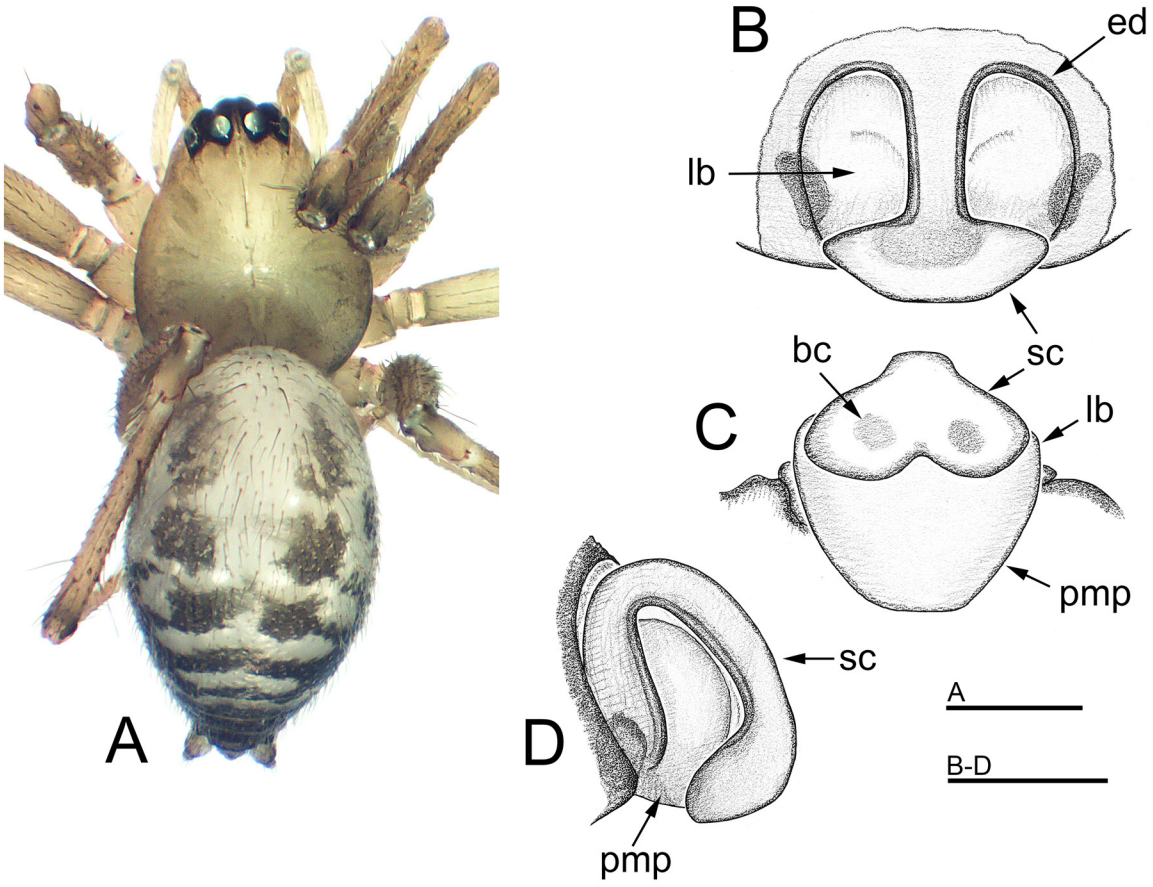

Fig. 7. Photograph and details of epigynal structure of *Lepthyphantes bryocola* sp. nov., holotype, ♀ (Eth019; ZMMU). **A**. Habitus, dorsal view. **B**–**D**. Epigyne, ventral, dorsal and lateral view, respectively. Scale bars: A = 0.5 mm; B–D = 0.1 mm. Abbreviations: see Material and methods.

Type material

Holotype

ETHIOPIA • ♀; Oromia Region, Asela Zone, ca 35 air-km SE of Asela (= Assela), Arsi Mountains N.P., road from Digelu to Ticho, top of mountains; 7.82377° N, 39.41713° E; 3755–3770 m a.s.l.; 21 Oct. 2022; A. Tanasevitch leg.; *Erica arborea* bushes, *Alchemilla* sp., green mosses mostly *Rhytidiadelphus triquetrus*, sifting mosses in beds of *Erica*; [Eth019]; ZMMU.

Description

Female

Total length 2.35, habitus as in Fig. 7A. Carapace unmodified, 1.05 long, 0.85 wide, greyish-yellow, with darken margins. Eyes not enlarged. Chelicerae 0.43 long. Legs greyish-yellow. Leg I 4.99 long (1.30+0.33+1.23+1.25+0.88), IV 4.80 long (1.35+0.30+1.20+1.20+0.75). Chaetotaxy. FeI: 0-1-0-0, FeII–IV: 0-0-0-0; TiI–II: 2-1-1-4, III–IV: 2-1-1-1; MeI: 1-1-0-0, II–IV: 1-0-0-0. Length of tibial spines 1.5–2.5 × diameter of corresponding leg segment. Metatarsi I–III each with a trichobothrium. TmI 0.12. Abdomen 1.45 long, 0.90 wide, dorsal pattern as in Fig. 7A. Epigyne (Fig. 7B–D): scape long, relatively slender, broadened distally. Median and distal parts of scape probably reduced, but was not dissected as only the holotype is known for this species. Entrance ducts running along the very edge of lateral wall of epigyne. Bursa copulatrix opening on internal side of scape widening. Posterior median plate with long and wide lateral branches covering entire aperture of epigyne from scape to lateral walls. Abdomen 1.45 long, 0.90 wide, dorsal pattern as in Fig. 7A.

Distribution

Known only from the holotype female, from the Arsi Mountains N.P., Oromia Region, Ethiopia, altitude ranging from 3755–3770 m a.s.l.

Lepthyphantes legatus sp. nov.

urn:lsid:zoobank.org:act:6DD4498C-EE94-44CE-AC8F-E91111A2AEB4

Figs 8–9

Etymology

The species name is the Latin noun meaning ‘ambassador’, referring to the place of origin, the Russian Embassy Area in Addis-Ababa.

Diagnosis

The species belongs to the *tropicalis* species-group, being especially similar to *Lepthyphantes chilalo* sp. nov. (see above).

Type material

Holotype

ETHIOPIA • ♂; Addis-Ababa, Russian Embassy Area; 9.03617° N, 38.78549° E; 2467 m a.s.l.; 11 Oct. 2022; A. Tanasevitch leg.; grove with *Juniperus*, *Eucalyptus*, palm trees, bushes, sifting litter and humus; [Eth005]; ZMMU.

Paratypes

ETHIOPIA • 1 ♂, together with holotype; same data as for holotype; [Eth005]; ZMMU • 3 ♂♂, 1 ♀; same data as for holotype; 3–6 Nov. 2022; A. Tanasevitch leg.; [Eth005]; ZMMU.

Description

Male (paratype, Eth005)

Total length 2.71, habitus as in Fig. 8A. Carapace unmodified, 1.15 long, 0.90 wide, pale yellow to pale brown, with grey median stripe and darkened margins. Eyes not enlarged. Chelicerae 0.45 long. Stridulatory ridges well developed, as in Fig. 8D. Legs pale yellow to pale brown. Leg I 7.21 long (1.83 + 0.35 + 1.80 + 2.03 + 1.20), IV 5.74 long (1.55 + 0.28 + 1.40 + 1.63 + 0.88). Chaetotaxy. FeI: 0-1-0-0, FeII–IV: 0-0-0-0; TiI–II: 2-1-1-4(3), III–IV: 2-1-1-2(1); Me: I–II:1-1-1-0, III–IV: 2(1)-1-0-0. Length of tibial spines 1.5–3 × diameter of corresponding leg segment. Metatarsi I–III each with a trichobothrium. TmI 0.19. Palp (Fig. 9A–I): patella with long spine dorsally. Tibia unmodified. Cymbium with short and bent posterodorsal outgrowth ending in three small, pointed teeth. Paracymbium relatively large, its apical pocket large, black, tooth-shaped. Distal suprategular apophysis short, abruptly truncate, with well developed ventral hook. Pit-hook claw-shaped, upright, pale, poorly sclerotized. Lamella characteristica large, well sclerotized, with few sharp branches varying in length. Terminal apophysis as long stripe.

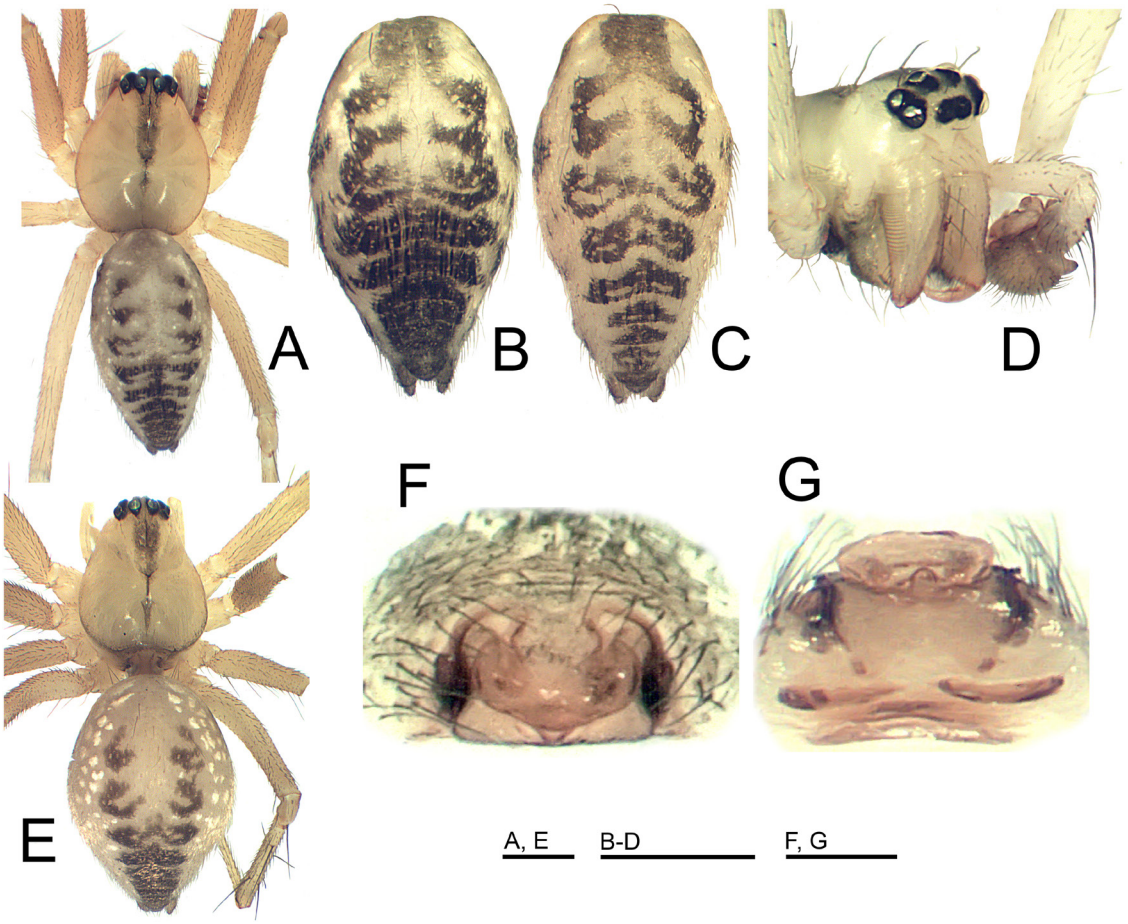

Fig. 8. Photographs of *Lepthyphantes legatus* sp. nov., paratypes (Eth005; ZMMU). **A–D**. ♂. **E–G**. ♀. **A, E**. Habitus, dorsal views. **B–C**. Abdomen, dorsal views. **D**. Prosoma, frontolateral view. **F–G**. Epigyne, ventral and dorsal view, respectively. Scale bars: A–E = 0.5 mm; F, G = 0.1 mm.

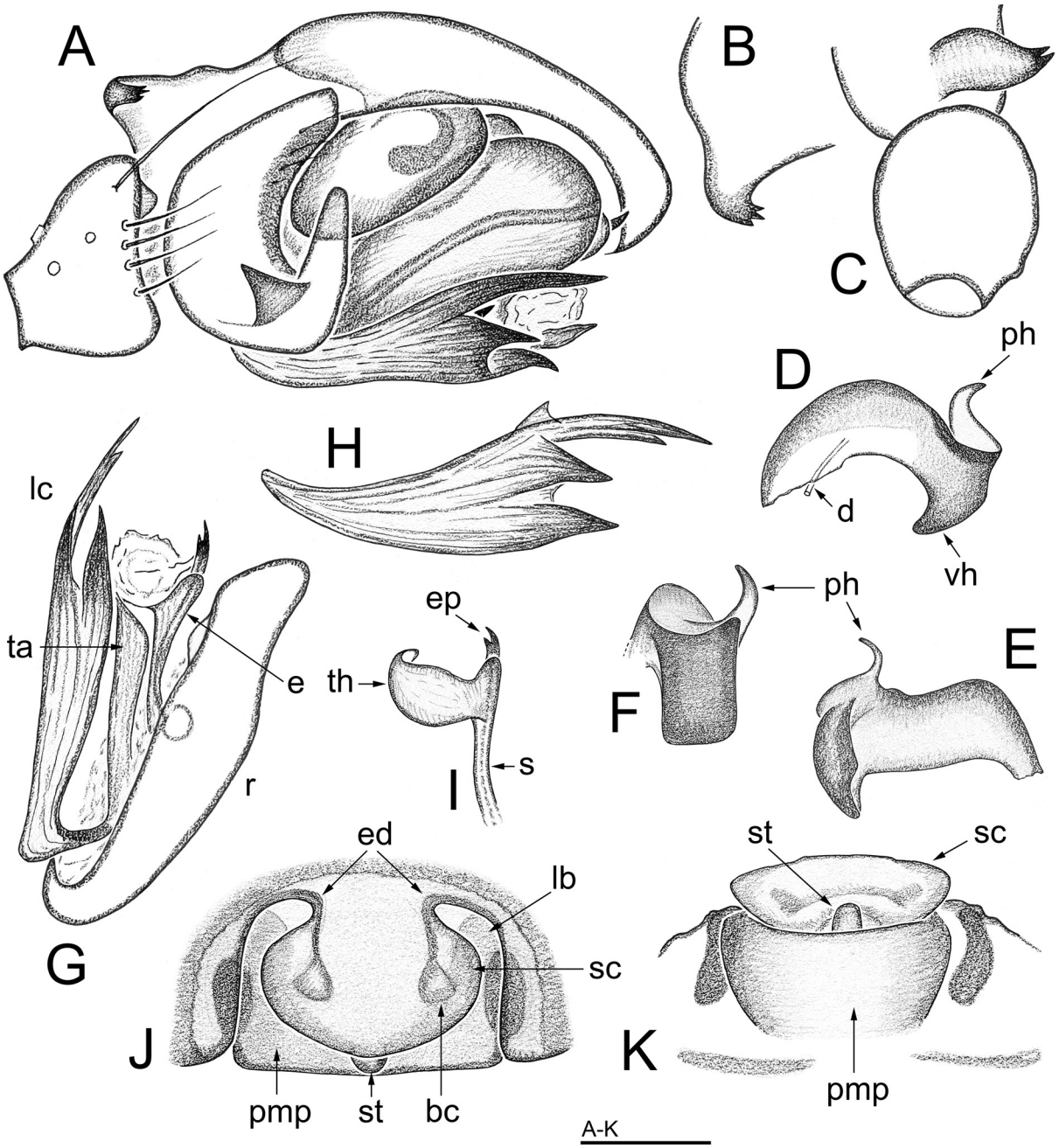

Fig. 9. *Lepthyphantes legatus* sp. nov., paratypes (Eth005; ZMMU). **A–I**. ♂, palpal structure **J–K**. ♀, epigyne. **A**. Right palp, retrolateral view. **B**. Posterodorsal outgrowth, dorsal view. **C**. Tibia and posterodorsal outgrowth, posterodorsal view. **D–F**. Distal suprategular apophysis, retrolateral, prolateral and frontal view, respectively. **G**. Embolic division, lateral view. **H**. Lamella characteristica, ventrolateral view. **I**. Embolus, lateral view. **J–K**. Epigyne, ventral and dorsal view, respectively. Scale bars = 0.1 mm. Abbreviations: see Material and methods.

Embolus with slender stem, thumb well developed, bent distally, embolus proper bifid. Abdomen 1.58 long, 0.83 wide, dorsal pattern as in Fig. 8A–C.

Female (paratype, Eth005)
Total length 3.15. Carapace unmodified, 1.25 long, 1.00 wide (Fig. 8E). Chelicerae 0.65 long. Carapace and leg coloration as in male. Leg I 7.19 long (1.88 + 0.43 + 1.75 + 2.00 + 1.13), IV 5.91 long (1.68 + 0.35 + 1.38 + 1.60 + 0.90). Chaetotaxy. FeI: 0-1-0-0, FeII–IV: 0-0-0-0; TiI–II: 2-1-1-4(3), III–IV: 2-1-1-2(1); MeI–II: 2-1-1-0, III–IV: 2(1)-1-0-0. Length of tibial spines 1.5–2.5 × diameter of corresponding leg segment. Metatarsi I–III each with a trichobothrium. TmI 0.19. Abdomen 2.00 long, 1.25 wide, dorsal pattern as in Fig. 8E. Epigyne (Figs 8F–G, 9J–K). Scape oval, its median and distal parts merged. Bursa copulatrix opening near middle of internal surface of scape. Stretcher rudimentary, short, without pit. Posterior median plate large, wide, its lateral branches covering entire aperture of epigyne.

Distribution

Known only from the territory of the Russian Embassy, Addis-Ababa, Ethiopia, at 2467 m a.s.l.

Metaleptyphantes Locket, 1968

Type species

Metaleptyphantes machadoi Locket, 1968, by original designation.

Remarks

Originally, the genus *Metaleptyphantes* was considered belonging to the subfamily Micronetinae (Brignoli 1983). Saaristo (2007) established a new subfamily, Ipainae Saaristo, 2007, to accommodate seven genera: *Epibellowia* Tanasevitch, 1996a, *Epigytholus* Tanasevitch 1996b, *Ipa* Saaristo, 2007 (the type genus), *Solenysa* Simon, 1894, *Uralophantes* Esyunin, 1992, *Wubanoides* Eskov, 1986, and *Metaleptyphantes*.

Recent publications have shown the subfamily Ipainae to be a paraphyletic group (Wang *et al.* 2015; Moreira & Hormiga 2022). However, only a few representatives of *Ipa* and *Solenysa* were included in the phylogenetic study, while the remaining five genera of the subfamily (see above), including *Metaleptyphantes*, remain untreated and thus 'hang in the air' as it were. As regards *Solenysa*, this genus was previously transferred to the subfamily Erigoninae (Tu & Hormiga 2011). So the question of the status and composition of Ipainae remains open, while below I consider this subfamily in the traditional sense, with the exception of *Solenysa*.

Most of the genera of Ipainae (sensu Saaristo 2007) show some similarities to each other in the male palpal and, particularly, epigynal structure. Unlike them, *Metaleptyphantes* has a palpal structure resembling the micronetine type (sensu Saaristo & Tanasevitch 1996) of the embolic division: a boat-shaped radix; aside from the embolus, the presence of two separate sclerites, i. e. the lamella characteristica (see its attachment to radix, PA in Fig. 10H) and the terminal apophysis (membranous); the embolus with a short embolus proper and a well developed embolus body (see Fig. 11D–F), connected to the radix by a membranous tissue. In addition, the habitus, chaetotaxy and trichobothriotaxy also conform to micronetines.

The epigynal structures of the female are very similar within the subfamily, including *Metaleptyphantes*, but they are completely different from those of micronetines. All genital structures of the female are concentrated inside a bulb-shaped container termed differently by various authors: a "sclerotized region" and a "terminal region" by Locket (1968); a "plate" by Holm (1968); a "chitinized part at the

end of a protruding scape" by Scharff (1990); a "spavin-like epigyne" by Saaristo (2002). Hereafter, I term this bulb-shaped container a "capsula". In most Ipainae, this capsula is connected to the abdomen through bellow-shaped formations differing in length and devoid of secondary sexual characters. That connection was denominated a "scape" by Locket (1968); a "wrinkled-ribbed base" by Helsdingen (1985); a "weakly chitinized stalk" by Saaristo (2002); etc. A special term for this structure was proposed by Tu & Li (2006) a "solenoid base", and later a "solenoid" by Tu *et al.* (2007).

This capsula-on-solenoid-type of the epigyne was the main and perhaps the only reason for including the genus *Metaleptyphantes* in the subfamily Ipainae, despite the structure of the male palp which is drastically different from that of the other members. Based on the micronetine-like structure of the palp, as well as the similar habitus, chaetotaxy and trichobothriotaxy, I consider that most likely the genus *Metaleptyphantes* belongs to the subfamily Micronetinae, not to Ipainae.

Species included

The genus was created to accommodate seven Afrotropical species: *Metaleptyphantes bifoliatus* Locket, 1968, *M. carinatus* Locket, 1968, *M. clavator* Locket, 1968, *M. machadoi* Locket, 1968, *M. vicinus* Locket, 1968, *M. perexiguus* (Simon & Fage, 1922), and *M. praecipuus* Locket, 1968. Presently, the genus consists of 16 Afrotropical species and one Oriental, *Metaleptyphantes kraepelini* (Simon, 1905), from Java, Indonesia (Word Spider Catalog 2024).

Distribution

Old-World tropics.

Metaleptyphantes subclavator sp. nov.
urn:lsid:zoobank.org:act:C40DA7CD-28CA-417E-AE47-988B29C56856
Figs 10–11

Diagnosis

The new species is very similar to *M. clavator*, but differs by the shape of the posterior and anterior pockets of the paracymbium (Fig. 11C cf. Locket 1968: fig. 28a), and a much smaller pit-hook (Fig. 11A, C cf. Locket 1968: fig. 28b–c) in the male. The female is distinguished by the more widely spaced capsula horns (Figs 10I, 11I cf. Locket 1968: fig. 29a).

Etymology

The species epithet derives from the similarity of the new species to *Metaleptyphantes clavator* Locket, 1968.

Type material

Holotype

ETHIOPIA • ♂; Addis-Ababa, Russian Embassy Area; 9.03519° N, 38.78506° E; 2453 m a.s.l.; 13 Oct. 2022; A. Tanasevitch leg.; grove with *Acacia*, palm trees, *Eucalyptus*, *Juniperus*, bushes, sifting litter; [Eth007]; ZMMU.

Paratypes

ETHIOPIA • 2 ♂♂, 4 ♀♀, together with holotype; same data as for holotype; ZMMU • 2 ♀♀; same data as for holotype; 9.03593° N, 38.78579° E; 2478 m a.s.l.; 7 Oct. 2022; A. Tanasevitch leg.; *Juniperus*, *Acacia*, *Eucalyptus*, bushes, sifting litter and humus; [Eth002]; ZMMU • 3 ♀♀; same data as for holotype; 9.03638° N, 38.78541° E; 2470 m a.s.l.; 3 Nov.2022; A. Tanasevitch leg.; *Eucalyptus* grove with *Juniperus*, bushes, sifting litter and humus; [Eth003]; ZMMU • 7 ♀♀; same data as for holotype;

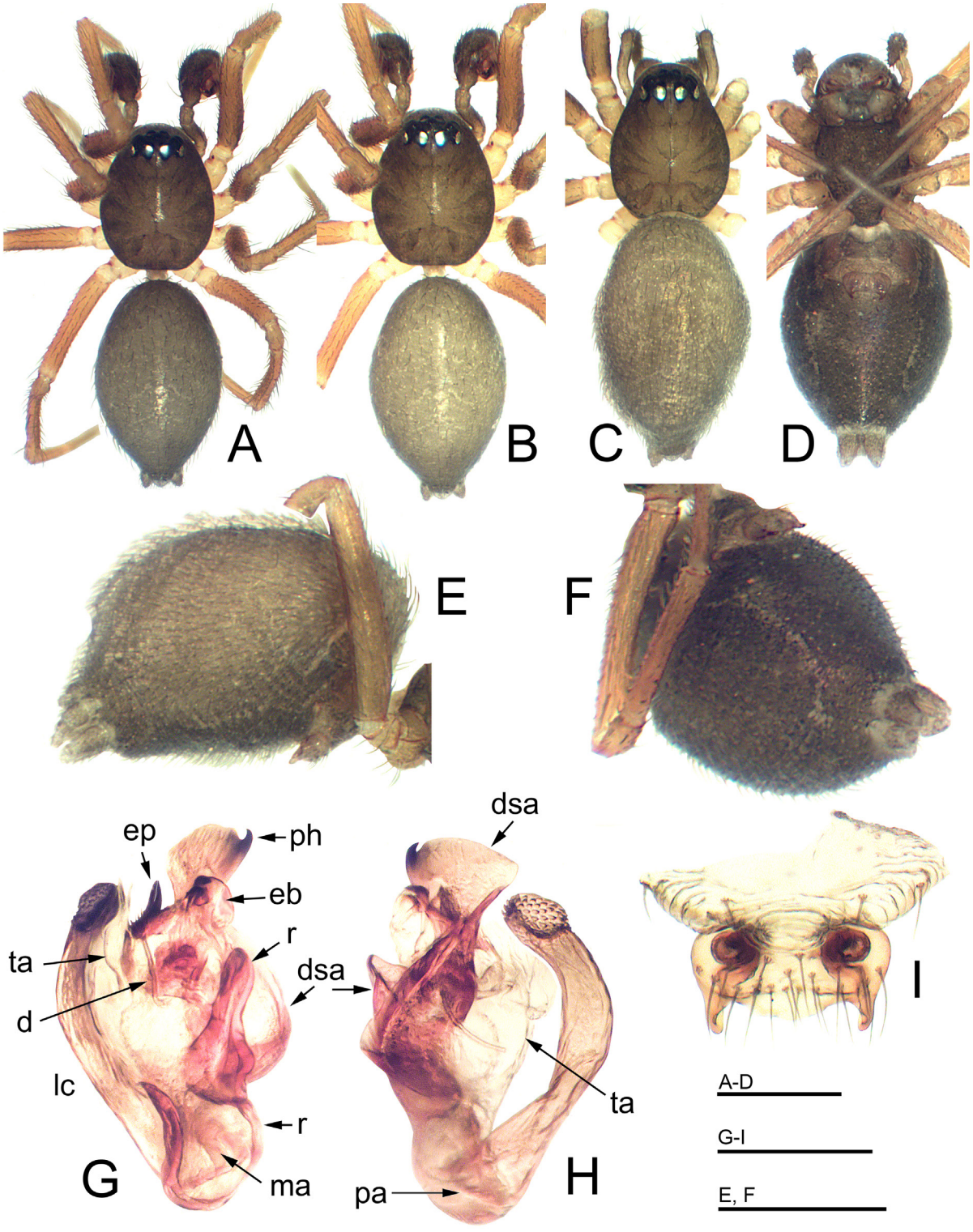

Fig. 10. Photographs of *Metaleptyphantes subclavator* sp. nov., paratypes (Eth005; ZMMU). **A–B, G–H**. ♂♂. **C–F, I**. ♀♀. **A–D**. Habitus, dorsal views. **E–F**. Abdomen, lateral views. **G–H**. Embolic division, ventral and dorsal view, respectively. **I**. Cleared epigyne, ventral view. Scale bars: A–F = 0.5 mm; G–I = 0.1 mm. Abbreviations: see Material and methods.

9.03617° N, 38.78549° E; 2467 m a.s.l.; 3 Oct.–6 Nov. 2022; A. Tanasevitch leg.; grove with *Juniperus*, *Eucalyptus*, palm trees, bushes, sifting litter and humus; [Eth005]; ZMMU • 2 ♂♂, 4 ♀♀; same data as for holotype; MHNG • 1 ♂, 2 ♀♀; same data as for holotype; 9.03541° N, 38.7854° E; 2457 m a.s.l.; 7 and 13 Nov. 2022; A. Tanasevitch leg.; *Eucalyptus* grove with *Juniperus*, palm trees, bushes, tall grass, sifting litter and humus; [Eth022]; ZMMU • 1 ♀; Oromia Region, 67 air-km E of Addis-Ababa, 5 air-km NE of Ginchi, Chilimo State Forest, near road, spring valley; 9.07061° N, 38.15804° E; 2584 m a.s.l.;

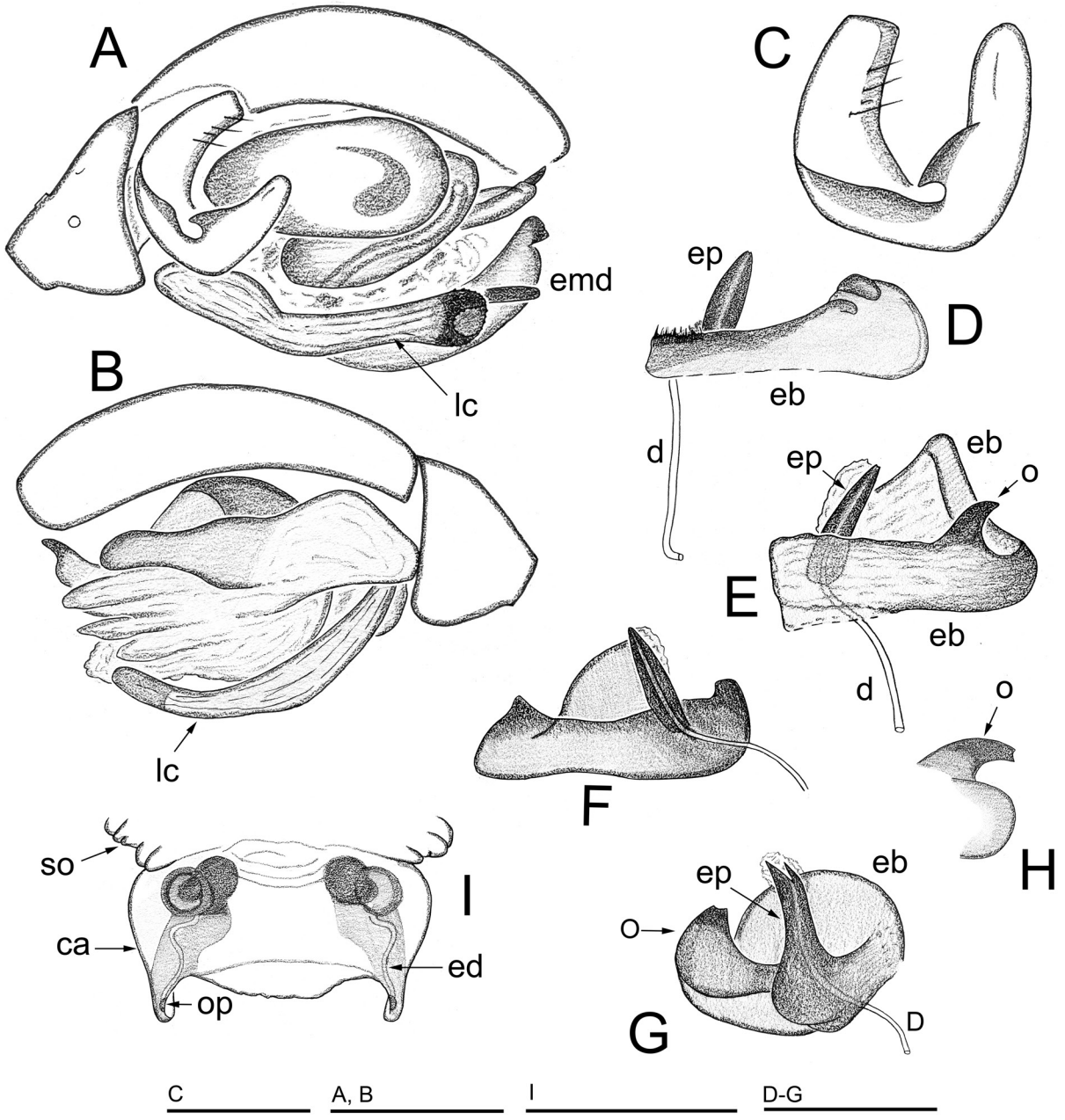

Fig. 11. *Metaleptyphantes subclavator* sp. nov., paratypes (Eth005; ZMMU). **A–H**. ♂, palpal structure. **I**. ♀, epigyne. **A**–**B**. Right palp, retrolateral and prolateral view, respectively. **C**. Paracymbium, lateral view. **D**–**G**. Embolus (embolus proper and embolus body), different aspects. **H**. Outgrowth of embolus body. **I**. Cleared epigyne, ventral view. Scale bars: A–C, I = 0.1 mm; D–G = 0.05 mm; H = not to scale. Abbreviations: see Material and methods.

15 Oct. 2022; A. Tanasevitch leg.; *Podocarpus falcatus* forest with *Juniperus procera*, *Prunus africana*, *Olea europaea*, *Hagenia abyssinica*, *Apodytes dimidiata*, *Ficus* spp., *Erythrina brucei*, grass, sifting litter and humus; [Eth008]; ZMMU.

Description

Male (paratype, Eth005)

Total length 1.63, habitus as in Fig. 10A–B. Carapace slightly modified, with a shallow depression behind ocular area, 0.70 long, 0.53 wide; darkish-brown, with dark radial stripes. Eyes not enlarged. Chelicerae 0.23 long. Legs greyish-yellow to pale brown, femora darkened. Leg I 2.58 long (0.75 + 0.20 + 0.65 + 0.53 + 0.45), IV 2.66 long (0.73 + 0.20 + 0.70 + 0.63 + 0.40). Chaetotaxy. Femora and metatarsi spineless. TiI–IV: 2-2-2-2, lateral and ventral spines absent. Length of tibial spines 1–1.5 × diameter of corresponding leg segment. Metatarsi I–III each with trichobothrium. TmI 0.25. Palp (Figs 10G– H, 11A–H): tibia small, unmodified, without special spine. Paracymbium relatively small, its anterior pocket dark, claw-shaped, posterior pocket low, poorly developed ridge. Distal suprategular apophysis broadened distally, pit-hook small. Lamella characteristica shaped like long ribbon slightly bent near middle and ending in spoon-shaped structure carrying numerous small black teeth. Terminal apophysis membranized, vague in shape. Embolus with relatively large body of obscure shape, possessing a special outgrowth (O in Fig. 11E, H, G). Embolus proper black, straight, thickened, bifid distally. Fickert's gland absent. Abdomen 0.93 long, 0.55 wide, grey to dark grey, dorsal pattern absent, as in Fig. 10A–B.

Female (paratype, Eth005)

Total length 1.68, habitus as in Fig. 10C–D. Carapace with shallow depression behind ocular area, 0.65 long, 0.48 wide. Chelicerae 0.25 long. Leg I 2.28 long (0.60 + 0.20 + 0.55 + 0.53 + 0.40), IV 2.68 long (0.63 + 0.60 + 0.55 + 0.55 + 0.35). TmI 0.29. Abdomen 1.00 long, 0.63 wide (Fig. 10C–D). Epigyne (Figs 10E–F, I, 11I): capsula with two short lateral horns; solenoid present, its proximal part hidden under integument. Receptacles subspherical, entrance ducts curved, opening on inner surface of horns. Body and leg coloration, chaetotaxy as in male.

Distribution

Known only from the Oromia Region, Ethiopia, altitude ranging from 2453 to 2584 m a.s.l.

Discussion

In recent years, the conflict between traditional and molecular phylogenetic taxonomy has become increasingly obvious. Molecular phylogenetic approaches fail yet to offer any alternative classifications and/or nomenclature solutions that could be used in taxonomy within the framework of the existing ICZN rules. This causes confusion and frustration among traditional taxonomists. Sometimes, this results in direct conflicts with the traditional classical typological studies. For example, in the cladogram in Fig. 10 (Arnedo & Hormiga 2021), the type genus *Microneta* Menge, 1869, is in the clade Erigoninae (!), but not in the nominative clade Micronetinae, which appears to encompass a number of relatives closest to *Microneta*, namely, *Lepthyphantes* (s. str.) Menge, 1866, *Anguliphantes* Saaristo & Tanasevitch, 1996, *Bolyphantes* C.L. Koch, 1837, *Tenuiphantes* Saaristo & Tanasevitch, 1996; etc. all of which belong to the tribe Lepthyphantini sensu Saaristo (1977). The homology of the genital sclerites in these genera has been confirmed by many taxonomic studies, being especially evident from the drawings by Michael Saaristo, posthumously published by Marusik & Koponen (2008). The nominative genus *Microneta* fell into another subfamily, Erigoninae, in which the secondary genital organs are totally different (see Merrett 1963; Millidge 1977; etc.). It seems completely impossible that the similarity of the genitalic and somatic characters of the representatives of the Lepthyphantini tribe is a result of homoplasy.

Undoubtedly, monophyly is fundamental in the systematics for accurately reflecting evolutionary relationships. In this regard, molecular phylogenetics, whose methods, however, are still imperfect, have advantage over the traditional typology upon which the entire classification of Linyphiidae is currently based. It is also quite obvious that the classification of Linyphiidae requires revision. However, it would be desirable that the results of molecular studies could be compared and are comparable with the outcomes of classical typological studies and finally could offer an alternative classification in which new taxa/categories would be formalized from a nomenclatural viewpoint to be used within the framework of the existing ICZN rules (https://www.iczn.org).

The present paper adds six species from a few mountainous areas of Ethiopia to the three micronetine species recorded earlier from the country: *Lepthyphantes acuminifrons*, *L. bituberculatus* and *L. simiensis*. Of the nine micronetine species of the region, five belong to the genus *Lepthyphantes* sensu lato (see Remarks above under *Lepthyphantes*), and one, *L. simiensis*, representing *Lepthyphantes* sensu stricto. *Lepthyphantes* (s. str.) includes only seven species in the world fauna (Tanasevitch 2020), *L. simiensis* being the first representative in the fauna of the Afrotropical Region. All remaining five species of *Lepthyphantes* (s. lat.) belong into the Afrotropical *tropicalis* group. Considering the above new information, this species-group presently comprises eight species, but its actual diversity appears to be significantly higher, including most of the known Afrotropical members of the genus *Lepthyphantes* (Tanasevitch, in prep.).

Species of the Mediterranean genus *Canariphantes* in Africa have hitherto been known only from the northern, Palearctic part of the continent. *Canariphantes trichofer* sp. nov. is the first representative of the genus to be reported from the Afrotropical Region. As *Agyneta prosectes* and members of *Metaleptyphantes* are widespread in the Afrotropics, their discoveries in Ethiopia are not too surprising.

Acknowledgments

I am deeply grateful to Dr Leonid Rybalov (Moscow), chief of the invertebrate group of the Joint Russian-Ethiopian Biological Expedition, for the opportunity to participate in the field work in Ethiopia. Thanks also go to Dr Sci. Sergei Golovatch (Moscow) who kindly checked the English of an early draft, to Dr Gustavo Hormiga (Washington) and anonymous referees for constructive critiques of the manuscript. The work was performed within the framework of the Joint Russian-Ethiopian Biological Expedition, financially supported by the Russian Academy of Sciences. I am grateful to Dr Gezahegn Degefe (Debre Birhan, Ethiopia) for supporting the field studies and organizing laboratory works. Collecting of material was conducted under the current agreement of 17 Dec. 2020 between the Russian Academy of Sciences and the Ministry of Innovation and Technology of the Federal Democratic Republic of Ethiopia.

References

Arnedo M.A. & Hormiga G. 2021. Repeated colonization, adaptive radiation and convergent evolution in the sheet-weaving spiders (Linyphiidae) of the south Pacific Archipelago of Juan Fernandez. *Cladistics* 37 (3): 317–342. https://doi.org/10.1111/cla.12437

Arnedo M.A., Hormiga G. & Scharff N. 2009. Higher level phylogenetics of linyphiid spiders (Araneae, Linyphiidae) based on morphological and molecular evidence. *Cladistics* 25: 231–262. https://doi.org/10.1111/j.1096-0031.2009.00249.x

Blackwall J. 1859. Descriptions of newly discovered spiders captured by James Yate Johnson Esq., in the island of Madeira. *Annals and Magazine of Natural History* 3–4, 22: 255–267. https://doi.org/10.1080/00222935908697122

Bosmans R. 1978. Description of four new *Lepthyphantes* species from Africa, with a redescription of *L. biseriatus* Simon & Fage and *L. tropicalis* Tullgren. *Bulletin of the British Arachnological Society* 4: 258–274.

Bosmans R. 1979. Spiders of the subfamily Linyphiinae from Mount Kenya (Araneae - Linyphiidae). Scientific report of the Belgian Mt. Kenya Bio-Expedition 1975, n° 17. *Revue Zoologique Africaine* 93: 53–100.

Brignoli P.M. 1983. *A Catalogue of the Araneae Described Between 1940 and 1981*. Manchester University Press.

Crespo L.C., Bosmans R., Cardoso P. & Borges P.A.V. 2014. On three endemic species of the linyphiid spider genus *Canariphantes* Wunderlich, 1992 (Araneae, Linyphiidae) from the Azores archipelago. *Zootaxa* 3841 (3): 403–417. https://doi.org/10.11646/zootaxa.3841.3.5

Denis J. 1964. On a collection of erigonid spiders from North Africa. *Proceedings of the Zoological Society of London* 142 (3): 379–390. https://doi.org/10.1111/j.1469-7998.1964.tb04504.x

Eskov K.Y. 1986. On *Veles* Pakhorukov 1981 and *Wubanoides* n. gen., two Siberian linyphiid genera (Arachnida: Araneae: Linyphiidae). *Senckenbergiana Biologica* 67: 173–182.

Esyunin S.L. 1992. Remarks on the Ural spider (Arachnida, Aranei) fauna 2. New genera and species from the family Linyphiidae. *Zoologicheskii Zhurnal* 71 (12): 136–139. [In Russian.]

Helsdingen P.J. van 1965. Sexual behaviour of *Lepthyphantes leprosus* (Ohlert) (Araneida, Linyphiidae), with notes on the function of the genital organs. *Zoologische Mededelingen* 41: 15–42.

Helsdingen P.J. van 1969. A reclassification of the species of *Linyphia* Latreille based on the functioning of the genitalia (Araneida, Linyphiidae), I. *Zoologische Verhandelingen* 105: 1–303.

Helsdingen P.J. van 1985. Araneae: Linyphiidae of Sri Lanka, with a note on Erigonidae. *Entomologica Scandinavica, Supplement* 30: 13–30.

Helsdingen P.J. van 1986. World distribution of Linyphiidae. *Proceedings of the Ninth International Congress of Arachnology, Panama 1983*: 121–126. Smithsonian Institution Press, Washington D.C.

Helsdingen P.J. van, Thaler K. & Deltshev C. 1977. The *tenuis* group of *Lepthyphantes* Menge (Araneae, Linyphiidae). *Tijdschrift voor Entomologie* 20: 1–54.

Holm Å. 1968. Spiders of the families Erigonidae and Linyphiidae from East and Central Africa. *Annales du Musée Royal de l'Afrique Centrale, Sciences zoologiques* 171: 1–49.

Hormiga G. 2000. Higher level phylogenetics of erigonine spiders (Araneae, Linyphiidae, Erigoninae). *Smithsonian Contributions to Zoology* 609: 1–160.

Hull J.E. 1911. Papers on spiders. *Transactions of the Natural History Society of Northumberland, Durham, and Newcastle-upon-Tyne (N.S.)* 3 (3): 573–590.

Hull J.E. 1920. The spider family Linyphiidae: an essay in taxonomy. *The Vasculum* 6: 7–11.

ICZN (International Commission on Zoological Nomenclature) 1999ICZN 1999. International Code of Zoological Nomenclature. 4th Edition. *The International Trust for Zoological Nomenclature*. London, UK. Available from http://iczn.org [accessed Jan. 2025].

Jocqué R. 1996. Notes on African Linyphiidae (Araneae) V. *Murphydium*, a new genus from East-Africa. *Bulletin & Annales de la Société Entomologique de Belgique* 132: 235–243.

Kioko G.M., Marusik Y.M., Li S.Q., Kioko E.N. & Ji L.Q. 2021. Checklist of the spiders (Araneae) of Kenya. *African Invertebrates* 62 (1): 49–229. https://doi.org/10.3897/AfrInvertebr.62.58776

Koch C.L. 1837 *Übersicht des Arachnidensystems*. Heft 1. C.H. Zeh'sche Buchhandlung, Nürnberg. https://doi.org/10.5962/bhl.title.39561

Kulczyński W. 1898 Symbola ad faunam aranearum Austriae inferioris cognoscendam. *Rozprawy i sprawozdania z posiedzeń Wydziału Matematyczno Przyrodniczego Akademji Umiejętności, Kraków* 36: 1–114.

Locket G.H. 1968. Spiders of the family Linyphiidae from Angola. *Publicações Culturais da Companhia de Diamantes de Angola* 71: 61–144.

Locket G.H. & Russell-Smith A. 1980. Spiders of the family Linyphiidae from Nigeria. *Bulletin of the British Arachnological Society* 5 (2): 54–90.

Marusik Y.M. & Koponen S. 2008. Obituary. Michael Ilmari Saaristo (1938–2008). *Arthropoda Selecta* 17: 4–16.

Menge A. 1866. Preussische Spinnen. Erste Abtheilung. *Schriften der Naturforschenden Gesellschaft in Danzig (N.F.)* 1: 1–152.

Menge A. 1869. Preussische Spinnen. III. Abtheilung. *Schriften der Naturforschenden Gesellschaft in Danzig (N.F.)* 2: 219–264.

Merrett P. 1963. The palpus of male spiders of the family Linyphiidae. *Proceedings of the Zoological Society of London* 140 (3): 347–467.

Millidge A.F. 1977. The conformation of the male palpal organs of linyphiid spiders, and its application to the taxonomic and phylogenetic analysis of the family (Araneae: Linyphiidae). *Bulletin of the British Arachnological Society* 4: 1–60.

Saaristo M.I. 1971. Revision of the genus *Maro* O.P. Cambridge (Araneae, Linyphiidae). *Annales Zoologici Fennici* 8: 463–482.

Saaristo M.I. 1973. Taxonomical analysis of the type-species of *Agyneta*, *Anomalaria*, *Meioneta*, *Aprolagus*, and *Syedrula* (Araneae, Linyphiidae). *Annales Zoologici Fennici* 10: 451–466.

Saaristo M.I. 1977. Secondary genital organs in the taxonomy of Lepthyphantinae (Araneae, Linyphiidae). *Reports from the Department of Zoology, University of Turku* 5: 1–16.

Saaristo M.I. 2002. New species and interesting new records of spiders from Seychelles (Arachnida, Araneaea [sic]). *Phelsuma* 10 (Suppl. A): 1–31.

Saaristo M.I. 2007. A new subfamily of linyphiid spiders based on a new genus created for the *keyserlingi*-group of the genus *Lepthyphantes* (Aranei: Linyphiidae). *Arthropoda Selecta* 16 (1): 33–42.

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.

Saaristo M.I. & Tanasevitch A.V. 1996. Redelimitation of the subfamily Micronetinae Hull, 1920 and the genus *Lepthyphantes* Menge, 1866 with descriptions of some new genera (Aranei, Linyphiidae). *Berichte des naturwissenschaftlich-medizinischen Vereins in Innsbruck* 83: 163–186.

Saaristo M.I. & Tanasevitch A.V. 1999. Reclassification of the *mughi*-group of the genus *Lepthyphantes* Menge, 1866 (*sensu lato*) (Araneae: Linyphiidae: Micronetinae). *Berichte des naturwissenschaftlich-medizinischen Vereins in Innsbruck* 86: 139–147.

Saaristo M.I. & Tanasevitch A.V. 2000. Systematics of the *Bolyphantes-Poeciloneta* genus-group of the subfamily Micronetinae Hull, 1920 (Arachnida: Araneae: Linyphiidae). *Reichenbachia* 33: 255–265.

Saaristo M.I. & Tanasevitch A.V. 2001. Reclassification of the *pallidus*-, *insignis*- and *spelaeorum*-groups of *Lephthyphantes* Menge, 1866 (*sensu lato*) (Arachnida: Araneae: Linyphiidae: Micronetinae). *Reichenbachia* 34: 5–17.

Saaristo M.I. & Tanasevitch A.V. 2004. New taxa for some species of the genus *Lepthyphantes* Menge *sensu lato* (Araneae, Linyphiidae, Micronetinae). *Revue Arachnologique* 14: 109–128.

Scharff N. 1990. Spiders of the family Linyphiidae from the Uzungwa mountains, Tanzania (Araneae). *Entomologica Scandinavica, Supplement* 36: 1–95.

Simon E. 1894. *Histoire naturelle des araignées. Deuxième édition, tome premier*. Roret, Paris. https://doi.org/10.5962/bhl.title.51973

Simon E. 1905. Arachnides de Java, recueillis par le Prof. K. Kraepelin en 1904. *Mitteilungen aus dem Naturhistorischen Museum in Hamburg* 22: 49–73.

Simon E. & Fage L. 1922. Biospeologica XLIV. Araneae des grottes de l'Afrique orientale. *Archives de Zoologie Expérimentale et Générale* 60: 523–555.

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.

Tanasevitch A.V. 1996a. Reassessment of the spider genus *Wubanoides* Eskov, 1986 (Arachnida: Araneae: Linyphiidae). *Reichenbachia* 31: 123–129.

Tanasevitch A.V. 1996b. Two new genera of the family Linyphiidae from Tuva, south Siberia, Russia (Arachnida Aranei Linyphiidae). *Arthropoda Selecta* 4 (3/4): 65–69.

Tanasevitch A.V. 2020. Linyphiid spiders collected by V. Mahnert in Kenya, with the description of a new genus and two new species (Arachnida: Araneae). *Revue suisse de Zoologie* 127 (2): 349–360. https://doi.org/10.35929/RSZ.0024

Tanasevitch A.V. 2001. A new micronetine genus proposed for the *tchatkalensis* species-group of *Lepthyphantes* Menge (*sensu lato*) (Arachnida: Araneae: Linyphiidae: Micronetinae). *Reichenbachia* 34: 19–32.

Tanasevitch A.V. 2023. Survey of the Ethiopian linyphiid spider fauna. I. Subfamily Erigoninae (Arachnida,Araneae,Linyphiidae).*Zootaxa*5346(4):420–442.https://doi.org/10.11646/zootaxa.5346.4.4

Tu L.H. & Hormiga G. 2010. The female genitalic morphology of "micronetine" spiders (Araneae, Linyphiidae). *Genetica* 138: 59–73.

Tu L.H. & Hormiga G. 2011. Phylogenetic analysis and revision of the linyphiid spider genus *Solenysa* (Araneae: Linyphiidae: Erigoninae). *Zoological Journal of the Linnean Society* 161 (3): 484– 530. https://doi.org/10.1111/j.1096-3642.2010.00640.x

Tu L.H. & Li S.Q. 2006. The first report on female *Solenysa wulingensis* (Araneae, Linyphiidae) and comparison with its sister species *Solenysa geumoensis*. *Acta Zootaxonomica Sinica* 31: 324–329.

Tu L.H., Ono H. & Li S.Q. 2007. Two new species of *Solenysa* Simon, 1894 (Araneae: Linyphiidae) from Japan. *Zootaxa* 1426: 57–62. https://doi.org/10.11646/zootaxa.1426.1.4

Tullgren A. 1910. Araneae. *In*: Sjöstedts Y. (ed.) *Wissenschaftliche Ergebnisse der Schwedischen zoologischen Expedition nach dem Kilimandjaro, dem Meru und den umgebenden Massaisteppen Deutsch-Ostafrikas 1905–1906 unter Leitung von Prof. Dr. Yngve Sjöstedt*. Kungliga Svenska Vetenskapsakademien 20 (6): 85–172. https://doi.org/10.5962/bhl.title.6622

Wang F., Ballesteros J.A., Hormiga G., Chesters D., Zhang Y.J., Sun N., Zhu C.D., Chen W. & Tu L.H. 2015. Resolving the phylogeny of a speciose spider group, the family Linyphiidae (Araneae). *Molecular Phylogenetics and Evolution* 91: 135–149. https://doi.org/10.1016/j.ympev.2015.05.005

World Spider Catalog 2024. World Spider Catalog. Version 25.5. Natural History Museum Bern. Available from http://wsc.nmbe.ch [accessed 10 Oct. 2024].

Wunderlich J. 1992. Die Spinnen-Fauna der Makaronesischen Inseln: Taxonomie, Ökologie, Biogeographie und Evolution. *Beiträge zur Araneologie* 1: 1–619.

Manuscript received: 20 April 2024
Manuscript accepted: 4 November 2024
Published on: 25 February 2025
Topic editor: Magalie Castelin
Section editor: Arnaud Henrard
Desk editor: Eva-Maria Levermann